

**A NEW
ECOLOGICAL WORKING FRAMEWORK
FOR OVERCOMING
DRUG-FACILITATED SEXUAL ASSAULTS**



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2021



Universidad
de Alcalá

Programa de Doctorado
en Ciencias Forenses

INSTITUTO UNIVERSITARIO DE INVESTIGACIÓN
EN CIENCIAS POLICIALES **iuicp**

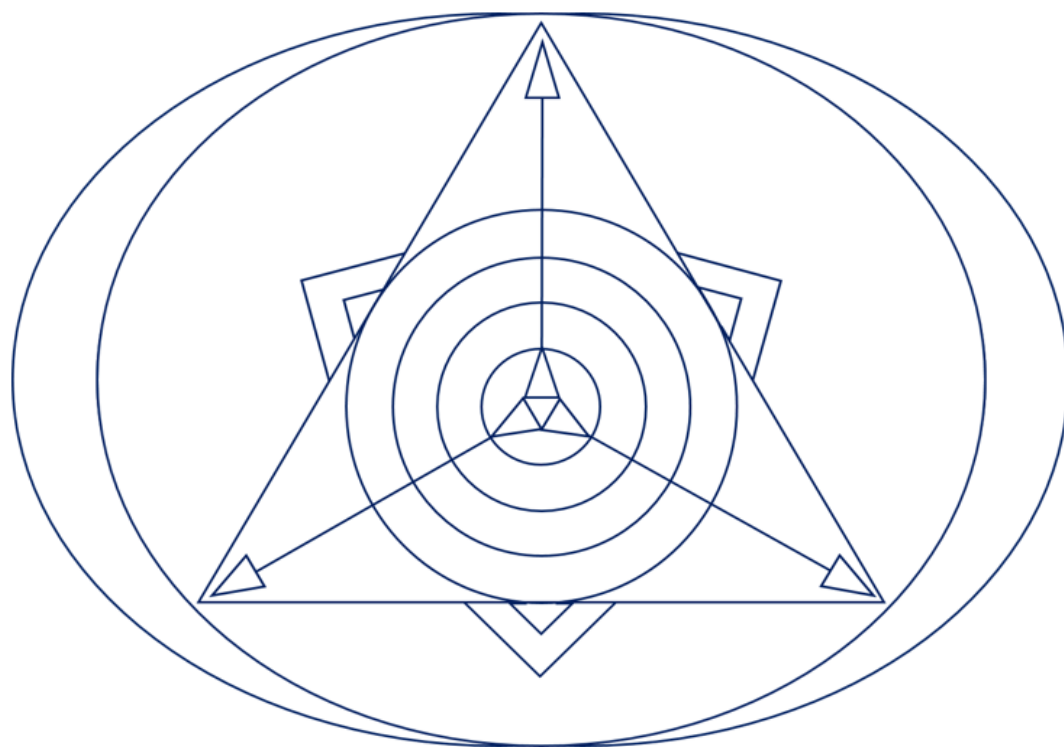
A tod@s.

As cousas, de seu, non se fan.

Perfecta Prego Presa

El trabajo de investigación recogido en la presente memoria ha sido posible gracias a la concesión de una ayuda para la Formación del Profesorado Universitario y de los proyectos de investigación UAH/EV951 y UAH/EV1024, del Programa Propio de la Universidad de Alcalá. Asimismo, este trabajo también se ha realizado con el apoyo de los proyectos IUICP/PI2016/002 y IUICP/PI2019/006, del Instituto Universitario de Investigación en Ciencias Policiales. Por último, el trabajo desarrollado también fue posible gracias al proyecto MSCBS-PNSD-2018/032, de Ministerio de Sanidad, Servicios Sociales e Igualdad del Gobierno de España.

Summary



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Drug-facilitated sexual assaults (DFSA) are a specific form of sexual violence often connected with the university higher education setting. In this regard, this thesis represents an effort for mobilizing the university higher education's positive influence potential for facing this violence problem from inside the own university context. The work consists of developing and applying a new ecological working framework as a tool for improving knowledge about the DFSA phenomenon and strengthening the generation of support to efficient, well-targeted, and evidence-based solutions facing this form of violence. The thesis dissertation begins with a look at the context grounding this thesis. After that, the presentation of the developed Doctoral work encompasses six chapters. Subsequently, the thesis's conclusions resume the main findings.

An **initial contextualization** frames the developed work in the current global efforts for achieving sustainable development, in light of the challenges acknowledged by the 2030 Agenda and by other relevant documents. This initial context grounding the thesis envisages violence as the destructive, disintegrative phenomenon underlying unsustainable human behaviours and presents the nonviolence approach as a proper way to overcome it. Likewise, it shows forensic intelligence's helpfulness for strengthening a transdisciplinary approach among forensic sciences and criminology to support security from science-based preventive actions facing violence problems, specifically the DFSA phenomenon, with a high prevalence affecting young people in leisure nightlife contexts.

Chapter 1 compiles the development of a new ecological working framework as a singular and innovative instrument helpful for improving the holistic and transdisciplinary understanding of the DFSA phenomenon and the interrelation of the multiple factors involved in the victimization process. This chapter applies the new working framework's multilevel structure to the careful examination of multiple publications related to the study problem, including reviews, forensic case studies, criminological studies, and other related investigations about the DFSA phenomenon. In this way, this first chapter allows an in-depth approximation to this specific problem by structuring the available evidence in multiple influence and violence levels, which significantly facilitates a profound phenomenon understanding. Victimization by DFSA mainly affects young women in leisure nightlife contexts. In most cases, women suffer from opportunistic assaults perpetrated by one male they known when they become incapacitated for expressing sexual consent because of high voluntary alcohol use. Likewise, the developed new ecological working framework is not only applicable as a study tool, but it also helps guide

well-targeted, evidence-based decision-making processes for generating support to efficient solutions facing the cultural, direct, and institutional dimensions of the DFSA phenomenon.

Once in-depth studied the DFSA phenomenon, the three following chapters focus on applying the developed new ecological working framework for generating support to efficient solutions facing this form of sexual violence. In this way, Chapter 2 compiles efforts for generating support targeting the cultural level. Meanwhile, chapters 3 and 4 show actions at the direct and institutional levels, respectively.

Chapter 2 encompasses two different works. On the one hand, it presents an extensive bibliographical review studying the DFSA's opportunistic variant. The review addresses various types of studies, including forensic casuistry studies, studies on risk factors for sexual victimization of adolescents and young people, and studies on recreational habits of these population groups, especially on the dynamics of drug use and sexual interrelation. This first work in Chapter 2 begins approaching the DFSA victimization by reviewing victims' gender and age, victimization context, and assaults' spatial and temporal location. Next, it delves more deeply into contextual aspects related to psychoactive substance use, sexual interrelation, and drug-mediated sexual interaction. The results points out that the hegemonic current leisure model facilitates opportunistic sexual contacts by combining sexual interaction and drug use patterns, resulting in sexual interactions mediated by psychoactive substances. Subsequently, this work presents the difficulties faced by women victims of opportunistic DFSA to self-acknowledge as such, which influences their decisions of reporting the suffered episode and seeking adequate help. Main difficulties include social questioning stemming from gender-based double standards regarding drug use and sexual interaction, amnesia, lack of injuries, emotional harm, and widespread myths about the DFSA phenomenon. The myths relate to the *modus operandi*, involved substances, the victim's conscious state during the assault, and the victim-assailant relationship. These difficulties, enhanced by a lack of social support, can lead victims to inadequate coping strategies based on psychoactive substance abuse. Resulting incapacitating effects increase the risk of locks victims into a dynamic of suffering by spirals of cyclical re-victimization. Based on these observations, this first work in Chapter 2 calls attention to the need for implementing a new viewpoint about the opportunistic DFSA and increasing social awareness about this problem's severity. On the other hand, Chapter 2 also compiles a second work consisting of a survey-based study about Spanish youth's attitudes and perceptions regarding sexual violence and the DFSA phenomenon in leisure nightlife contexts. Data were collected through an online questionnaire, and a bivariate analysis was performed to identify possible gender-related sociodemographic factors and recreational nightlife habits. This work

confirms the broad spread among Spanish youth of misconceptions about the DFSA phenomenon related to the type of consumption, the substance involved, and the victim-assailant relationship. Likewise, the study observes that a significant segment of Spanish young people does not perceive certain forms of sexual violence and shares attitudes and perceptions justifying it. Men are more willing than women to have sexual intercourse with someone unable to express consent because of drug effects. Moreover, they believe more strongly that sexual assaults occur because of the victim's use of alcohol or other drugs. In turn, women feel a lack of social support in leisure nightlife contexts, and they believe significantly more than males that females' drug use is socially more penalized than drug use by males. Besides, young Spanish women perceive leisure nightlife as a context characterized by a low personal safety level. A vast majority are concerned about the risk of sexual violence in this context. They feel that, in this context, society blames them for the sexual violence they suffer, and that prevails impunity towards assailants. Therefore, findings from Chapter 2 resulting from working on the DFSA phenomenon's cultural level provide valuable information for designing and articulating well-targeted preventive efforts facing this form of sexual violence.

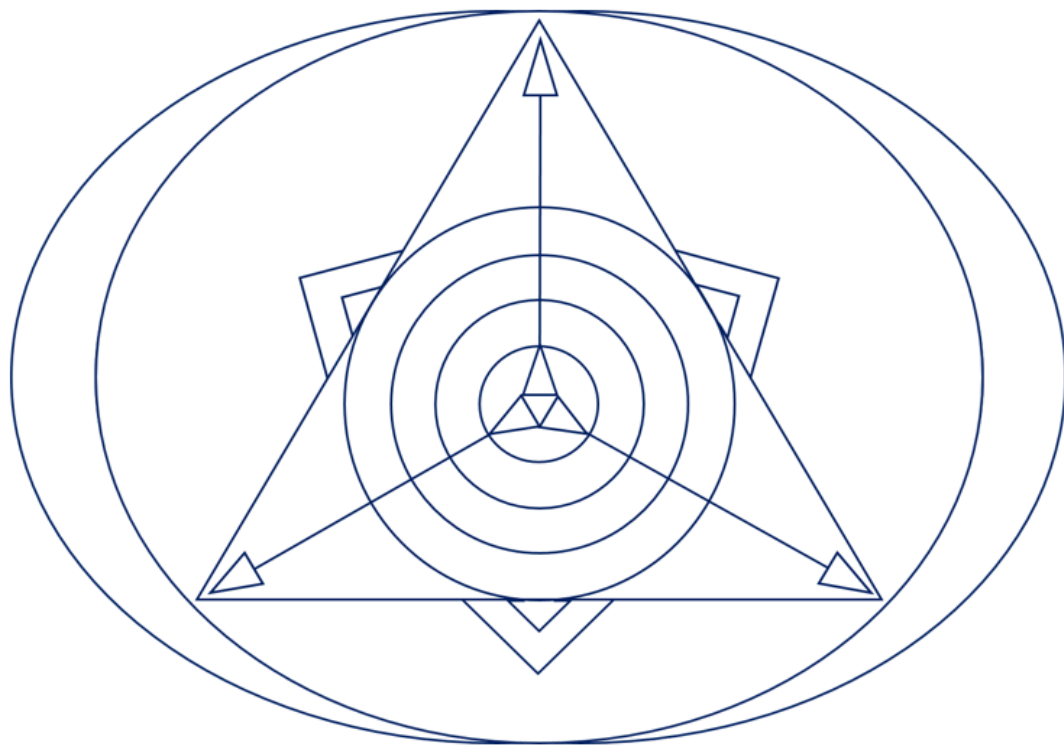
Chapter 3 compiles actions focused on the DFSA's direct dimension. It shows the new ecological working framework's application to designing and articulating a preventive strategy within the educational system, facing the DFSA in young leisure nightlife contexts. In this sense, this chapter presents the new framework's applicability as a helpful tool for strategic thinking and developing broad-scope well-targeted, evidence-based preventive strategies, with an intersectional focus on drug use and sexual violence. This work applied different educational approaches as tactical resources, including the service-learning pedagogy and peer-to-peer communication. Furthermore, it focused on the three personal elements of the routine activity theory (assailants, victims, and witnesses). Consequently, the resulting preventive strategy allowed a vertical intervention within the educational system that reached more than five hundred young people from different levels, including university and pre-university contexts, high school, and secondary education. They received awareness messages about the severity of the DFSA phenomenon in leisure nightlife contexts. Besides, this work showed forensic intelligence as an essential element for guiding decision-making processes regarding the implemented preventive strategy. This component shows the significant role that forensic science can play in strategic thinking focused on designing and articulating well-targeted preventive efforts facing the DFSA phenomenon beyond the traditional retroactive view limited to courtrooms and intelligence-led policing.

Chapter 4 contains actions targeting the DFSA phenomenon's institutional dimension, divided into four different parts. Firstly, a series of earliest steps consisting of the application for various public grants for financial support to research projects on the study problem, and the financing of research stays in government institutions. Subsequently, actions developed from strategic positions within different public institutions both nationally and in the international sphere. On the one hand, efforts articulated from the Latin America and the Caribbean Liaison Office of the United Nations Office on Drugs and Crime (UNODC). In this sense, the chapter compiles the review of a protocol for the judicial investigation of rape crimes in the Nuevo León State (Mexico) and the development of a new prevention model for the DFSA phenomenon in Mexico. Both actions were carried out from the Gender and Justice Project of UNODC. Likewise, it also contains a proposal to consider sexual violence and the victim's state of vulnerability in the Latin America and the Caribbean Crime Victimization Survey. This proposal's articulation was possible by collaborating with the Center of Excellence for Statistical Information on Government, Crime, Victimization and Justice (CoE) through a Ph.D. stay in this international institution. On the other hand, continuing the efforts carried out from strategic positions in public institutions, Chapter 4 also includes the development of a new methodology for the treatment and toxicological analysis of blood samples from DFSA victims. This work in forensic toxicology was possible by working from the National Institute of Toxicology and Forensic Sciences (INTCF), belonging to the Spanish Government's Ministry of Justice, in another research stay. At this point, the chapter describes developing a new general screening method that includes almost one hundred compounds related to DFSA and the comparison of different blood sample preparation processes based on liquid-liquid extraction, solid-phase extraction, and protein precipitation. Besides, it shows the successful application of the final methodology to the analysis of several blood samples from real cases. Finally, Chapter 4 compiles actions to increase government authorities and institutions' awareness about the severity of the DFSA phenomenon. On the one hand, through participation in the United Nations 75 Initiative (UN75 Initiative), a global conversation forum held by the United Nations in 2020 to commemorate its 75th anniversary. This event served as a channel of expression for implementing a communication strategy aimed at sensitizing the authorities to the severity of victimization through opportunistic DFSA. The chapter describes the communicative strategy implemented through the UN75 Initiative. The other set of actions describes efforts made to spread the message of social and institutional awareness regarding the DFSA phenomenon through calls for prizes awarded by public institutions.

Chapter 5 presents a challenging application of the developed ecological framework as a study tool to improve understanding of the DFSA phenomenon, monitoring different violent experiences. The new framework's application delves into the identification of other profiles and contexts of victimization different from the assaults suffered by young women in leisure nightlife contexts. For that purpose, the developed new instrument is used for the disaggregated examination by influence levels of forensic data coming from alleged DFSA cases received in the INTCF over the five years from 2012 to 2017. Concretely, only cases that included requests for analysing of hair samples from victims. This specific set of casuistry is adequate for improving knowledge about alternative contexts, experiences, and profiles of victimization by DFSA. In this way, this chapter contributes to overcoming a contextual significant bias on investigating the DFSA phenomenon, excessively focused in the study of victimization related to youth leisure environments. Novel study lines observed include victimization of people underage during domestic cohabitation and alternative experience and contexts, such as labour, education, healthcare, women trafficking, and the daily life of people with intellectual disabilities.

The last chapter, **Chapter 6**, frames this thesis within challenges currently faced by sustainable development, showing the possibility of applying the developed new ecological working framework to problems of violence other than DFSA. The dissertation ends with the exposition of the main conclusions resulting from this thesis.

Resumen



Resumen

Las agresiones sexuales facilitadas por drogas (DFSA) constituyen una forma específica de violencia sexual frecuentemente relacionada con el contexto de la educación superior universitaria. En este sentido, esta tesis constituye un esfuerzo para movilizar el potencial de influencia positiva de la educación superior universitaria con la finalidad de hacer frente a este problema desde el propio ámbito universitario. El trabajo desarrolla y aplica un nuevo marco de trabajo ecológico como herramienta para mejorar el conocimiento sobre el fenómeno DFSA y fortalecer la generación de apoyo a soluciones eficientes, bien dirigidas y basadas en evidencia frente a esta forma de violencia. La disertación comienza con una mirada al contexto que fundamenta esta tesis. Después, la presentación del trabajo de Doctorado desarrollado comprende seis capítulos. Posteriormente, las conclusiones de la tesis resumen los principales hallazgos del trabajo realizado.

Inicialmente, una primera contextualización enmarca el trabajo desarrollado en los esfuerzos globales de actualidad para el logro del desarrollo sostenible, a la luz de los desafíos reconocidos por la Agenda 2030 y por otros documentos de relevancia. La tesis se fundamenta en este contexto inicial, visualizando la violencia como el fenómeno destructivo y desintegrador que subyace a los comportamientos humanos no sostenibles, al mismo tiempo que presenta el enfoque de la noviolencia como un modo adecuado para la superación de la violencia. Asimismo, esta contextualización inicial muestra la utilidad de la inteligencia forense para fortalecer un enfoque transdisciplinar entre las ciencias forenses y la criminología. Se trata de un enfoque capaz de promover la seguridad mediante acciones preventivas con base científica frente a problemas de violencia. Concretamente, frente al fenómeno DFSA, un problema que afecta particularmente a la comunidad juvenil en contextos de ocio nocturno.

El **Capítulo 1** recopila el desarrollo de un nuevo marco de trabajo ecológico como un instrumento singular e innovador, útil para mejorar la comprensión holística y transdisciplinar del fenómeno DFSA y de la interrelación de los múltiples factores involucrados en el proceso de victimización. Este capítulo aplica la estructura multinivel del nuevo marco de trabajo a múltiples publicaciones relacionadas con el problema de estudio, incluidas revisiones, estudios de casos forenses, estudios criminológicos y otras investigaciones relacionadas con el fenómeno DFSA. De este modo, este primer capítulo permite una aproximación en profundidad a esta problemática específica, al estructurar la evidencia disponible en múltiples niveles de influencia y de violencia, lo que facilita significativamente una comprensión profunda del fenómeno. La victimización mediante DFSA afecta principalmente a

mujeres jóvenes en contextos de ocio nocturno. En la mayoría de los casos, las mujeres sufren agresiones oportunistas perpetradas por un hombre conocido, en situaciones en las que se encuentran incapacitadas para expresar su consentimiento sexual debido al consumo voluntario de dosis de alcohol elevadas. Además, el nuevo marco de trabajo ecológico desarrollado no es aplicable únicamente como herramienta de estudio, sino que también ayuda a orientar procesos de toma de decisiones, bien dirigidos y basados en evidencia, enfocados en la generación de apoyo a soluciones eficientes frente a las dimensiones cultural, directa e institucional del fenómeno DFSA.

Una vez estudiado en profundidad el fenómeno DFSA, los tres capítulos siguientes se enfocan en la aplicación del nuevo marco de trabajo ecológico desarrollado para la generación de apoyo a soluciones eficientes frente a esta forma de violencia sexual. De este modo, el Capítulo 2 recopila los esfuerzos realizados para generar apoyos dirigidos al nivel cultural. A su vez, los capítulos 3 y 4 muestran las acciones emprendidas a nivel directo e institucional, respectivamente.

El **Capítulo 2** incluye dos trabajos diferentes. Por un lado, presenta una extensa revisión bibliográfica centrada en el estudio de la variante oportunista de las DFSA. Esta revisión aborda diversos tipos de publicaciones, incluyendo estudios de casuística forense, investigaciones sobre factores de riesgo de victimización sexual en adolescentes y jóvenes, y estudios acerca de los hábitos recreativos de estos dos grupos poblacionales, especialmente sobre sus dinámicas de consumo de drogas y de interrelación sexual. Este primer trabajo, dentro del Capítulo 2, comienza con el abordaje de la victimización mediante DFSA revisando el género y la edad de las víctimas, el contexto de victimización y la ubicación espacial y temporal de las agresiones. A continuación, profundiza en los aspectos contextuales relacionados con el uso de sustancias psicoactivas, la interrelación sexual y la interacción sexual mediada por drogas. Los resultados indican que el modelo de ocio predominante en la actualidad facilita los contactos sexuales oportunistas, al combinar patrones de interacción sexual y de uso de drogas, dando como resultado interacciones sexuales mediadas por sustancias psicoactivas. Posteriormente, este trabajo presenta las dificultades que las mujeres víctimas de DFSA oportunista experimentan para reconocerse a sí mismas como víctimas de violencia sexual, dificultades que influyen en la decisión de denunciar la agresión sufrida y en la búsqueda de ayuda adecuada. Las principales dificultades que enfrentan las víctimas incluyen el cuestionamiento social (debido al doble juicio, basado en el género, existente en torno al uso de drogas y a la interacción sexual), la amnesia padecida por las víctimas, la ausencia de lesiones, el daño emocional y los mitos generalizados sobre el fenómeno DFSA. En este sentido, los principales mitos se relacionan con el *modus*

operandi, las sustancias involucradas en las agresiones, el estado de consciencia de la víctima durante la agresión y la relación existente previamente entre la víctima y la persona agresora. Estas dificultades se ven reforzadas por la falta de apoyo social y pueden llevar a las víctimas a estrategias inadecuadas de afrontamiento del dolor emocional, basadas en el abuso de sustancias psicoactivas. En esta línea, los efectos incapacitantes resultantes del abuso de sustancias incrementan el riesgo de encerrar a las víctimas en una dinámica de sufrimiento mediante la repetición de espirales de re-victimización cíclica. A partir de estas observaciones, este primer trabajo dentro del Capítulo 2 llama la atención sobre la necesidad de implementar un nuevo punto de vista acerca de la variante oportunista del fenómeno DFSA, con la finalidad de aumentar la conciencia social frente a la gravedad de este problema. Por otro lado, el Capítulo 2 recopila un segundo trabajo consistente en un estudio basado en encuesta sobre las actitudes y percepciones del colectivo joven español ante el fenómeno DFSA y la violencia sexual en contextos de ocio nocturno. Los datos del estudio se recogieron a través de un cuestionario en línea, y se realizó un análisis bivariado para identificar posibles factores sociodemográficos relacionados con el género, así como hábitos recreativos de ocio nocturno. Este trabajo confirma la amplia difusión, entre la juventud española, de conceptos erróneos sobre el fenómeno DFSA, relacionados con el tipo de consumo, las sustancias implicadas en las agresiones y la relación previa entre víctima y persona agresora. Asimismo, el estudio observa que un segmento significativo de jóvenes españoles no percibe determinadas formas de violencia sexual. Es más, de hecho, comparten ciertas actitudes y percepciones con las que justifican la violencia sexual. Así, se observó que los hombres están más dispuestos que las mujeres a mantener relaciones sexuales con alguien que no puede expresar su consentimiento debido a los efectos de las drogas. Además, los hombres creen en mayor medida que las agresiones sexuales ocurren debido al uso de alcohol u otras drogas por parte de las víctimas. A su vez, las mujeres sienten una falta de apoyo social en contextos de ocio nocturno y creen, con una frecuencia mucho mayor que los hombres, que el consumo femenino de drogas está socialmente más penalizado que el consumo masculino. Asimismo, las mujeres jóvenes españolas perciben el ocio nocturno como un contexto caracterizado por un bajo nivel de seguridad personal, y una gran mayoría está preocupada por el riesgo de sufrir violencia sexual en este contexto. En este sentido, sienten que, dentro de este ámbito, la sociedad las culpabiliza por la violencia sexual que ellas mismas sufren y que, además, prevalece la impunidad hacia los agresores varones. Por lo tanto, los hallazgos del Capítulo 2, resultantes de concentrar esfuerzos en el nivel cultural del fenómeno DFSA, brindan una valiosa información para diseñar y articular esfuerzos preventivos bien dirigidos frente a esta forma de violencia sexual.

El **Capítulo 3** recopila las acciones enfocadas en la dimensión directa de las DFSA. Este tercer capítulo muestra la aplicación del nuevo marco de trabajo ecológico para diseñar y articular una estrategia preventiva, dentro del sistema educativo, frente a las DFSA en contextos de ocio nocturno juvenil. En este sentido, este capítulo presenta la aplicabilidad del nuevo marco como una herramienta útil para el pensamiento estratégico y el desarrollo de estrategias preventivas de amplio alcance, bien dirigidas y basadas en evidencia, con un enfoque interseccional, abordando tanto el uso de drogas como la violencia sexual. El trabajo realizado aplicó diferentes enfoques educativos como recursos tácticos, incluida la pedagogía de aprendizaje-servicio y la comunicación entre pares. Además, se centró en los tres elementos personales de la teoría de la actividad rutinaria (agresores, víctimas y testigos). En consecuencia, la estrategia preventiva resultante permitió una intervención vertical dentro del sistema educativo, la cual alcanzó a más de quinientos jóvenes de diferentes niveles educativos, tanto del contexto universitario como pre-universitario, incluyendo bachillerato y educación secundaria. Las personas alcanzadas recibieron mensajes de sensibilización sobre la gravedad del fenómeno DFSA en contextos de ocio nocturno. Además, este trabajo presentó la inteligencia forense como un elemento fundamental para la orientación de procesos de toma de decisiones relacionadas con la estrategia preventiva implementada. Este componente muestra el importante papel que puede llegar a desempeñar la ciencia forense en el pensamiento estratégico centrado en el diseño y articulación de esfuerzos preventivos bien dirigidos frente al fenómeno DFSA, más allá de la visión retroactiva tradicional limitada a los tribunales de justicia y a la vigilancia policial dirigida por inteligencia forense.

El **Capítulo 4** contiene las acciones dirigidas a la dimensión institucional del fenómeno DFSA, las cuales se dividen en cuatro partes bien diferenciadas. En primer lugar, este capítulo muestra una serie de pasos iniciales consistentes en la solicitud de diversas ayudas públicas para el apoyo económico a proyectos de investigación sobre la problemática de estudio, así como para la financiación de estancias de investigación en instituciones gubernamentales. Posteriormente, se desarrollaron acciones desde posiciones estratégicas en diversas instituciones públicas, tanto a nivel nacional como internacional. Por un lado, los esfuerzos articulados desde la Oficina de Enlace para América Latina y el Caribe de la Oficina de las Naciones Unidas contra la Droga y el Delito (UNODC). En este sentido, el capítulo recopila la revisión de un protocolo para la investigación judicial de delitos de violación en el Estado de Nuevo León (México) y el desarrollo de un nuevo modelo de prevención del fenómeno DFSA en México. Ambas acciones se llevaron a cabo en el contexto del Proyecto de Género y Justicia de la UNODC. Asimismo, este capítulo también contiene una propuesta para la consideración del estado de vulnerabilidad de la víctima

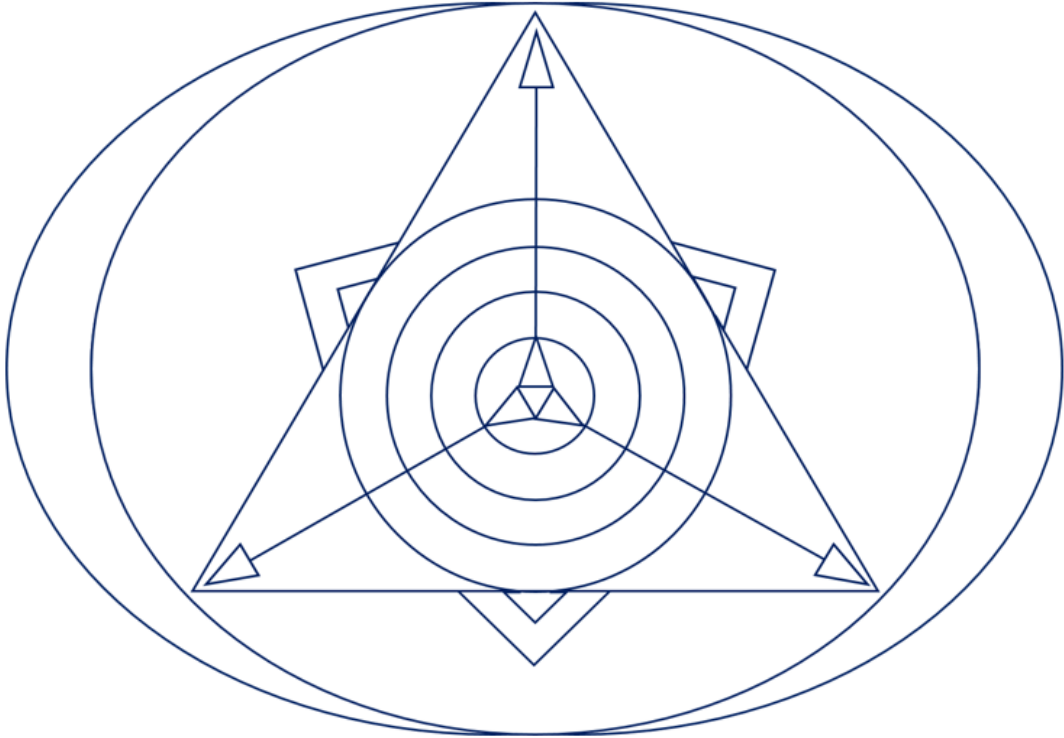
en la Encuesta de Victimización para América Latina y el Caribe (LACSI). La articulación de esta propuesta fue posible mediante la colaboración con el Centro de Excelencia para la Información Estadística de Gobierno, Victimización y Justicia (CoE) a través de una estancia pre-doctoral en esta institución internacional. Por otra parte, continuando con los esfuerzos realizados desde posiciones estratégicas en instituciones públicas, el Capítulo 4 también incluye el desarrollo de una nueva metodología para el tratamiento y análisis toxicológico de muestras de sangre procedentes de víctimas de DFSA. Este trabajo en el ámbito de la toxicología forense fue posible gracias a la labor realizada desde el Instituto Nacional de Toxicología y Ciencias Forenses (INTCF), perteneciente al Ministerio de Justicia del Gobierno español, durante otra estancia de investigación. En este sentido, el capítulo describe el desarrollo de un nuevo método para el cribado general de tóxicos, el cual incluye casi un centenar de compuestos relacionados con DFSA, así como la comparación de diferentes procesos de preparación de muestras de sangre, basados en extracción líquido-líquido, extracción en fase sólida y precipitación de proteínas. Además, se muestra la aplicación exitosa de la metodología final al análisis de varias muestras de sangre procedentes de casos DFSA reales. Finalmente, el Capítulo 4 recopila diversas acciones llevadas a cabo para aumentar la conciencia de autoridades e instituciones gubernamentales sobre la gravedad del fenómeno DFSA. Por un lado, a través de la participación en la Iniciativa UN75, un foro para el diálogo global, coordinado por las Naciones Unidas a lo largo del año 2020 para conmemorar su 75º aniversario. Este evento sirvió como canal de expresión para implementar una estrategia comunicativa dirigida a sensibilizar a las autoridades sobre la gravedad de la victimización femenina mediante la variante oportunista del fenómeno DFSA. De este modo, el capítulo describe la estrategia comunicativa implementada a través de la Iniciativa UN75. A su vez, el otro conjunto de acciones describe los esfuerzos emprendidos para difundir un mensaje de sensibilización social e institucional frente al fenómeno DFSA mediante la participación en convocatorias a premios otorgados por instituciones públicas.

El **Capítulo 5** presenta una aplicación desafiante del marco ecológico desarrollado, el cual es empleado como herramienta de estudio para mejorar la comprensión del fenómeno DFSA mediante la monitorización de diferentes experiencias de violencia. Esta aplicación del nuevo marco de trabajo permite profundizar en la identificación de otros perfiles y contextos de victimización distintos a las agresiones sufridas por mujeres jóvenes en contextos de ocio nocturno. Con esta finalidad, el instrumento desarrollado se aplica al examen desagregado, por niveles de influencia, de múltiples datos forenses provenientes de los supuestos casos de DFSA recibidos en el INTCF durante el periodo de cinco años comprendido entre 2012 y 2017. En concreto, se aplica a la revisión, únicamente, de los casos que incluyeron solicitudes para el

análisis de muestras de cabello de las víctimas. Este conjunto específico de la casuística forense es adecuado para mejorar el conocimiento sobre contextos, experiencias y perfiles de victimización alternativos mediante DFSA. De esta forma, este capítulo contribuye a superar un sesgo contextual significativo en la investigación del fenómeno DFSA, excesivamente centrado en el estudio de la victimización relacionada con los entornos de ocio juvenil. Así, se observan líneas de estudio novedosas, incluyendo la victimización de personas menores de edad durante situaciones de convivencia doméstica, así como experiencias y contextos de victimización alternativos, tal y como el ámbito laboral, educativo, sanitario, la trata de mujeres y la vida cotidiana de personas con discapacidad intelectual.

El último capítulo, el **Capítulo 6**, enmarca esta tesis dentro de los desafíos que enfrenta actualmente el desarrollo sostenible, mostrando la posibilidad de aplicar el nuevo marco de trabajo ecológico desarrollado a otros problemas de violencia diferentes al DFSA. La disertación finaliza con la exposición de las principales conclusiones resultantes de esta tesis.

Acronyms

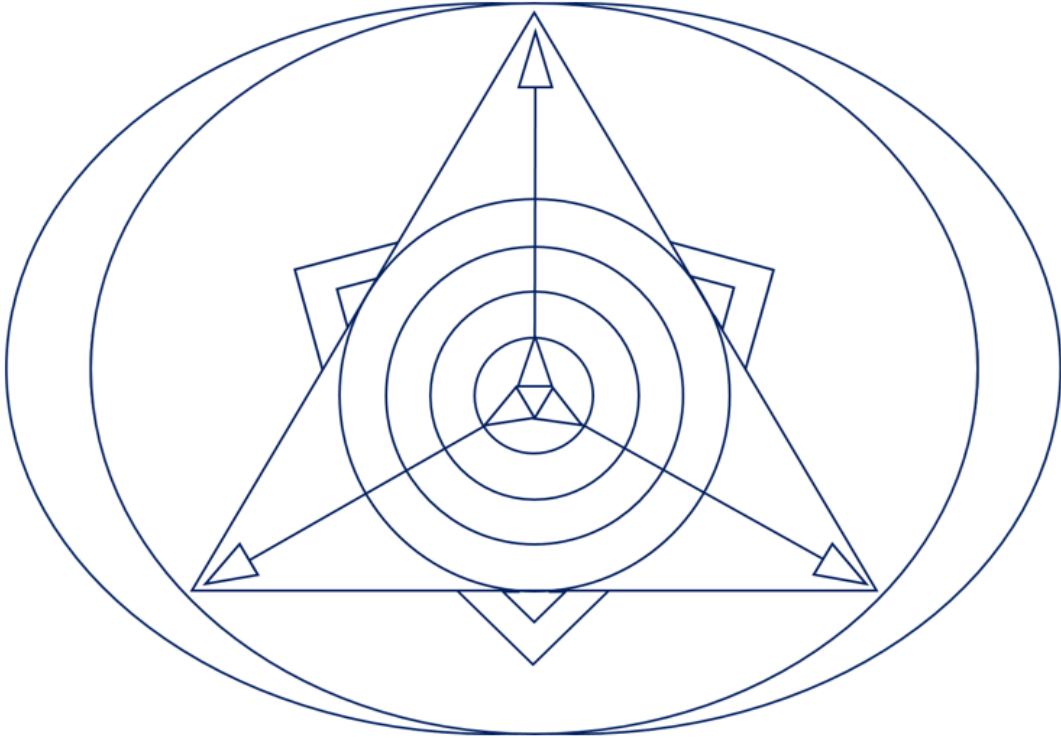


Acronyms

AMMSA	Acceptance of Modern Myths about Sexual Aggression
BAC	Blood alcohol concentration
CBNS	Community Brigades from North to South
CE	Collision Energy
CEDIA	Cloned Enzyme Donor Immunoassay
CI	Confidence Intervals
CoE	Center of Excellence for Statistical Information on Government, Crime, Victimization and Justice
CXP	Collision cell Exit Potential
DFSA	Drug-facilitated sexual assault
DP	Declustering Potential
EDDP	2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine
EPI	Enhanced Product Ion
GABA	gamma-Aminobutyric acid
GAPH	Groups of Adolescents Promoting Health
GDNPD	Government Delegation for the National Plan on Drugs
GDVG	Government Delegation against Gender Violence
GHB	gamma-Hydroxybutyrate
HPLC	High-Performance Liquid Chromatography
HPLC-MS/MS	High-Performance Liquid Chromatography coupled to Tandem Mass Spectrometry
IBECS	Índice Bibliográfico Español en Ciencias de la Salud
ICCSP	International Classification of Crime for Statistical Purposes
IDA	Information Dependent Acquisition
ÍNDICES-CSIC	Información y Documentación de la Ciencia en España
INTCF	National Institute of Toxicology and Forensic Sciences
ISs	Internal Standards
LACSI	Latin America and the Caribbean Crime Victimization Survey Initiative
LC-MS/MS	Liquid chromatography coupled to Tandem Mass Spectrometry
LODs	Limits of Detection
LSD	Lysergic acid diethylamide
4-MEC	4-Methylethcathinone

6-MAM	6-Monoacetylmorphine
MCX	Mixed-mode Cation Exchange
MDA	3,4-Methylenedioxyamphetamine
MDEA	3,4-Methylenedioxymethamphetamine
MDGs	Millennium Development Goals
MDMA	3,4-Methylenedioxymethamphetamine
MS	Mass Spectrometry
OR	Odds Ratio
ORa	Adjusted Odds Ratio
Q-Trap	Ion trap quadrupole
RECOLECTA	Recolector de Ciencia Abierta
S/N	Signal-to-Noise Ratio
SDG	Sustainable Development Goal
SES-LFV	Experiences Survey Long Form Victimization
sMRM	Scheduled Multiple Reaction Monitoring
SOFT	Society of Forensic Toxicologists
SLNCVS	Saint Lucia National Crime Victimization Survey
TOF	Time-of-Flight
UHPLC-MS/MS	Ultra High Performance Liquid Chromatography coupled with Tandem Mass Spectrometry
UN75	United Nations 75
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNODC	United Nations Office on Drugs and Crime
UPLC-TOF-MS	Ultra Performance Liquid Chromatography Time-of-Flight Mass Spectrometry

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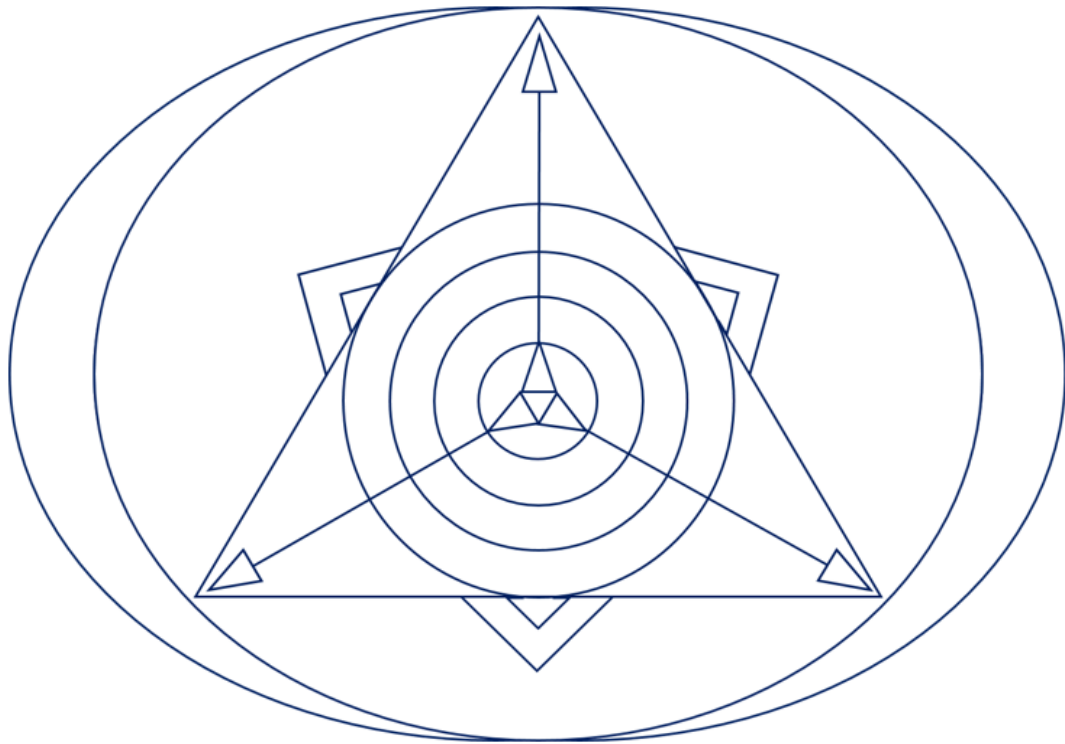


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Context Grounding this Thesis



Framework

The work developed throughout this PhD thesis is grounded on a context composed of four fundamental pillars. The 2030 Agenda for Sustainable Development [1] is the backbone of this core frame, becoming the action plan guiding the steps taken. Together with the Agenda, three other official documents adopted by the international community through the United Nations system complete the basic platform grounding this thesis. These three other essential bases are the United Nations Strategy for Youth [2], the World Declaration on Higher Education for the XXI Century [3], and the Seville Statement on Violence [4]. A common guiding thread connects the four documents. All of them share the firm determination to build a better world free of violence.

This thesis feeds from this optimistic and transformative view. Based on these four documents, this earliest section becomes a transcendental beginning. It compiles the building process of the framework underpinning the entire work developed throughout this thesis. This initial effort is crucial for framing and contextualizing all the subsequent actions. The construction of this framework allows visualizing the breath of hope shared by the four documents included. **This PhD thesis settles down firmly on this purpose for building a better world.** Figure 1 illustrates the structure of the framework grounding this thesis.



Figure 1. The framework grounding this thesis.

1. Transforming our world: the 2030 Agenda for Sustainable Development.

The global community lived through a historic crossroad in 2015, adopting several significant agreements for multilateralism and international policy shaping. These include, among others, the Paris Agreement on Climate Change [5], Sendai Framework for Disaster Risk Reduction [6], Addis Ababa Action Agenda on Financing for Development [7], and the 2030 Agenda for Sustainable Development [1]. Concerning the latter, on 25 September 2015, through Resolution A/RES/70/1, the General Assembly of the United Nations approved the United Nations summit's outcome document to adopt the post-2015 development agenda, entitled “Transforming our world: the 2030 Agenda for Sustainable Development” [1].

The adoption of the 2030 Agenda was a landmark achievement, a global agreement of unprecedented scope and significance. A historic decision that involved the Heads of State and Government and High Representatives of the 193 Member States, meeting at United Nations Headquarters in New York during the Organization's seventieth anniversary. This new universal Agenda provides a shared global vision towards sustainable development for all through a comprehensive and far-reaching set of universal and transformative goals and targets. In this way, the scale, ambition, and approach of this global agreement result in a transformative vision towards the three dimensions, social, environmental, and economic, of sustainability [8].

All signatories agreed in a global commitment to achieving sustainable development in these three dimensions in an integrated and balanced manner. They expressed their willingness to take the bold and transformative steps needed to shift the world on to a sustainable and resilient path. In this line, among other significant challenges, the Agenda's introductory declaration resolve, for 2030, to build peaceful, just and inclusive societies, and to protect human rights and promote gender equality and the empowerment of women and girls.

The Agenda constitutes a plan of action to achieve multiple challenges focused on people, the planet, and prosperity, some of which seek to strengthen universal peace in larger freedom. It constitutes a plan for stimulating progress in five critical importance areas: people, peace, partnership, prosperity, and the planet. These are the five principal guiding principles, shared and universal, for establishing strategies and policies targeting sustainable development at the global, regional, and national levels. All countries and all stakeholders agreed to implement this plan acting in a collaborative partnership. More concretely, this plan of action shaped by the 193 United Nations Member States through the 2030 Agenda consists of a total of 17 Sustainable Development Goals (SDGs) and 169 targets. These SDGs are global and universally applicable, taking into account national realities, capacities, and development levels [8].

1.1. The 2030 Agenda's building process.

The 2030 Agenda results from the broadest and most participatory consultation process in the United Nations' history, becoming a multilateral consensus among governments and other actors, such as civil society, academia, and the private sector [9]. In turn, within the Agenda, the SDGs and targets come from decades of work developed by many people in multiple countries worldwide and by the United Nations system [10]. As such, the Agenda's normative foundations emerge from the United Nations Charter of 1945 and include more than forty references of conventions and conferences of the United Nations up to 2015 [9]. When studying this building process, we can look until thirty years back to the Earth Summit in Rio de Janeiro, Brazil, in June 1992. On that occasion, more than one hundred seventy countries adopted the Agenda 21 as an action plan to build a global partnership for sustainable development [11]. Just a decade later, during the Millennium Summit celebrated in September 2000, Member States unanimously adopted the Millennium Declaration through Resolution A/RES/55/2 [12]. The United Nations General Assembly recognized collective responsibility to uphold the principles of human dignity, equality, and equity at the global level and for all the world's people, especially the most vulnerable [12]. In this sense, the Millennium Declaration was a landmark commitment especially targeting to fight poverty in its many dimensions and reduce extreme poverty by 2015 [13]. Likewise, the Millennium Declaration assumed certain fundamental values as essential to international relations in the twenty-first century, including freedom, equality, solidarity, tolerance, respect for nature, and shared responsibility [12]. At the dawn of a new millennium, this declaration led to elaborating an inspiring framework composed of eight goals, named the Millennium Development Goals (MDGs), and adopted in 2000 as an overarching development framework for the next fifteen years [13]. However, although this period provided some remarkable achievements, it ended with uneven progress in achieving the MDGs [13]. A few years before the period of fifteen years finished, the global community acknowledged that inequalities persisted and that progress had been uneven across regions and countries, leaving significant gaps. The poorest and most vulnerable people were being left behind, showing the need for improving well-targeted efforts to reach them properly. The global community became aware of further progress required an unswerving political will and collective, long-term effort. It was necessary to tackle problems' root causes and integrate the economic, social, and environmental dimensions of sustainable development [13]. Consequently, a process started to formulate a post-2015 development agenda, an action plan with new development goals, the SDGs. This second group of goals was built upon the MDGs' achievements, seeking to address their unfinished business and complete what they did not achieve [1]. This process

began at the United Nations Conference on Sustainable Development (or Rio+20), celebrated in Rio de Janeiro, Brazil, in June 2012 [14]. During Rio+20, Member States adopted the outcome document "The Future We Want" [15], and launched a process to formulate a set of development goals and establish the United Nations High-level Political Forum on Sustainable Development [10]. This conference was the turning point for the United Nations system, Member States, civil society organizations, and other stakeholders to start working together on formulating the post-2015 development agenda. It started an inclusive consultation process through the Open Working Group of the General Assembly on SDGs and the Intergovernmental Committee of Experts on Sustainable Development Financing [14]. Reports from both groups formed the basis of the final package [8]. Likewise, intensive public consultation and engagement with civil society and other stakeholders worldwide were encouraged to ensure the broadest possible ownership of the new Agenda, paying particular attention to the poorest and most vulnerable [8]. The experience and evidence resulting from the efforts to achieve the MDGs also served as a springboard in this formulation process, offering numerous lessons [13]. However, the SDGs go far beyond the MDGs. In this sense, apart from continuing with previous development priorities, such as poverty eradication, the SDGs balance in an integrated manner the social, economic, and environmental dimensions of sustainable development. Besides, these new goals are global in nature and universally applicable and include multiple additional issues, such as the rule of law and peaceful societies, effective institutions, and good governance, among others [1]. As it will be seen further, the Agenda's linework for building peaceful and nonviolent societies is particularly relevant within this thesis context, which operates within the social dimension of sustainable development.

1.2. The integrated nature of the SDGs.

On the other hand, it is essential to consider another vital feature of the 2030 Agenda, repeatedly highlighted by the own document: the 17 SDGs and 169 targets are integrated, interlinked, and indivisible to each other [1]. These interlinkages and the SDGs' integrated nature are crucial to ensuring the realization of the Agenda's purpose. In this sense, because of this indivisible nature, the Agenda's preamble states that if realizing the full extent of this global action plan, all people's life would improve profoundly, and our world would be a better place [1]. This integrated approach is coming from numerous major conferences and summits. Among other, these major agreements include the Charter of the United Nations,[16] the Universal Declaration of Human Rights [17], the Millennium Declaration [12], the Declaration on the Right to Development [18], the Rio Declaration on Environment and Development [19], the World Summit on Sustainable Development [20], the World Summit for Social Development [21], the

Programme of Action of the International Conference on Population and Development [22], and the Beijing Platform for Action [23]. In this way, the interrelation between the different challenges and commitments identified by these major agreements calls for integrated solutions to address them effectively. For that reason, the Agenda adopts an integrated approach, with multiple deep interconnections and cross-cutting elements across the different goals and targets [1]. At this point, within this thesis context, we must highlight that this work shares and applies the integrated approach of the 2030 Agenda, focussing on various SDGs and targets. Concretely, this thesis involved an in-depth working on the goals listed down below.

1.3. SDGs approached within this thesis.

Visualizing this integrated nature is extremely useful for realizing the Agenda's purpose and achieve sustainable development since initial interlinkages between problems later become interconnections between solutions [1]. Within this matrix or integrated system, a first positive action to provide a particular solution translates into a multiplier positive effect favouring additional solutions for other problems. As will be seen throughout this thesis, the developed work illustrates in an excellent way this interlinkage nature characterizing the search of integrated solutions to address the 2030 Agenda's challenges. Table 1 compiles the set of SDGs and targets framing the work developed in this thesis.

Table 1. SDGs and targets framing the work developed in this thesis.

SDG	SDG's title	Target
3	Ensure healthy lives and promote well-being for all at all ages	3.5; 3.7
4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.7
5	Achieve gender equality and empower all women and girls	5.1; 5.2; 5.6
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	16.1; 16.2; 16.3; 16.7; 16.a
17	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	17.16; 17.16

2. Working with and for young people: The United Nations Youth Strategy

The work developed within this thesis framework constitutes a project developed by young people and mainly targeting young people. These unique youth nature and practicality have solid foundations, firmly rooting in diverse official papers at the international level, such as the 2030 Agenda for Sustainable Development [1]. However, due to the youthful spirit defining this

work, before the careful review of the documents shaping this part of the framework, it is necessary to throw light on some relevant aspects of youth.

2.1. What do we mean by youth?

Firstly, it is essential to recognize that youth, unlike other forms of identity, like ethnicity, is a transitional phase of life, that is, an aspect evolving and changing with time [24]. In this way, youth refers to the transitional period between childhood and adulthood [25]. The beginning and the end of this phase, pathways from childhood to youth and youth to adulthood, vary significantly depending on cultures [24, 25]. Regarding passage from youth to adulthood, various milestones or rites can signal the acquisition of relative autonomy and recognition of adult status, such as getting married, having children, or achieving economic independence [26, 27]. However, beyond the cultural notion, there is no consensus on a chronologically uniform age-based category of youth [24]. For instance, for statistical purposes, the United Nations defines “youth” as between 15 and 24, although diverse entities use different age definitions [24]. Meanwhile, the African Youth Charter defines youth as 18 to 35 years [24].

2.2. A huge population group that faces incredible difficulties.

On the other hand, another crucial aspect to note is that **today’s youth generation is the largest globally ever known** [2, 28]. In 2014, the world’s population between 10 and 24 years old reached 1.8 billion [29]. This youth generation faces numerous challenges violating their rights as human beings. They suffer intersecting forms of marginalization and interpersonal violence, even life-threatening risks, disproportionately affecting girls and young women in many parts of the world [2]. Consequently, diverse factors usually disrupt pathways from youth to adulthood, such as criminal violence, entrenched gender inequality, humanitarian and health crises, natural disasters, migration, or violent conflicts [24]. Globally, violence significantly affects young people’s lives, including conflicts, crime, and other forms of violence. According to the Institute for Economics and Peace, in 2016, violence or armed conflict in some way affected approximately 23 % of the global youth population, meaning about one in four young people [30]. In view of this situation, we must not forget that the way how young people passage from youth to adulthood and how we leverage global shifting demographics are critical aspects for the progress of humankind and sustainability [2]. In this sense, international community only will be able to achieve peace, security, justice, climate resilience, and sustainable development for all by engaging and working with young people, creating the conditions allowing them to progress and play an active role and supporting them in standing up for their rights [2].

Therefore, young people's empowerment, development, and engagement is an end in itself and a mean to build a better world [2].

2.3. Youth and the 2030 Agenda for Sustainable Development.

Within the call for action to change our world, the 2030 Agenda acknowledges young women and men are critical agents of change, playing an essential role in the realization of sustainable development [1]. The Agenda recognizes that humanity's future lies in our hands, particularly highlighting the younger generation's potential [1]. In this regard, as an action plan, the Agenda points out that young women and men will find in the SDGs a platform to channel their infinite capacities for activism to create a better world [1]. Indeed, many young people already contribute to the resilience of their communities, proposing innovative solutions, driving social progress and inspiring political change [2]. Therefore, young people constitute a fundamental asset that must be empowered to realize the 2030 Agenda's challenges [1, 2]. For this reason, the United Nations General Assembly launched in September 2018 the United Nations Youth Strategy [2], a system-wide effort operating as an umbrella framework to guide the Organization's work with and for young people. This strategy revolves around youth development and youth engagement as cross-cutting issues of the 2030 Agenda for achieving the SDGs [2]. The vision behind the strategy is to create **a world where young people's human rights are realized, that ensures every young person is empowered, and that recognizes young people's positive contributions as agents of change** [2]. For that purpose, the strategy aims to increase impact and expand the action to address the needs, build the agency, and advance young people's rights. Likewise, it also aims to ensure young people's engagement and participation in the implementation, review, and follow-up of the Agenda [2]. Moreover, the strategy works across three principal pillars: peace and security, human rights, and sustainable development. Altogether, these fundamental guidelines seek the United Nations system to advance on five interconnected key priority areas [2]. At this point, it is essential to highlight that the work developed within this thesis context adjusts to four of these priority areas, which become critical components of its framework. Table 2 shows the four areas of the United Nations Youth Strategy and corresponding work lines approached in this thesis.

Table 2. United Nations Youth Strategy's areas and work lines approached in this thesis.

Priority area	Work lines
1^a. Amplify youth voices for the promotion of a peaceful, just and sustainable world.	- Engage and collaborate with young people. - Expand meaningful youth participation in intergovernmental forums.
2^a. Support young people's greater access to quality education and health services.	- Support sexual and reproductive health and rights. - Develop quality education for young people relevant to students' lives and the social needs of their communities.
4^a. Protect and promote the rights of young people and support their civic and political engagement.	- Promote human rights education for youth, global citizenship and sustainable development education to foster a culture of peace and nonviolence among young people.
5^a. Support young people as catalysts for Peace and Security & Humanitarian Action.	- Recognize young people's contributions to peace, security, and violence prevention. - Promote young people's opportunities to develop counter-narratives to messages of violence.

These four areas interconnect with each other and with the SDGs previously described when discussing the 2030 Agenda goals, contributing to strengthening this thesis's framework's inner unity and cohesion. From a thematic viewpoint, four central principles shape the guiding thread joining those SDGs with the United Nations Youth Strategy's four priority areas. As such, Health connects the second priority area with SDG 3. Similarly, "education" joins the second and the fourth areas with SDG 4. Likewise, "participation" combines the first and fourth priorities with SDGs 16 and 17. Finally, "peace, security, and violence prevention" connect fourth and fifth areas with SDGs 5 and 16. At this point, the approach to violence is remarkably relevant in the work developed within this thesis. For this reason, a proper study of the framework must include some specific official papers relating youth with violence prevention, security and peace.

2.4. Youth's high potential to face violence, building peace and security.

The 2030 Agenda offers a powerful tool for holistic and integrated approaches in youth, peace and security, mainly through the SDG 16, which calls for promoting peaceful, just, and inclusive societies [24, 31]. In this sense, youth potential for the peace and security agenda's success is crucial to realizing the SDGs [32]. Two United Nations Security Council resolutions are particularly significant for shaping the Youth, Peace and Security agenda, which marks a shift in understanding young people's role for peace and security [33]. In December 2015, the adoption of Resolution 2250 on Youth, Peace, and Security was a ground-breaking normative shift that placed youth firmly on the international peace and security agenda [31]. The resolution recognized the **important role and positive contribution that young women and men's efforts play in the maintenance and promotion of peace and security, preventing and resolving**

conflict, countering violent extremism, and building peace [24, 32, 33]. Resolution 2250 has five main pillars for action, including supporting young people in preventing violence. Among other things, it urges to provide youth actors with adequate support to implement violence prevention activities and social cohesion and support quality education for peace that equips youth to engage constructively in civic structures and inclusive political processes [28]. Later, in June 2018, Resolution 2419 on Youth, Peace and Security [34] recognized the youth's role in promoting a culture of peace to discourage violence and all forms of discrimination. This second resolution also recognized the challenges youths face, including gender inequalities and difficulties that perpetuate discrimination and violence, putting young women at risk. In this sense, Resolution 2419 reaffirmed the commitment to the empowerment of women and gender equality [34]. On the other hand, in 2018 was published the document *The Missing Peace: Independent Progress Study on Youth, Peace and Security* [24], mandated by Resolution 2250 [28], the first comprehensive study documenting peacebuilding and violence prevention activities by young people globally. It significantly contributed to understanding the multiple ways young people work for peace and security [24]. The study revealed the active engagement of young people within their communities through community service and civic participation, advocating their communities' needs or cooperating with formal institutions [24]. Another important point from this study within this thesis context is it showed the young women and men active roles in organizing and mobilizing their peers at national, regional, and global levels to overcome different forms of violence [24]. The document highlights young people's work creatively seeking ways to prevent violence across the globe, both in conflict-affected societies and those enjoying peace. That is why the paper calls upon recognizing young people as “the missing peace”, pointing out that their work implies a tremendous peace and security dividend for their societies [24]. Another important study is “We are here: An Integrated Approach to Youth-Inclusive Peace Processes” [25], published in 2019 as an initiative studying where and how young people have participated in peacebuilding processes during the last two decades using diverse and innovative approaches. At this point, when considering the mentioned resolutions and studies, we must take in mind that much of the literature on youth participation in peacebuilding to date focus on young people's agency in conflict and post-conflict peacebuilding settings [35, 36]. Consequently, the wider preventive role of youth in building and sustaining peace has often been undervalued or even invisible [24]. Work by young people on sustaining peace addresses a broad spectrum of conflicts and forms of violence, including, among others, sexual and gender-based violence, criminal violence, ethnic and communal violence, violent extremism, conflict over natural resources, or violent uprisings [24]. In this sense, the study “We are here” points out that youth have a broader understanding of

peacebuilding, focusing on the need to address different types of violence, discrimination, and injustice affecting their communities, such as domestic violence, early marriage, or gender-based violence. They emphasize that the Youth, Peace, and Security agenda should not focus only on specific forms of violence like violent extremism or terrorism, excluding the different realities facing young people in their countries or regions [24]. These are fundamental assumptions in this thesis, which compiles numerous creative efforts developed by young people for facing a specific form of sexual violence. Peace and security are vital issues of universal concern in all countries, not only those affected by violent conflicts. The paper “We are here” shows that the ideas of peace and security have various dimensions for young people, beyond just the absence of violence or the end of violent conflict. These concepts involve values and aspirations, belonging, dignity, and living with hope and without fear [24]. The study observed that for young people achieving this situation requires simultaneous addressing of both the underlying causes of injustice underpinning violence and triggering it (positive peace) and violence’s symptoms and consequences (negative peace) [24]. As will be seen, this thesis shares this double view as an essential component of its framework. In this sense, identifying violence as a disease, the work developed in this thesis addresses both causes and symptoms of a specific form of sexual violence.

2.5. Education: a promising way to nonviolence.

At this point, to go on weaving this thesis’s framework, we must pay special attention to one of the most striking issues emerging from the consultations about the Youth, Peace and Security in the paper “We are here”. It is the indispensable role that education plays on building peace and prevent violence. Young people expressed their hopes about education's role to generate transformative endeavors focused on supporting building peace and social cohesion, devising it as a pathway to achieve well-being and produce broader social contributions [24]. The study shows some illustrative examples of the young people’s optimistic view of the potential of civic engagement activities and education: *“these seem to fulfill a common desire among youth – the desire to do something positive, meaningful and impactful”* [24]. This hopeful thinking about the high potential of education to face violence and building peace encompasses formal and informal learning, from primary to secondary and tertiary levels. This latter level's inherent contribution, tertiary level education or higher education, is precisely the next component of this thesis's framework.

3. World Declaration on Higher Education for the XXI Century: Vision and Action.

Modern societies have become increasingly knowledge-based, so higher learning and research are currently essential components of cultural, socio-economic, and environmentally sustainable development [3]. Consequently, **higher education now plays a crucial role for individuals, communities, and nations.** It includes studies and training at the post-secondary level, provided by universities or other educational establishments previously approved as higher education institutions by competent authorities. In this sense, the 2030 Agenda's global call for embarking on the road to change our world also includes the scientific and academic community [1]. Indeed, as an action plan, the Agenda acknowledges the essential role of collaborative close work between academia, governments, and other public institutions [1]. A well-educated workforce with the knowledge and skills needed for full participation in society and for doing productive, fulfilling work is a necessary asset for any country. In this sense, education is one development priority specifically acknowledged by SDG 4 [1]. The Agenda envisages a world with universal literacy and equitable access to quality education. Accordingly, one of the Agenda's commitments consists of providing quality education at all levels, including, of course, the tertiary level or higher education [1]. Nevertheless, this notable significance of higher education is nothing new, as neither the need for its increased engagement in sustainable development, a strong demand already formulated earlier by previous official papers before the 2030 Agenda. In this line, one essential component of this thesis's framework is the World Declaration on Higher Education for the Twenty-first Century: Vision and Action [3].

3.1. A historic moment for higher education.

In October 1998, on the very eve of the third millennium, the first-ever World Conference on Higher Education took place at the United Nations Educational, Scientific and Cultural Organization (UNESCO) headquarters in Paris, France. It was the largest international gathering on higher education held in the past century, joining more than 4,000 participants from 182 states. Gathered people included teachers, researchers, students, responsible for education and higher education, representatives of organizations from various sectors of society, the world of work and business, financial organizations, etc. The immense interest observed expresses a clear realization of higher education's growing importance for humankind's destiny. Likewise, an unprecedented demand affecting higher education contributed to this significant mobilization around the World Conference: the need for a meaningful diversification in higher education and increased awareness of its vital importance for building the future [3]. On the eve of the new millennium, higher education confronted formidable challenges, necessitating the

most radical change and renewal it has ever been required to undertake. This transformation was necessary for our society to transcend the undergoing profound crisis of values and mere economic considerations and incorporate deeper morality and spirituality dimensions [3]. Concretely, the final report's foreword of the World Conference points out the acute growing of inequalities between countries due to the absolute power of money and the pursuit of economic profit at all costs, brushing aside ethical values and all sense of human solidarity [3]. Moreover, the document also highlights violence proliferation in various and often-unknown forms, threatening civil and international peace [3]. At this point, this particular focus on violence is useful for weaving the guiding thread of this thesis's framework. In this sense, this consideration of violence adjusts to the previously commented youth view about higher education as a valuable asset supporting building peace and social cohesion. Considering the severe background described by the final report's foreword, higher education was directly challenged to strengthening its role in defence of peace as a human value and for the respect and protection of all human rights and fundamental freedoms [3]. For facing this vital challenge, the Conference showed its confidence in higher education's ability to change itself and induce change and progress in society. Likewise, it is worth mentioning the broad mobilization preceding the Conference, shaping an even more broad process for renewing and transforming higher education in the direction that the world's history and development required. In this sense, the Conference adds to five previous assemblies in Havana [37], Dakar [38], Tokyo [39], Palermo [40], and Beirut [41] between 1996 and 1998 and reflections from teachers, staff, and students of universities and other institutions of higher education. Moreover, two consultation stages preceded the Conference, developing draft declarations and action plans. The consultation concluded that higher education must contribute to building a peace based on equity, justice, solidarity, and liberty in our complex and rapidly changing global society.

3.2. A renewed higher education for building a better world.

The World Conference on Higher Education gathered in Paris in 1998 provided the international community with a powerful instrument to facilitate higher education reform: the document entitled "World Declaration on Higher Education for the Twenty-first Century: Vision and Action" [3]. This Declaration set the way to renewal higher education and prepare it for the tasks awaiting in the twenty-first century, to stride out towards a better future, towards a more just and peaceful world. **The Conference established a renewed view of the mission of higher education, beyond its traditional functions of teaching, training, research and study, all of which remained fundamental. New identified purposes involve an increased strengthening of higher education responsibilities with whole personal development, a work focused on**

providing solutions to community problems, and a particular emphasis on promoting a culture of peace and nonviolence [3]. Regarding personal development, the World Declaration highlights the imperative of training responsible, informed citizens committed to working for building a better society in the future [3]. Likewise, the Declaration also calls attention to higher education's duty to seek solutions for the major community problems at both the local, regional, as global spheres, such as violence, poverty, worsening inequalities, or environmental degradation [3]. The Declaration points out that the search for quality in higher education must be linked to relevance and solutions for community problems. Research plays an essential role to fulfil this responsibility. In this line, the Declaration emphasises the need for enhancing research through approaches reinforcing interdisciplinarity, transdisciplinarity and innovation [3]. At this point, the work developed in this thesis fully aligns with this need. As will be seen, it generates an innovative response to the 2030 Agenda's call for action.

3.3. Higher education promoting a culture of peace and nonviolence.

Promoting a culture of peace and nonviolence is another vital purpose of higher education remarkably emphasized throughout the World Declaration, which highlights that ***“on the threshold of a new millennium, it is the duty of higher education to ensure that the values and the ideals of a culture of peace prevail”*** [3]. This thesis actively adjusts to such a prominent and memorable statement, which becomes a central pillar of its framework. Some essential tasks for achieving the higher education's cultural and ethical mission involve fostering the universal respect of human rights, solidarity, and equality of rights between women and men [3]. Nevertheless, in the same vein, the Conference also acknowledged another significant challenge that higher education must meet: having faith in youth and, in particular, in students. **The Conference's final report emphasizes as greatest importance that students should be among the most active and the most committed agents to promote a culture of peace and nonviolence** [3]. The Agenda's call to action involves young people as essential stakeholders for building a better world [1]. To optimize youth involvement in such a transformative process, the own United Nations developed a specific strategy [2], including as a priority area supporting young people as catalysts for peace and security. Concurrently, this historical responsibility recently entrusted to youth adds to the World Declaration on Higher Education [3] at the beginning of the new millennium, encouraging young people and, in particular, students to promote a culture of peace and nonviolence in the twenty-one century [3].

3.4. World Declaration elements adopted in this thesis.

Down below, three statements from the Declaration’s preamble that shape this thesis’s framework, and specific content selected from seven of the Declaration’s articles particularly aligned with the developed work (Table 3).

Three statements from the Declaration aligned with this thesis:

- 1^o. Education is a vital pillar of sustainable development, human rights, peace and democracy.
- 2^o. On the threshold of a new millennium, higher education must ensure that values and ideals of a culture of peace prevail and the mobilization of the intellectual community to that end.
- 3^o. The development of higher education require the strong involvement of students.

Table 3. World Higher Education Declaration’s articles that align with this thesis.

Article	Paragraphs
1. Mission to educate, to train and to undertake research.	b) Educate for active participation in society, the consolidation of human rights, sustainable development and peace.
2. Ethical role, autonomy, responsibility and anticipatory function.	c) Analysis of social trends providing a focus for prevention.
5. Advancing knowledge through research.	a) Promotion interdisciplinarity and transdisciplinarity in programmes orientations on social needs. c) Enhance research within the framework of international development policies.
6. Long-term orientation based on relevance.	b) Reinforce role of service to society, particularly activities aimed at eradicating violence through an interdisciplinary and transdisciplinary approach to problems analysis. d) The creation of a non-violent society consisting of individuals inspired by love for humanity and guided by wisdom.
9. Innovative educational approaches.	b) Education of motivated citizens who can analyse problems of society and look for solutions.
15. Sharing knowledge.	b) International co-operation based on solidarity with the least developed countries.

4. The Seville Statement on Violence.

When focusing on providing violence solutions, it is crucial to pay attention to what the Agenda says about violence and peace. Its commitment in this line is absolute right at the beginning. The Agenda’s preamble declares the paper as a plan for action that seeks to strengthen universal peace [1]. A little further, on the preamble again, the Agenda acknowledges Peace as one of the five areas of critical importance for humanity and the planet, in which SDGs and targets will

stimulate action over the next fifteen years, until 2030 [1]. The global community expresses its firm determination to work on this critical action area to foster peaceful, just, and inclusive societies free from fear and violence [1]. In fact, the third point within the declaration states one more time the strong will to build this much-desired kind of society and protect human rights. As if this were not enough, the Agenda acknowledges the mutual dependency between sustainable development and peace, highlighting that “*there can be no sustainable development without peace and no peace without sustainable development*” [1]. As an action plan seeking sustainability, this interdependence unavoidably makes peace an essential element for the Agenda. Accordingly, the declaration envisages a world free of fear and violence for 2030, a world of universal respect for human rights, and in which every child grows up free from violence [1]. As will be seen, based on an optimistic view, the developed work throughout this thesis strongly aligns with such a desired vision of a nonviolent future. In this sense, this framework legitimizes, justifies, and recognizes as necessary to entrust youth the responsibility for providing violence solutions, particularly working from the higher education context. Nevertheless, **the realization of this hopeful vision about the building process of a world free of violence requires a significant previous reasoning, simple but profound: we can provide solutions to violence as long as violence is solvable.**

4.1. The human nature.

Throughout history, some people have claimed that violence and war cannot be ended because they are part of natural human biology, arguing that humanity is inherently violent or selfish [4]. In this line, since the advent of modern science, the misuse of scientific data and theories has been used to justify violence and war. Misconceptions arising from the careless use of scientific concepts include confusion between the survival of the fittest and survival of the strongest or between the violence observable in animals and that observed in humans. Using scientific misconceptions, some have tried to defend slavery and domination by race claiming that these behaviors are part of our biology [4]. Likewise, in recent years, other people have also tried to defend this claim by using modern genetics. Similarly, the theory of evolution has been used to justify war, genocide, colonialism, and suppression of the weak [4]. Certainly, these myths about the inherently violent nature of human beings confront the desired vision of a world free of violence, envisaged by the 2030 Agenda and firmly shared by this thesis. However, just as misusing scientific theories for justifying violence and war is nothing new, neither is the desire to build a nonviolent future. As the own Agenda reminds us, seventy years before its adoption, an earlier generation of world leaders came together, recovering from the ashes of war and division, to fashion the values of peace, dialogue, and international cooperation and embody

them on the Charter of the United Nations [1]. Following this spirit, after World War II, UNESCO was one of the United Nations' bodies created to ensure that war would not occur again. At this point, a famous statement from UNESCO's constitution, adopted in November 1945, will help us to deepen better on human nature and its relation with violence. It states, ***“Since wars begin in the minds of men and women, it is in the minds of men and women that the defences of peace must be constructed”*** [42].

4.2 Preparing the ground for the constructing of peace.

On May 1986, the Spanish National Commission for UNESCO assembled in Seville, Spain, an international team of scientists from multiple countries, from North and South, East and West, to study the problem of war and violence [4]. Subsequently, on November 1989, at its twenty-fifth session, the UNESCO General Conference adopted and disseminated the document entitled “The Seville Statement on Violence. Preparing the ground for the constructing of peace” [4]. The previously compiled maxim from UNESCO's constitution explains the fundamental purpose of the gather in Seville. It consisted of constructing a new vision about war and violence in the minds of men and women. In this sense, the document states that the construction of peace begins in our minds as a vision of something new for the future. It highlights that this process should respect human rights and freedoms, understanding, tolerance, and friendship among all nations, racial, and religious groups. Based on the need for ensuring the respect of these values, the Statement assumes the responsibility for clearing away certain old myths that stand in the way of building the new vision [4]. To ensure the building of a renewed vision of peace in men's and women's minds, the Statement claims that it “is necessary to clear the land before starting to build a house” [4]. This renewal process is an essential element to create the confidence that the vision of a peaceful world can be realized. Accordingly, a statement on violence becomes necessary to counteract certain widely held myths that stand in the way of constructing peace, claiming that war and violence are intrinsic to human nature and therefore inevitable [4]. Consequently, the meeting challenged various alleged biological findings used to justify violence and war over the underlying idea that the open, considered rejection of these misstatements would contribute significantly to reduce the atmosphere of pessimism related to violence and war in our time. The Statement consists of five propositions, each one challenging a misstatement used to justify war and violence. It is crucial to highlight that gathered specialists tried to base their conclusions on the latest scientific evidence, stating them in such a way that they do not claim more truth than the data can support. Furthermore, numerous scientific and professional organizations worldwide endorsed

and published the Statement, including ethologists, physiologists, anthropologists, sociologists, political scientists, psychiatrists, and psychologists [4].

4.3. Elements adopted in this thesis from the Seville Statement on Violence.

Below, specific contents selected from the Seville Statement on Violence contributing to shaping this thesis's framework.

- Proposition nº 1. It is scientifically incorrect to say that war cannot end because animals make war and people are like animals.
- Proposition nº 2. It is scientifically incorrect to say that war cannot end because it is part of human nature.
- Proposition nº 3. It is scientifically incorrect to say that violence cannot end because violent people and animals live better and have more children.
- Proposition nº 4. It is scientifically incorrect to say that our brain makes us violent.
- Proposition nº 5. It is scientifically incorrect to say that war happens by instinct.

4.4. The conclusion from the Seville Statement on Violence.

The Seville Statement on Violence concluded our human biology does not condemn humankind to war and violence. The document highlights that it is crucial to be aware of that evidence because the belief that we can become free of war and violence makes a big difference in achieving that purpose. Consequently, we can be free of pessimism and empowered to undertake the transformative tasks needed to end war and violence, to invent peace in our time. The Statement encourages all people to work together to achieve this possibility. In this constructive thinking line, the Statement finishes with a focus centered on young people, encouraging the youth community to take action in creating a vision of peace for the future.

Nonviolence Principles

The framework build in previous section provide us with a hopeful view about the genuine possibility of pulling together for building a better world for future generations, a sustainable world, free of violence and founded on a culture of peace and nonviolence. Sharing such a rightful hope is the essential basis that founds the work developed throughout this thesis. Contributing efficiently to realizing such a desired, long-awaited world requires paying particular attention, again, to the famous statement from UNESCO's constitution, "*Wars begin in the minds of men and women*" [42]. A particularly logical conclusion emerges from UNESCO's statement: we must start by working on building an adequate human mindset as a requirement to be able to develop good work and obtaining wanted results. UNESCO's statement points out where we must begin working. This claim makes us realize that humankind's mind, the exact location where the problem begins, is the primordial field of work that we need to concentrate our efforts on to achieve the world we aspire. This thesis assumes such a notably remarked responsibility. That is precisely the fundamental purpose of this section, which starts by cultivating the human mindset, the crop field where violence germinates. Under the umbrella of UNESCO's statement, we observe that our beliefs will condition our future significantly. Consequently, our beliefs will condition the achievement of our vision of a better world. This observation reveals that if we really want to achieve a world free of violence, we certainly must strengthen our beliefs about peace and nonviolence. Following this logic, this section profoundly reflects on the concept of nonviolence in an attempt to facilitate its comprehension and assimilation. Subsequently to the initial reflection exercise targeting comprehension and assimilation of nonviolence basics, we adopt a more practical perspective, focusing on the applicability of learned concepts. For this purpose, we define a three-phase, reproducible, and easily implementable schematic process. Extending our efforts for strengthening this thesis's utility for achieving the world we want, we go on with an analysis about the presence of the integrative love force in the 2030 Agenda, followed by the study of Christian thinking in the light of the nonviolence approach. On the other hand, after this practical view, we discuss the potential implications of applying this three-phase process within higher education's highly creative context. This possibility becomes an exciting hope to achieve the world we aspire, because of higher education's capacity for providing constructive solutions to the challenges acknowledged by the 2030 Agenda. Therefore, this section provides foundational principles for setting into motion, from higher education, a nonviolent movement aligned with the Agenda to encourage sustainable development.

1. A reflection exercise about the violence phenomenon.

Below, a dialogue structured in eleven essential discussion points helps us comprehend and assimilate nonviolence to use it later. We begin thinking on the word violence from an etymological viewpoint. Then, such a reflection exercise uses the book entitled “The search for a nonviolent future” [43], by Michael Nagler, as a guiding framework. In this way, the section combines Nagler’s viewpoint with reflections by this thesis’s author about peace and nonviolence.

1.1. Thinking on violence from an etymological viewpoint.

The Seville Statement on Violence helped us better comprehend what violence is and some of its main features. However, since this thesis aims to provide efficient violence solutions, it is necessary to start with a more in-depth understanding of it. For that purpose, the etymological study of the word violence is a good beginning. It provides us with a view of its original meaning rise above metaphorical uses added throughout generations. In this sense, the English word violence dates from the late thirteenth century, meaning, “*The physical force used to inflict injury or damage*” [44]. The name came from the Anglo-French and the Old French *violence*, which arose from the Latin forms *violentia* used for referring to “*vehemence or impetuosity*”, and *violentus*, naming “*vehement or forcible*” [44]. Both terms link to *violare*, consisting of “*treat with violence, dishonour, outrage*” [44]. According to Bowman, in the book “*Anthropology of Violence and Conflict*” [45], the English term “*violate*” implicitly holds, “*The concept of an integral space broken into and, through that breaking, desecrated*”. This author explains the meaning of “*do violence to*” as “*to desecrate, profane, dishonour, or defile*”, “*to treat (a person) roughly*”, or as “*to assail or abuse*” [46]. As will be seen later, this thesis focuses on an earliest and innate nature of “*violence*” revolving around assaulting sexual freedom [47, 48] as a regrettable phenomenon that profanes our dignity and integrity as human beings.

1.2. Violence: a human phenomenon.

Adjusting to the Seville Statement, Nagler means violence as a human phenomenon, one aspect that shows the most negative side of ourselves [49]. He remarks the need to consider that animals' predatory behavior is not violence, such as we define and understand it. In this sense, giving as an example the potential fateful relationship between a lion and a lamb, Nagler claims that the first animal can be very hard on the second one. However, even though the lion kills the lamb, it only does that, but not “*dishonour, outrage, or violate*” the lamb, as the violence’s meaning involves [50]. The author insists that despite the wide range of emotions animals have, there is no bond between them that torn asunder when the predatory attacks. They compete

with and prey on each other in a balanced, ordered and sustainable way that could go on indefinitely [50].

1.3. The unsustainability of violence.

The balance and sustainability observed for competition and predation between animals do not operate for us, the human beings [43]. On the contrary, something goes shockingly wrong when we prey on each other. At this point, we cannot ignore this appearance of the sustainability concept in the heart of a thesis strongly aligned with the 2030 Agenda for Sustainable Development. Thinking on violence, and based on Nagler's claim about the absence of sustainability to humans' predatory relationship, we must remind the mutual interdependence between sustainable development and peace. The own 2030 Agenda acknowledges, "***there can be no sustainable development without peace and peace without sustainable development***" [1]. Nagler claims that in this sense of violating the order of things, only humans can be violent. Therefore, violence is an unsustainable phenomenon that, as the cited author highlights, "*has led to the devastation of whole societies*" [50].

1.4. Reasoning about the depth of violence and the shared damage.

Another essential feature of violence is that it cuts both ways [50]. In this regard, both the violated person as the violent one take part equally in such a fabric of life. Consequently, the two parties involved in that violent experience feel the stroke because both of them take part in the same net [50]. In fact, as Nagler claims, "*in a more remote sense, everyone in the web feels the tear*" [50]. On the other hand, a sequence of three questions arising from the previous observation leads us to reason about another highly relevant feature characterizing violence. First, since violence tears the fabric of life, including also those people inflicting violence, when does this tear start? When does exactly violence initiate its destructive effect? A logical response to this question is that violence initiates the destructive effect that characterizes it from the exact moment it begins to exist. Given this answer, a second question arises immediately: when does violence begin to exist? The answer to this second question is also logical, and it should not surprise us: violence begins to exist from the precise moment when we, the human beings, conceive it. This observation almost answers the three and last question of our reasoning: where is violence conceived? Since, as previously observed, violence is a human phenomenon [3, 50], the conception of such a concept occurs in the humankind mind [43]. This last assertion integrates the famous phrase previously commented from UNESCO's constitution, "*Wars begin in the minds of men and women*" [43]. Similarly, Nagler claims, "*the real violence lies not in the act but in the very intention to injure*". Another remarkable comment of the same author states

that who feeds the intention to harm someone suffers from the very intention, independently of the consequences of any possible action [50]. Nagler also points out that an excellent way to appreciate this principle is the extensive medical evidence about harmful effects on health produced by hate and the difficulty to forgive [50-52].

1.5. A culture of violence.

As Nagler points out, although violence stems from the human mind, not all violence we make or take part in necessarily occurs with our conscious will. In this sense, we, human beings, also commit a kind of violence without being quite aware of it. This element characterizes our modern society, where a culture of violence seems to dominate. Violence arises not from any known hostility but through an unconscious or passive willingness to take advantage of others [50]. At this point, the “structural violence” lies hidden behind the institutions of virtually all known societies, as Johan Galtung introduced [53]. In this way, as would be expected, a culture characterized by violence permeates structures conducting social processes, including institutions, conditioning progress, and development. Nagler describes this widespread reality as the thin soil of our bottom-line violence-prone civilization, where human meaning has disappeared, and human bonds are often dispersed like dust [54]. This claim about the lack of human solidarity reminds us of an observation of the World Conference on Higher Education [3]. The Conference's final report paid attention to the acute growing of inequalities between countries due to the absolute power of money and the pursuit of economic profit at all costs, brushing aside ethical values and all sense of human solidarity [3]. Even more, the Conference highlighted violence proliferation in various and often-unknown forms, threatening civil and international peace [3].

On the other hand, when considering the social perception of violence, it is critical to pay attention to the prevailing informative and educative message about it existing today in widespread information channels. In this sense, **a violence-focused spotlight permeates the day-to-day of mass media and multiple entertainment products, contributing to shaping our cultural background and perception of reality** [50]. There is a significant difference between this hegemonic discourse and the World Declaration words, which attracts attention to the violence problem and simultaneously encourages renewal efforts for building a better world. However, mere informative and entertainment roles prevail in mass media day-to-day [50]. The former acknowledges a tragic reality at the same time that opens a path of hope. Nevertheless, the latter opens mainly a window facilitating a social view concentrated on everyday violence, focused on the most negative side of ourselves [50]. In this sense, it is reasonable to think that

we could expect increased negativity from the progressive daily assimilation of our most negative side. Pessimism is an evident consequence of such a view excessively focussed on our destructivity. Even worse, this view can lead us to acclimatize ourselves to violence as an unavoidable product of our nature as human beings.

1.6. An alternative view for a culture of violence.

As previously described when we studied the Seville Declaration on Violence, scientific evidence disassembled the theories that have tried to justify violence and war as inescapable and inherent human nature aspects [4]. Claims from the Seville Statement become a fundamental point for shaping our perceptions about violence. That is particularly important since **what we believe, what we hold deep in our minds, will take control of what we will do, our ways of dealing with violence, our participation or not in the violence phenomenon**. Far from a pessimistic view focussed on our most negative side, if we hold hope about our constructive potential, we will have a vital spark for launching hopeful actions. According to Nagler, there is much bad stuff in the world; by seeing them out of proportion, we expect things to be that way, and when we have negative expectations, life fulfills them. Negative expectations mask our positive potentials, which we need if we're going to resolve problems like violence [49]. In this sense, the framework underpinning this thesis provides a combined look, focusing on both the challenges our global community faces and the hopeful human potential for overcoming them. Thus, this thesis's frame makes visible the existence of hope for overcoming the violence phenomenon. This is a fundamental starting point, since we have sustained that what we hold deep in our minds about violence will determine our participation or not in the violence phenomenon. Consequently, what we will believe will be crucial for achieving sustainable development. In fact, the own 2030 Agenda itself recognizes "*there can be no sustainable development without peace*" [1]. We are at a historical moment of global commitment with a common Agenda seeking sustainable development, which recognizes the need for peace as an essential element for achieving sustainability. Our generation faces a magnificent challenge to overcoming violence. Nagler claims that what characterizes our time is not that there is so much violence but that we are challenged, maybe as never before, to deal with it [49].

1.7. Trying to avoiding violence.

One definition of violence provided by Johan Galtung is the best way to go on this discussion. He said, "*Violence is an avoidable insult to human needs*" [55]. Nagler points out that the word "avoidable" suggests that life could be lived without these insults and that violence could be avoided in an ideal world [50]. He goes on acknowledging that **accidents happen, conflict is**

unavoidable, and disputes will regularly occur. However, none of these inevitably cause violence. Disputes and conflicts can be creatively resolved without violence, which becomes an unnecessary evil [50]. At this point, we must ask ourselves, if violence is avoidable, how can we avoid it? Nagler outlines different models for craft a life of security in a world where a culture of violence seems to dominate. One of them, the most commonly used, is the moral model, according to which humankind tends to think of violence as a crime or a sin, something violating the laws [50]. The cited author sustains that the moral model's failures are undeniable in the area of criminal justice, claiming that our approach to crime puts more and more people in prison with minor denting of the crime rate [50]. Another approach that is becoming more common is the medical model, which compares violence with a disease and peace with a kind of health. It does not visualize the perpetrator of violence as a criminal, but a patient, that is, a person in trouble. According to Nagler, this option is probably a much more effective way to think about violence, claiming that thinking of it as a disease puts the focus on prevention [50]. However, beyond these examples, the author highlights the failure of almost all the approaches to violence. In essence, the key point consists of since violence goes on the increase, without achieving proper measures for making violence a progressively smaller part of our life yet, it is not unreasonable to presume that our way of thinking about the problem is not entirely effective. Thinking about this situation, Nagler claims that the main reason for this is that we usually use the logic of violence in our attempts to control it [50]. Some recently popularized concepts can become helpful in visualizing this approach. For example, the "war on drugs", the "war on crime", or the "war on terrorism". We can observe the underlying violent component to these concepts and, at the same time, verify that they resulted in costly and injuring failures. Consequently, Nagler concludes that **we need a different logic, a distinct window of reference for thinking about the problem** [50].

1.8. The educational model.

Beyond the consideration of violence as a sin or like a disease, the educational model opens an additional window of reference, considering violence as a kind of ignorance [50]. Nevertheless, ignorance of what? A two-part thought process will help us to understand what we mean by ignorance properly. Firstly, this concept of ignorance refers to the lack of wisdom to understand that we all take part equally in life's fabric [50]. It involves an **incomprehension about the existence of a subtle sense of connectedness between human beings or any part of the biosphere, the life. In short, the lack of understanding about the fact that we are one, despite our differences and physical separateness** [50]. From the difficulty to understand that first essential point, we can easily deduce the second component of the definition of ignorance

we are studying. In this sense, if one person ignores or is not aware that he or she and the rest of the people in the world are one, that person will neither comprehend that the violence he or she can inflict on another person will injure him or herself. The incomprehension of this second point will prevent that person from being dissuaded from inflicting violence to another [50]. Therefore, the ignorance that we refer to involves incomprehension about the fact that we all shape the same web and, consequently, if I tear some point of this web, that damage will also affect me. Once we discern the meaning of violence under the educational model, to overcome violence, we must identify how to overcome the kind of ignorance previously defined, or in other words, how to make people aware that they are damaging themselves along with their victims. It is a crucial step for dealing with the violence phenomenon. It is the key to an entirely way to deal with violence. It is the key to the new world we are looking for [50]. How we do this?

1.9. The love force.

In the context of the discussion about the educational model and considering the corresponding meaning of violence as ignorance, Nagler reminds Swami Ramdas's claim, "*By the power of love, you can remove ignorance*" [56]. The author highlights the words of the Indian mystic, sustaining that thinking of violence as ignorance helps to see wisdom and love as the solution to violence [50]. We can clearly perceive here a process with a logical sequence. In this sense, when one person overcomes the previously explained concept of violence and comprehends the subtle sense of connectedness between human beings, he or she can experience a power or a force driving to help, cooperate or care for others. Nagler claims that *love* seems to be a reasonable term for this driving force, calling it as **the love force** [50]. The use of this word, love, does not refer to the emotion but **a self-sacrificing devotion that can become as strong as to overcome the fear of losing the own life** [50]. Nevertheless, the mentioned process operates in two directions. Love is not only the emergent force resulting from overcoming the described ignorance, but it is also the way for that purpose. Answering the pending question, love is the way to make people inflicting violence aware that they are damaging themselves along with their victims [50]. This love force boosts solidarity and constructive actions, builds new bridges, and encourages empathy between human beings. In short, we are talking about "*moving the heart*", as Mahatma Gandhi said [50]. Similarly, Martin Luther King expressed it by talking about building a "*loving community*" [50]. This love force is in the human consciousness. When it emerges, it becomes a powerful, expansive wave that reaches everybody, both people inflicting direct or passive violence as well as social and institutional structures.

1.10. Nonviolence.

At this point, we realized that violence already hurts and destroys before even its materialization into concrete violent physical events. In fact, it destroys even if it never becomes materialized into any tangible event. Violence exerts its destructive effect on life's fabric by the mere fact of existing in someone's heart. For that reason, when the love force really emerges in someone, it necessarily involves that this person has not the slightest intention of hurt others. It is about a wholly integrative power [50]. At this point of the discussion, we have reached the perfect time for introducing the term nonviolence. Nagler claims, "*Violence is disintegrative, while nonviolence is integrative power*" [50]. In this way, intention is the key issue when talking about nonviolence. Nagler clearly mentions that ***nonviolence is, first, a question of mind and then an active expression of this state of mind*** [50].

1.11. Ahimsa.

The English word nonviolence first appeared less than one hundred years ago, in 1923, as a literal translation of the Sanskrit term ahimsa, which results from the addition of the negation prefix *a-* to *himsa*, the Sanskrit word for violence [50]. In turn, *himsa* comes from the root *han*, a desiderative which means "the intent or desire to strike or kill". In this way, the negation prefix allows expressing "the absence of such desire or intention". Regarding the concept's original meaning, Nagler points out that ahimsa is not a negative term, as nonviolence is. On the contrary, ahimsa suggests something profoundly positive but which is not possible to name directly [40]. The author clarifies that ideas like love or other primordial concepts cannot be expressed entirely using human language, so abstract nouns in Sanskrit often name a positive quality indirectly by negating its opposite [50]. Consequently, Nagler claims that the English word nonviolence does not entirely convey the meaning of the Sanskrit term *ahimsa*. In parallel, it is interesting to observe that the famous UNESCO's constitution statement "*War begins in the minds of men and women*" [42] aligns with the intentional and desiderative sense of *ahimsa*.

2. A three-phase process for applying nonviolence.

Once we have comprehended and assimilated nonviolence basics, the time comes to put it into practice. Nevertheless, it may not be an easy task in the beginning, mainly because of the ambiance of violence currently permeating our culture. For this reason, to facilitate the implementation of this integrative power, this thesis establishes a more practical perspective. Aiming to facilitate applying the previously described concepts, below we define a new three-phase, reproducible, and schematic process for implementing nonviolence. Figure 2 illustrates in an easily understandable way this three-phase process for applying nonviolence.

Such a process is analogous to the functioning of an engine able to generate movement when connected to a power supply. Just like the nonviolence process, the engine also operates in three steps, placed in the left-to-right order, beginning at the red colour and finishing at the green one.

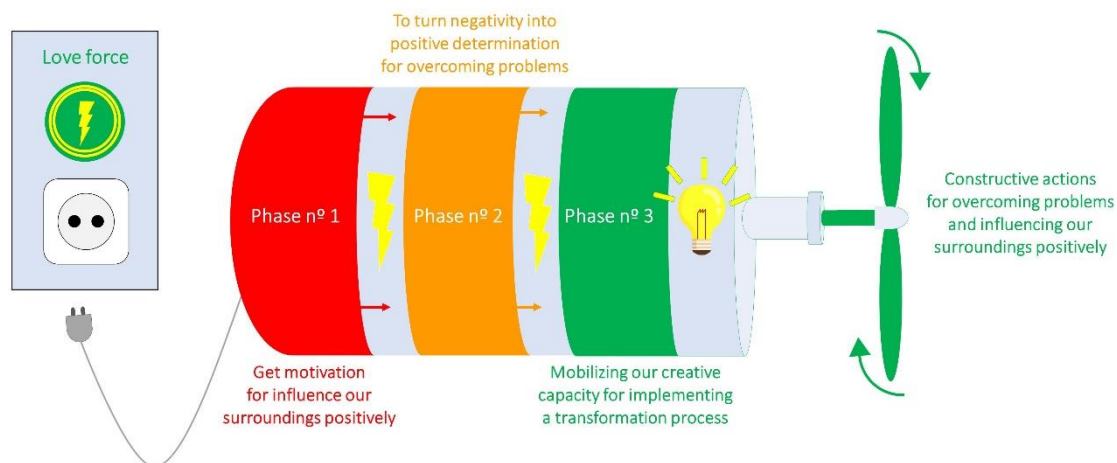


Figure 2. Three-phase process for applying nonviolence. The two lightning flashes indicate that these two first phases are necessary for tuning the engine before starting running.

Phase n° 1. By the love force, we overcome ignorance and get the motivation to influence our surroundings positively. The first phase involves the previously described process operating in two directions between the concept of the ignorance and the love force. On the one hand, the interrelation between both concepts involve connectedness between human beings boosts the love force. On the other hand, the love force is the emergent power resulting from overcoming ignorance and the comprehension of the connectedness between human beings, and the way for achieving that purpose. In other words, **the love force is the way to make people aware that they are damaging not only their victims but also themselves when inflicting violence** [50]. The love force allows people around us to sense that they and we are one and not separate parts. The love force is powerful energy by which we can visualize that human nature contains the solution to violence phenomenon [50]. This force transmits us the energy that motivates us to act and confront the violence problem and whatever injustice situation it involves. As shown in Figure 2 (left red-colour fragment), the love force's energy allows us to get the motivation to influence our surroundings positively. At this point, it emerges a crucial question: how do we channelize this high potential for positive influencing? Answering this question involves the subsequent two phases.

Phase nº 2. We choose to allow the love force to turn negativity into positive determination for overcoming problems. At this second step, the orange coloured central part (Figure 2) illustrates that positive motivation. The love force emerging from inside ourselves has a high potential to promote actions helping and taking care of both other human beings as well as the entire biosphere, influencing around us positively. Therefore, the love force becomes a driving force leading us to act constructively with other individuals and groups within our environment. In this way, we can appreciate that this guiding energy starts a building process. Now we come to a critical point: we are those who choose the way forward and make or not the decision of using this integrative power. When we choose the peaceful way, we trigger a transformative, positive world process, beginning in the deepest part of our heart [50]. When this happens, we ourselves, as integrative of life's fabric, are the first part of the world that starts improving. That way transforms something inside us. We allow the love force to turn hate, resentment, panic, fear, anguish, frustration, or other negative feelings inside us, into constructive and positive determination [50]. Likewise, when one individual or a group suffers from violence or injustice or even if witnesses it, if they choose to allow the love force to flow, the negativity associated with the tragic events will be stopped, avoiding a negative multiplying effect in his/her surrounding, person as well as legal and health problems. Undoubtedly, this choice does not imply passivity regarding the existing problem, quite the contrary. The love force will divert negativity into a constructive and positive determination focusing on overcoming the problem. Nagler claims that **psychic tension is neither good nor bad and that it can be thought of as raw energy that becomes helpful or destructive when it flows through cooperative or aggressive channels, respectively** [49].

Phase 3. We use our creative capacity for implementing a transformation process consisting of constructive, integrative actions for overcoming problems and influencing our surroundings positively. For contextualizing the third phase, we must remind ourselves that violence is avoidable and that conflicts can be creatively resolved without violence [50]. We recover this comment to focus on a key concept shaping an essential part of violence solution: creativity. When we choose to allow love force to turn negativity into positive determination for overcoming a problem, we are choosing constructive instead of destructive solutions. We are deciding on applying an integrative power instead of a disintegrative one [50]. In Figure 2, the two lightning flashes indicate that these two first phases are necessary for tuning the engine before starting to run. Through this decision, we bet on implementing a transformation process consisting of creative actions for overcoming the problem. We bet on creativity. In this way, at the third green-coloured phase (Figure 2), positive determination mobilizes the creative capacity

for implementing love-inspired transformative processes. The result: movement generation, illustrated by the movement of the propeller, which corresponds to integrative, constructive actions that influences our surroundings positively. **Such a transformation process begins changing the world by transforming ourselves first, working from our hearts' deepest part** [50]. After all, each one of us is also part of the world, of life's fabric. Then, our own transformation will result in nascent creativity coming out of us for influencing our surroundings positively and transforming them. We can compare this effect to the positive influence generated by a source in a desert, multiplying the possibilities of spreading life around it. Similarly, each drop of constructive creativity increases the possibilities of building new bridges as integrative solutions to violence. This positive transformation is a logical result of betting on constructive creativity. At this point, we must focus on another element from Galtung's violence definition. Concretely, when he says, "... *insult to human needs*" [55]. Considering the human mind's high potential for creating constructive solutions to problems, we undoubtedly insult ourselves every time we use violence, such a disintegrative and destructive power, trying to end violence. When we resort to violence, we are not ending violence but perpetuating it. We are keeping a feedback loop of violence. In this regard, we can highlight the words of the South African politician Ben Ngubane, "*Violence remains violence, irrespective of motivation*" [57]. Applying that logic is an ineffective path multiplying violence. Inspired by the love force, the better path is using our creative capacity for constructing positive solutions to conflicts. Even more considering that these solutions generate a multiplying positive effect. Regarding this multiplier effect, Nagler provides us with an optimistic view, claiming that anything we do to reduce violence anywhere will contribute towards lowering violence everywhere [49].

3. The integrative love force in the 2030 Agenda.

Since this thesis adopts the 2030 Agenda for Sustainable Development as the fundamental action plan guiding its steps, it becomes essential to show how the presented nonviolence approach falls into the Agenda. Describing this interrelation is a critical matter because, as we will see, nonviolence has a high potential for significantly encouraging the Agenda implementation process.

A careful analyse of the Agenda's content allows observing a close relationship between the document adopted by United Nations and the integrative love force characterizing nonviolence. This connection is particularly visible at one point of the official paper. Concretely, when it focuses on the concept of "partnership". As a first step, before deep into this interesting Agenda's point, it is useful to study the etymological origin of the word "partnership". The

earliest mean of this English term dates from the sixteenth century, as “state or condition of being a partner”. It relates to Latin form *pars*, meaning “a part, piece, a share” [58]. We can appreciate that the underlying meaning of the word partnership as “a constituent of something” adjusts to the nonviolence principle of unity, according to which we all are one. In the light of the nonviolence approach, “partnership” arises for the first time at the Agenda's preamble as one area of critical importance for humanity and the planet [1]. At this point, the Agenda states:

“We are determined to mobilize the means required to implement this Agenda through a revitalized Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people.” [1]

In this first paragraph, the Agenda acknowledges the “*partnership for sustainable development*” as a work area of critical importance “*to mobilize the means required to implement the Agenda*”. The critical point of this statement consists of highlighting the requirement for mobilizing all the necessary implementation means. Beyond monetary funds or other material resources, we can consider two even more relevant elements. Firstly, the human component. The statement's last phrase is precise at this point, claiming “*with the participation of all countries, all stakeholders and all people*”. The word “*global*” used with a capital letter as a crucial adjective of “*partnership for sustainable development*” insists on the implication of all people everywhere, at the same time that evokes the sense of unity again, so crucial in the nonviolence approach. As we previously studied, the concept of “ignorance” from the educational model refers to the incomprehension of this concept of unity, the fact that we integrate the life's fabric.

On the other hand, we must consider a second critical human resource when the selected paragraph refers to “*mobilize the means*”. It consists of our creative capacity to implement transformative, constructive processes aiming to overcome problems and positively influence our surroundings. Within the three-phase process for applying nonviolence (Figure 2), this creativity is the main concept of the third phase.

Concurrently, from the beginning, the document points out that the base of such as necessary partnership for achieving sustainable development is a spirit of solidarity. When we think about this interrelation between “partnership & spirit of solidarity”, we can observe profound parallelism with “overcome ignorance & love force”. Both pairs are interchangeable. The love force (spirit of solidarity) results from overcoming ignorance and comprehend that we all are one (sense of unity intrinsic to partnership). In this way, we can conceive the spirit of solidarity because of establishing partnerships. Nevertheless, at this point, we must remind that the

dynamic between the concept of ignorance and the love force operates in two directions. In this sense, the love force is not only the emergent power resulting from the comprehension of the connectedness between human beings. As we previously studied, the love force is also the way for achieving that purpose. Considering the parallelism, the spirit of solidarity is not only a result of new or renewed partnerships but also the integrative power promoting them.

Finally, we must pay attention to one imperative need clearly expressed by the Agenda through this paragraph. The text uses the terms “revitalized” and “strengthened” to refer to how the “partnership for sustainable development” must be. It is self-evident that the Agenda is making known the clear need for revitalizing and strengthening this crucial partnership for achieving the vision of the world we want. To surmount this need, we must consider the parallelism between "overcome ignorance & love force" and "partnership & spirit of solidarity". The need for a revitalized partnership overlaps with the need for overcoming ignorance and make people aware of we are one, of I am actually hurt when the others are hurt. The integrative love force is the way to achieve this revitalized and strengthened spirit of solidarity, which is the base of the partnership for sustainable development.

4. The presence of nonviolence in Christian thinking.

There exists profound parallelism between the nonviolence approach described in this thesis and the earliest Christian thought. Multiple biblical passages from the New Testament illustrates this interconnection. To visualize some teachings from this belief system can be particularly helpful for facilitating the comprehension and assimilation of some critical concepts about the nonviolence approach. This possibility becomes particularly interesting when considering that Christian tradition is widespread. More in-depth knowledge and familiarization with nonviolence is a necessary step for encouraging its implementation. The earliest Christian thought can become a valuable asset for achieving this purpose because it is particularly accessible to a large proportion of the world population. In order to facilitate this support work to the widespread implementation of the nonviolence approach, below we analyze several biblical passages from the New Testament in the light of the nonviolence approach. Firstly, we focus on Jesus Christ’s public call to love each other, subsequently complemented with an approximation to the concept of ahimsa. Finally, extending the practical purpose of this section, we study the applicability of specific New Testament passages to each one of the three phases composing the process for applying nonviolence.

The Gospel of John compiles in at least three different Jesus Christ’s dialogues a direct public call to love each other. Below, we recover these three text fragments from the New Living

Translation of the Bible according to their order of appearance in John's Gospel. References at the beginning of each fragment indicate their location in the Bible.

- John 13: 34. *“So now I am giving you a new commandment: Love each other. Just as I have loved you, you should love each other”* [59].
- John 15: 12. *“This is my commandment: Love each other in the same way I have loved you.”* [60]
- John 15:17. *“This is my command: Love each other”* [61].

In the same line, the Gospel of Matthew includes a similar statement.

- Matthew 7:12. *“Do to others as you would like them to do to you”* [62].

Concurrently, it is worth emphasizing that this public call to love each other repeatedly appears in other documents from the New Testament.

- 1 John 4:7. *“Dear friends, let us continue to love one another”* [63].
- 1 Corinthians 10:24. *“Don’t be concerned for your own good but for the good of others”* [64].

The Sanskrit *ahimsa* term refers to the absence of the desire or intention of hurt. This profound concept is a central pillar of the nonviolence approach, to the extent that the English word “nonviolence” is literal translation of *ahimsa* [50]. The biblical passages previously recovered encourage us to love each other sincerely. The New Testament's love concept involves a great scope, referring to a very profound love appealing to intentionality, such as the concept of *ahimsa*. We can observe this in the following two passages.

- 1 John 3:15. *“Anyone who hates another brother or sister is really a murderer at heart”* [65].
- Matthew 5:21-22. *“You have heard that our ancestors were told, ‘You must not murder. If you commit murder, you are subject to judgment.’ But I say, if you are even angry with someone, you are subject to judgment! If you call someone an idiot, you are in danger of being brought before the court”* [66].

The process for applying nonviolence previously defined consists of three reproducible phases. This thesis proposes this schematic, accessible view about the nonviolence process in an attempt to encourage and facilitate the implementation of such an integrative power. Some passages from the New Testament relate to the principles underlying this three-phase process. Consequently, these passages can be helpful to comprehend and assimilate how this process works. Below, we frame some specific passages within each phase.

Phase nº 1. By the love force, we overcome ignorance and get the motivation to influence our surroundings positively.

The formulation of phase nº 1 phase involves two different parts. Firstly, it refers to overcome ignorance. Concretely, to get comprehension about the subtle sense of connectedness between human beings, and consequently, the reality that violence hurts both victims as aggressors. This consciousness becomes possible through the love force. This view adjusts to the following passage.

- Galatians 3:28. *“There is no longer Jew or Gentile, slave or free, male and female. For you are all one in Christ Jesus”* [67].
- 1 John 4:16. *“We know how much God loves us, and we have put our trust in his love. God is love, and all who live in love live in God, and God lives in them”* [68].

Secondly, phase nº 1's formulation includes also getting the motivation to influence our surroundings positively. We have studied that this empowerment is possible through the love force. In this sense, the following passage describes love features boosting a positive attitude for caring for our surroundings.

- 1 Corinthians 13:4-7. *“Love is patient and kind. Love is not jealous or boastful or proud or rude. It does not demand its own way. It is not irritable, and it keeps no record of being wronged. It does not rejoice about injustice but rejoices whenever the truth wins out. Love never gives up, never loses faith, is always hopeful, and endures through every circumstance”* [69].

Phase nº 2. We choose to allow the love force to turn negativity into positive determination for overcoming problems.

Phase nº 2 of the three-phase process (Figure 2) involves the critical step of allowing love force to turn hate, resentment, panic, fear, anguish, frustration, or other negative feelings, into constructive and positive determination for overcoming problems. We can appreciate this viewpoint in the following passage.

- 1 John 4:18. *“Such love has no fear, because perfect love expels all fear. If we are afraid, it is for fear of punishment, and this shows that we have not fully experienced his perfect love”* [70].

Phase 3. We use our creative capacity for implementing a transformation process consisting of constructive, integrative actions for overcoming problems and influencing our surroundings positively.

Finally, the third phase (Figure 2) involves using our creative capacity, inspired by the love force, for implementing transformative processes through which influencing our surroundings positively. We must highlight that this phase does not involve passivity. On the contrary, it involves using constructive instead of destructive solutions, on applying an integrative power instead of a disintegrative one. In this creative and constructive action plan, the following passage shows us what to do and what not to do.

- Luke 6:27: *"If someone slaps you on one cheek, offer the other cheek also. If someone demands your coat, offer your shirt also. Give to anyone who asks; and when things are taken away from you, don't try to get them back. Do to others as you would like them to do to you"* [71].

5. The need for learning about nonviolence.

The kind of ignorance referred under the educational model's umbrella does not refer to the lack of academic or scientific knowledge but something different. Nagler claims that it is not something learned with the intellect (although it can help us understand) but heart knowledge [50]. As we have discussed, the love force is the way to overcome this kind of ignorance and achieve the *"heart knowledge"*, that is, to make people aware that they are damaging themselves and their victims when inflicting violence [50]. In this regard, a genuine *"heart knowledge"* involves not have the slightest intention of hurt [50]. At this point, a logical thought emerges when considering that we are talking about *"knowledge"* in the context of a model called *"educational"*. The third word that we are looking for connecting these both terms is *"learning"*. The critical point here is that, like any other kind of knowledge, the *"heart knowledge,"* despite being subtly different, can also be learned. In fact, it is essential to highlight the importance of not forget learning this kind of knowledge, since, as Nagler claims, ***"This kind of awakening, this rehumanization, is the highest kind of education"*** [50]. Consequently, we not only can learn nonviolence, but we must do that. This need becomes even more urgent in the light of some crucial declarations from the documents composing this thesis's framework. Firstly, the 2030 Agenda acknowledges the mutual dependency between sustainable development and peace, highlighting that *"there can be no sustainable development without peace and no peace without sustainable development"* [1]. Such a memorable statement adjusts to Nagler's claim about the love force, *"It is the key to the new world we are looking for"* [50]. Likewise, warning about the world situation at the beginning of the twenty-one century, the World Declaration on Higher Education alerts about a world in which inequalities between countries grow more acute, where the absolute power of money brush aside human solidarity, and where violence proliferates and constitutes a real threat to peace [3]. In the line of this

worrying description, both the own World Declaration and the Seville Statement on Violence, already one decade before, encourage to strengthen education about a culture of peace and nonviolence [3, 4].

6. Higher education and nonviolence.

Since nonviolence involves, as Nagler stated, *“the highest kind of education”* [50], it seems sensible to think that this *high knowledge* should be particularly present in the tertiary educational level, that is, in *higher education*. In fact, at a glance, we can easily observe the convergence between the terms “the highest kind of education” and “higher education”. At this point, we must remind that, according to the World Declaration, in the twenty-one century the higher education faces the challenge of strengthening its role as a promoter of a culture of peace and nonviolence [3]. The Declaration calls to encourage social transformation by transcending the undergoing profound crisis of values and mere economic considerations to incorporate more profound morality and spirituality dimensions [3]. In this way, higher education's cultural and ethical mission is one the highest priorities stressed by the Declaration [3]. Some Declaration's articles illustrate the firmness around this purpose. For example, when claiming that higher education must reinforce its service role to society, particularly the activities intended at eliminating violence [3]. The following statement goes even further in aligning the Declaration with nonviolence: **higher education must aim to create a new non-violent society consisting of individuals inspired by the love for humanity and guided by wisdom** [3]. Consequently, higher education has a huge and firmly acknowledged responsibility for promoting a culture of peace and nonviolence in our society. At this point, we have a very good new. Since nonviolence can be learned, *“peace could be a simple matter of training”*, as Nagler states [49]. Consequently, higher education becomes an exceptional field of work for both learning and training nonviolence. In fact, incorporating the basis of the educational model by the own higher education is the best way to achieve the purpose for promoting a culture of peace and nonviolence in our society. The principle holding this hypothesis is the multiplying effect resulting from the human creative capacity for constructing positive solutions to conflicts when inspired by the love force. Because of the convergence of a broad, motivated youth base with technical resources and highly cultivated professors, the higher education context's creative capacity is exceptionally high, meaning a solid hope for a successful, generalized nonviolent movement. Therefore, **higher education meets numerous valuable assets for triggering a powerful social nonviolent movement, a process with the potential to generate a ripple effect that would multiply creative and constructive actions.**

7. How far can we go by applying nonviolence?

At this point, we must ask ourselves, how far does this creative, constructive ripple effect can go? To answer that question properly, we need to rethink better the limits of the problem we are facing: violence. Since the love force inspires us, our creative actions for constructing new solutions to the problem will go so further as the problem itself. Then, how far does violence go? The following claim from Nagler can help us to understand the limits about we are asking. The cited author answers, *“Violence, by any meaningful definition, is a phenomenon that cries out to be repaired, something that in an ideal world human beings would not do to one another—or to the environment or any of its living inhabitants”* [50]. French philosopher Jacques Ellul provides us with an alternative answer, focusing on nonviolence. He claims, *“Nonviolence is a positive force that holds the solution to most of our major personal, social, and global problems”* [50]. Nagler’s answer shows us that violence goes beyond interpersonal injuries, involving also hurt that humankind inflicts to the environment and all its living inhabitants, including animal or vegetable species and others. Therefore, we can think in violence as the destructive, disintegrative human phenomenon underlying unsustainable behaviours at the three dimensions of sustainable development, that is, social, economic and environmental. If such an answer was not wide enough, Ellul seems to open even more the scope of what violence involves, talking about nonviolence's efficiency for resolving the most (unspecified) of our problems at the individual, social and global spheres. Under this thesis's focus aligned with the 2030 Agenda, these considerations allow us to think that nonviolence is a suitable path for proposing creative solutions to at least most of the SDGs recognized by the global community. Therefore, nonviolence becomes a promising solution in a historical moment when humankind faces critical challenges for achieving sustainable development.

Forensic intelligence

Previously, in this introduction, we envisaged the hope for creating a world free of violence thanks to the built framework. Then, we studied the nonviolence approach as a way to achieve this vision. In this regard, we have understood violence as the destructive, disintegrative human phenomenon underlying unsustainable behaviours in the three dimensions of sustainable development, namely social, economic and environmental. At this third point in the introduction, we will contextualize this thread of discussion in forensic sciences as a discipline focused on studying crime. In this sense, **violence and crime are two concepts essentially different but significantly related**. The Oxford Dictionary defines “crime” as “*activities that involve breaking the law*” [72]. In turn, the Oxford Dictionary of Sociology goes a little further. It defines crime as an offence beyond the personal and into the public sphere, breaking prohibitory rules, to which legitimate sanctions are attached, and which needs public authority intervention [73]. Both definitions share an important detail: since the law changes over time, consequently also activities or behaviours classifiable as crime changes with time. Likewise, the legal consideration of a specific behaviour as a crime or not also varies from one country to another, existing multiple different legislations that include a diverse, wide range of crimes. In this sense, many crimes involve harmful, destructive or disintegrative activities or behaviours affecting sustainable development's social, economic or environmental dimensions. Regarding these actions, there exists an unquestionable reality: they remain harmful, destructive, or disintegrative independently of being classified as crimes by a specific community in a particular time. In the same line, since violence is the destructive, disintegrative human phenomenon underlying unsustainable behaviours in the three dimensions of sustainable development, such harmful activities involve violence, regardless of specific considerations or not as crimes. Consequently, scientific disciplines focussed on the crime study, when approaching destructive, disintegrative crime-related behaviours, they approximate the violence field of study. This is the case for forensic sciences and criminology. Considering the inherent relationship between violence and such destructive behaviours classified as crimes, disciplines studying crime face violence when focusing on them. Therefore, disciplines belonging to the field of study of crime have a high potential for facing violence and, consequently, can significantly contribute to overcoming it. Since they focus on studying activities characterized by a violent component, they gather information useful for preventing these behaviours. They become excellent sources of knowledge for understanding violence problems and facing them adequately, inspiring evidence-based and well-targeted preventive measures.

1. Forensic sciences and criminology, twin sisters.

Forensic sciences and criminology have different approaches to crime, despite being their shared study object. This fundamental connection comes from an original convergence. In this regard, in the book “The Routledge International Handbook of Forensic Intelligence and Criminology” [74], Paul Knepper thinks about these both disciplines as twin sciences, claiming that the history of criminology has been weaved with that of forensic science: separated in recent years but tied together at the beginning [75]. Arguing about these disciplines' historical development, he holds that although criminology and forensic sciences live separate lives today, they were born twins when the scientific study of crime emerged in the late nineteenth century [75]. However, Knepper holds that a progressive delimitation of the boundaries between forensic sciences and criminology arised at the end of the XIX and beginning of the XX centuries, during a movement of internal and external differentiation that affected crime studies and science in general [75]. This differentiation process resulted in two territories: one leaned toward the natural sciences and the other toward the social and juridical sciences, each of them seeking its corpus of practices and knowledge. According to this author, forensic sciences and criminology were separate sciences after the Second World War, and until the 1980s, they became ambivalent, hesitant and contradictory [75]. Da Agra completes the visualization for the current stage, claiming that it is unclear what establishes forensic sciences' and criminology's identity and that their unity is a relative concept. He argues that under an apparent unity, there are numerous and even opposing levels of forensic and criminological discourse [76]. What is clear is that both of them have different approaches to crime. In this sense, forensic knowledge mainly targets helping the penal system. Meanwhile, criminology has a less focused scope, aiming at an improved understanding of crime [77]. Nevertheless, Knepper argues that, during the last decades, after the earliest internal differentiation process within criminology and forensic sciences, thinkers from both disciplines have a synthesis and unification goal [75]. In the case of forensic sciences, Knepper observes the desire for a new paradigm in Margot and Ribaux's idea of a unique, autonomous scientific discipline, that is, *forensic science* without the “s”. Da Agra condenses this vision claiming, “*A culture of research in forensic sciences does not exist outside a true scientific science, the forensic science*” [76].

2. A paradigm shift: from the sciences to the science.

Faced with the necessity for a paradigmatic change of forensic science, Ribaux et al. argue that the discipline must become an object of research, focusing on debating its nature [78]. In this sense, various authors indicate the fragmentation currently affecting forensic science. In the

previously cited book, the same author claims that, at present, the prevailing practice in forensic science divides the treatments of data collected into specialized areas, called forensic disciplines [79]. Roux et al. refer to forensic science's dominant conception as a fragmented view, a patchwork of multiple disciplines, known as "forensics", resulting from evolving towards a separation of increasingly more specialized tasks [80]. In this way, "forensic sciences" consists of the multiple technical perspectives potentially involved in supporting the criminal system [77]. Baechlor et al. see these divisions as a threat to advancing science due to polarising researchers and tearing apart scientific communities [81]. Other authors share this view, holding that it denies the status of a science per se [77] and that "forensics" has almost not epistemology of its own [79]. Given that reality, Mulone et al. defend the idea that just as criminology, forensic science *"also relies on core principles and generates fundamental knowledge about crime and its related topics—their dynamics, structures and culture"* [77]. Ross et al. complete this view, pointing that forensic science involves three streams: the courts, investigative, and intelligence. In this sense, they hold the necessity of engagement in these three streams to enhancing forensic science efficiency [82]. Ribuax et al. also highlight forensic science's broader role, claiming that the information it provides must not be restricted only to serve courts but should also support a wider variety of objectives [78]. The same author asks for a change of attitude to accept forensic science's broader role beyond producing evidence for courts [83]. Raymond et al. insist on this reframing of forensic science potential contributions and a refocusing onto crime prevention while maintaining the service to courts [84, 85]. Such extended role relates to the two other additional streams pointed by Ross within forensic science, particularly with intelligence, which has a multi-case focus and implications for crime prevention [82]. In this sense, Morelato et al. hold that this paradigm shift allows applying forensic information from an intelligence perspective [86]. Raymond et al. reinforce this idea, holding that this paradigm shift would facilitate the implementation of "a forensic intelligence", generating timely knowledge to support information processes and decision-making both in policing as in a broader security context [84]. This significant change in forensic science through the new focus of forensic intelligence involves an extended focus from the traditional reactive approach of courts to a proactive one [87-90].

3. Intelligence and forensic intelligence.

The concept of intelligence relates to the interpretation of timely collected, valuable data to solve an issue [91]. It results from applying the intelligence cycle, a process involving data collection, integration and analysis, and disseminating and evaluating results [86, 92]. A more technical approach from the United States Department of Homeland Security defines

intelligence as the final product of a process that involves evaluating information about a phenomenon from multiple sources, integrating it into a logical package, and producing a conclusion using a scientific approach [93]. This valuable product provides direction in supporting decisions and solutions to problems. In this way, Raymond et al. remind us that using intelligence as a source of information for political decision-making is not new, and that exists various types, including military, economic, health, social, or environmental intelligence [84]. In the same line, intelligence also has implications for comprehending criminal phenomena and disrupting and preventing them [82, 94]. In this sense, the Homeland Department defines forensic intelligence as the use of forensic data to provide information to crime-prevention strategies [93]. It is simply an additional type resulting from applying the intelligence cycle on forensic data. However, Ribaux et al. provided the most famous definition of the topic:

“Forensic intelligence is the accurate, timely and useful product of logically processing (analysis of) forensic case data (information) for investigation and/or intelligence purposes” [83].

Another clarifier definition comes from Bruenisholz et al.:

“Forensic intelligence is the timely aggregation and processing of forensic case data from different cases. It provides phenomenological knowledge on criminal activity and may support proactive and preventive approaches” [95].

Forensic intelligence is a singular opportunity to understand criminal phenomena and draws promising in tackling and reducing them, particularly when they are repetitive [91, 96]. Legrand et al. see it as a framework for a more holistic, useful approach for crime prevention through a proactive rather than a reactive approach [97]. Wilson et al. share this view about forensic intelligence's proactive focus through prevention based on criminal activity knowledge [98]. Therefore, the concept of forensic intelligence involves a change in traditional understandings of forensic science [97]. It becomes an alternative dimension of forensic science, playing a complementary role to the traditional mission serving to courts [86]. Forensic intelligence is crucial to intelligence-led policing [86], commonly understood as the use of analyzed information by decision-makers to inform police strategies and resources, particularly in a criminal environment with a serial component [95]. It enhances intelligence-led policing by providing valuable information at strategic, operational and tactical levels [99]. In this way, forensic intelligence connects to the security field and allows switching policing from a reactive to a proactive approach [79]. Some examples of integrating forensic intelligence include a European ballistic database to assist in detecting offences or using forensic data to identify

linked crimes across time and space [100]. Nevertheless, it is crucial to highlight that forensic intelligence is a holistic and multifaceted concept that goes beyond the implementation of databases [97]. In this regard, Ribaux et al. attract attention to the need to avoid definitions of forensic intelligence associated with the use of databases or based on computerized systems, holding that it is undesirable to define a domain through its tools and calling for definitions relates to intelligence theories [83].

4. Forensic intelligence's unexplored potential.

Forensic intelligence restores a broader position for forensic science by filling a gap in crime investigation and policing [79]. However, it clearly goes beyond intelligence-led policing. In this sense, various authors point out that **forensic intelligence is currently at an initial development and positioning phase**. Raymond et al. refer to it as an emerging form of intelligence, whose meaning and value are yet to be widely understood [84]. Similarly, Bruenisholz et al. claim that forensic intelligence is in its infancy because of the traditional view focussed on the court [95]. In the same line, Morelato et al. argue that forensic intelligence is still sidelined despite generalization efforts during the last decades and that its full potential has yet to be realized [86]. At this point, evidence-based knowledge coming from logically, timely analyzed forensic data is, in essence, intelligence, so it is potentially helpful for other decision-making processes involving levels and decision-makers different from actors belonging to the justice system, like courts or police. For instance, Wilson et al. make an approximation to the implementation of forensic intelligence models in the military domain, based on military organizations' long history of intelligence and forensic capabilities [98]. In the same line, various authors [86, 95, 98] remind the three types of intelligence, tactical, operational and strategic, described by Ractlife when reflecting about criminal intelligence [101]. When introducing this differentiation, this author argues that not only police can influence crime, remembering that intelligence generically refers to the "decision-makers". Ratcliffe claims that a product that can make their community safer should look for the most relevant decision-maker [101]. This author adds that intelligence can provide strategies to reduce crime and routes to preventing offending through problem-oriented tactics like situational crime prevention and crime prevention through environmental design [101]. According to Ratcliffe, within criminal intelligence, the most common intelligence analysis level across the world is tactical intelligence, supporting front-line enforcement officers and investigators in taking case-specific action. In this case, decision-makers are individual investigators or small teams focused on local criminals, often aiming to effect an arrest and gathering evidence for a conviction [101]. In turn, operational intelligence is a second, broader level of criminal intelligence identified by Ractcliffe. This intelligence product supports regional

operational managers in planning crime reduction activity, so decision-makers are responsible for geographic areas or enforcement teams' commanders. Operational intelligence targets problem-solving approaches and identifying the most pressing crime-reduction priorities [101]. Finally, Ratcliffe considers a third level referred to as strategic intelligence, which is future-oriented and proactive, providing understanding into criminal patterns and the criminal environment's functioning. In this case, decision-makers are top-level managers responsible for organizational planning designed to influence the criminal environment [101]. At this point, the author indicates the strategic intelligence's broader scope, pointing that it influences not only police behaviour but also non-law enforcement institutions with a potential effect on crime, such as health services and policy settings [95, 101]. In this sense, he argues that strategic intelligence has the potential to be of the most significant value to executives responsible for crime prevention when articulate well-targeted efforts to reduce crime. Nevertheless, Ratcliffe acknowledges that strategic intelligence is often misunderstood, that crime analysts are more focused on tactical intelligence and too few concerned with longer-term crime problems and challenges [101].

5. A dialogue between forensic science and criminology.

Forensic intelligence is a current stream in forensic sciences' development within the crime study field. Considering its meaning, we can visualize it as a communication path from inside forensic science through articulating informative messages shaped like intelligence. As a communication path, forensic intelligence allows establishing a dialogue with her twin sister within the crime study field, criminology. In this sense, various authors point out the need for an interdisciplinary dialogue between forensic science and criminology. Julian et al. compile the opinion shared by several authors according to which forensic science and criminology can support and strengthen each other and should develop an interdisciplinary dialogue [99]. In turns, Mulone et al. reinforce this view claiming that pooling of criminological and forensic data and knowledge would broaden our understanding of criminal phenomena [77]. Similarly, Baechler et al. reflect on the fact that forensic observations interact with alternative information and with other fields of knowledge such as criminology [81], defending that forensic science does not exist in isolation [102]. They claim that forensic findings exist within specific contexts and relate to other valuable information, so forensic scientists should interact with relevant alternative information rather than inefficiently producing data under vacuum [81]. This observation of the need for a greater interdisciplinary dialogue aligns with the current paradigmatic view of science as systemic and communicational, with scientific disciplines functioning as nodes within a network, linking and influencing each other [76]. However, despite

this paradigmatic view, the reality within the crime study field is quite different. Mulone et al. agree that forensic science and criminology rarely interact with each other or share knowledge [77]. They observe a significant reason for this in the different bedrock and focus of these two disciplines. In this sense, criminology focuses on understanding crime from social and human science, while forensic science focuses on serving the penal system working from natural and computer sciences [77]. For this reason, they argue that both territories have different meeting points, publishing in different journals and participating in different conferences. In fact, thinking about this distant relationship between forensic science and criminology, these authors claim, *“They don’t always speak the same language, to the point that it can sometimes be difficult even to understand some of their respective scientific publications”* [77]. This lack of knowledge sharing between forensic science and criminology is a significant weakness affecting the study of crime [77]. Consequently, building new bridges between forensic science and criminology and joining forces through an interdisciplinary dialogue focused on sharing knowledge becomes a communicative exercise contributing to a better understanding of crime phenomena [99]. Within the crime study field, sharing complementary information between forensic science and criminology is a promising step forward that complements both disciplines to strengthen knowledge and bring about a more robust, complete picture of the criminal reality and institutions facing crime [99]. Forensic science and criminology gather a large amount of diverse information with different takes on related topics [77]. The former collects traces that forensic scientists analyse and the latter focuses on verbal or written exchanges studied by criminologists [103]. Da Agra argues that both disciplines can become a *“unitas multiplex”*, a Latin phrase meaning unity of multiples [76]. This author provides various reasons for this strengthening between forensic science and criminology, arguing that both disciplines focus on studying the criminal phenomenon, share the same epistemological and historical matrix, and have the vocation of clarifying crime and investigating security policies [76]. Regarding this last observation, an efficient interdisciplinary dialogue has the potential to enhance preventive efforts facing crime. In this sense, Cusson claims, *“a problem analysis should lead to a solution”*, holding that crime analysts cannot simply accumulate data but also helping to identify responses and put forward solutions since they know about possible effective and ineffective measures [103]. This thesis shares and applies this proactive, constructive view from the university higher education’s forensic study context. Especially when considering the **high potential of this interdisciplinary dialogue between forensic science and criminology for preventing and eliminating violence in its multiple forms, the destructive, disintegrative human phenomenon underlying unsustainable behaviours in the three dimensions of sustainable development.** Intelligence coming from a sharing knowledge process between both disciplines within the crime

study field becomes crucial for guiding well-targeted, evidence-based, and love-inspired decision-making processes focused on seeking efficient solutions facing violence.

Drug-Facilitated Sexual Assaults

Earlier within the context grounding this thesis, we envisaged the hope of creating a world free of violence and the nonviolence approach to achieve this vision. Then, we focussed on the high potential of the crime field of study for contributing to this purpose through the proactive view of forensic intelligence and a sharing dialogue between forensic science and criminology. At this point, we will concentrate on the specific form of violence focussed by this thesis as a study problem: drug-facilitated sexual assault (DFSA). In this form of violence, assailants take advantage of victims who are unable to sexual consent due to the incapacity produced by the effects of psychoactive substances used either voluntarily or involuntarily [104, 105]. A look at this specific form of violence tightly fits within the guiding thread of the context grounding this thesis and prepare us for going in-depth into the developed work. In this sense, regarding our exposition about crime, DFSA is a violation against sexual liberty officially acknowledged through diverse national criminal legislation [106] and by the United Nations Office on Drugs and Crime (UNODC) [106]. Likewise, concerning our understanding of violence as the destructive human phenomenon underlying unsustainable behaviours. In this sense, within the social dimension of sustainable development, DFSA constitutes a clear manifestation of the unsustainable character and the destructive and disintegrative essence of human behaviours to which the violence phenomenon underlays. Nevertheless, since it is a form of violence affecting sexual liberty, we must pay attention to its particular connection with the more inherent and original meaning of the violence concept.

When explaining the earliest meaning of the Classic Latin verb *violare*, Veschi highlights, “*From the beginning, in ancient Rome, it links with sexual abuse*” [47]. Soca also comments on this initial sense of *violare*, “*At all times it referred, above all, to the act of sexual violation*” [48]. Consequently, when exploring the deep meaning and etymological origin of the word “*violence*”, a significant interconnection stands out with sexual assault, the infringement, or in fact, the *violation*, of someone’s sexual freedom. In this way, we become aware of an innate and earliest meaning of violence as a regrettable phenomenon sieging and injuring a profoundly essential aspect of our nature. We acknowledge it as an ignominious evil that profanes our dignity and integrity as human beings. Therefore, we can observe a particular interconnection between the original and more thorough significance of the word violence and sexual assault or the attack on sexual freedom, being DFSA a representative example of this destructive, disintegrative and unsustainable human behaviour. In this way, a study focus directed towards

sexual violence allows a closer approximation to the earliest and more inherent nature of the violence phenomenon.

On the other hand, consistent with the guiding thread of the context grounding this thesis, three other vital reasons justify the study's focus on the DFSA phenomenon beyond the described epistemological consideration.

The intention of helping to realize gender equality and the empowerment of women.

Concerning gender inequality, the 2030 Agenda acknowledges, *“the achievement of sustainable development is not possible if one half of humanity continues to be denied its full human rights and opportunities”* [1]. In this sense, the Agenda claims that the realization of gender equality is crucial to progress across all the SDGs and targets. This challenge is so critical that the own Agenda includes a specific goal, the SDG 5, focused on overcoming it. An essential step for achieving women and girls empowerment involves the elimination of all forms of discrimination and violence against them (Target 5.2) [1]. At this point, sexual violence is a widespread problem that disproportionately affects women's well-being and human rights, particularly of young women [107-1009]. The vast majority of studies concerning DFSA are consistent with this observation. Young women are the profile mainly affected by this form of violence [110-117].

The intention of working WITH and FOR young people. *“Working with and for young people”* is

the United Nations Youth Strategy's title [1], one of the fundamental pillars composing this thesis's contextual frame. From the university higher education context, concentrate work efforts on the DFSA phenomenon allows realizing the double message that the Strategy's title incorporates: to work WITH and work FOR young people. In the last decades, the DFSA phenomenon has become especially frequent in the leisure nightlife context, the primary setting of victimization by this form of sexual violence [110-117]. Since this recreational context mainly involves young people's participation, DFSA is a problem particularly affecting the youth community [104, 105]. In this way, focussing on this topic consists of working FOR young people, approaching a violence problem that severely affects this population group. Furthermore, regarding working FOR youth, the United Nations Youth Strategy's priorities also include protecting their human rights [2]. At this point, the Strategy prioritizes the need to *“ensure a strengthened focus on young people experiencing intersecting forms of discrimination and abuse”* [2]. The DFSA phenomenon's selection adjusts to this need since it is a problem of intersectional nature combining violence against women with the use and abuse of psychoactive substances like alcohol or other drugs [104]. On the other hand, since DFSA is a violent phenomenon particularly suffered by young people, approaching this topic encourages youth

mobilization and active engagement for public participation in processes focused on overcoming the problem. This thesis authorship shows the most obvious example of this working WITH young people since the author of this work is a young man.

The intention of promoting a nonviolent movement for sustainable development from the university higher education context. As a violence problem of intersectional nature affecting the youth community, the DFSA phenomenon is particularly present in the university context because of leisure dynamics linking drug use with sexual interrelation [118-124]. Since the operational field for developing this thesis is the own university context, working on the DFSA phenomenon becomes an excellent opportunity for generating solutions to the problem from the inside one of the most affected settings. Nevertheless, generating solutions to DFSA working from inside the own university context involves another particularly important consideration. Since DFSA is a problem affecting and, consequently, attracting the higher education community's attention, working on that topic allows making visible in the face of the own higher education community its potential for generating efficient solutions to violence problems. It becomes a way of revitalizing higher education awareness about the need to overcome the violence phenomenon to achieve sustainable development. The higher education university context has an extremely high potential for taking part in this process of generating efficient solutions to violence. It combines the two elements composing the feedstock: high creativity and a great deal of in-depth information about all the topics approached by the seventeen SDGs of the 2030 Agenda. Therefore, in a particularly historic moment for sustainable development, the higher education university context can become aware and take responsibility for its high potential for contributing to the Agenda's goals and targets. This mission fits the World Declaration on Higher Education's commitment to a higher education renewal process for building a better world and promoting a culture of peace and nonviolence [3].

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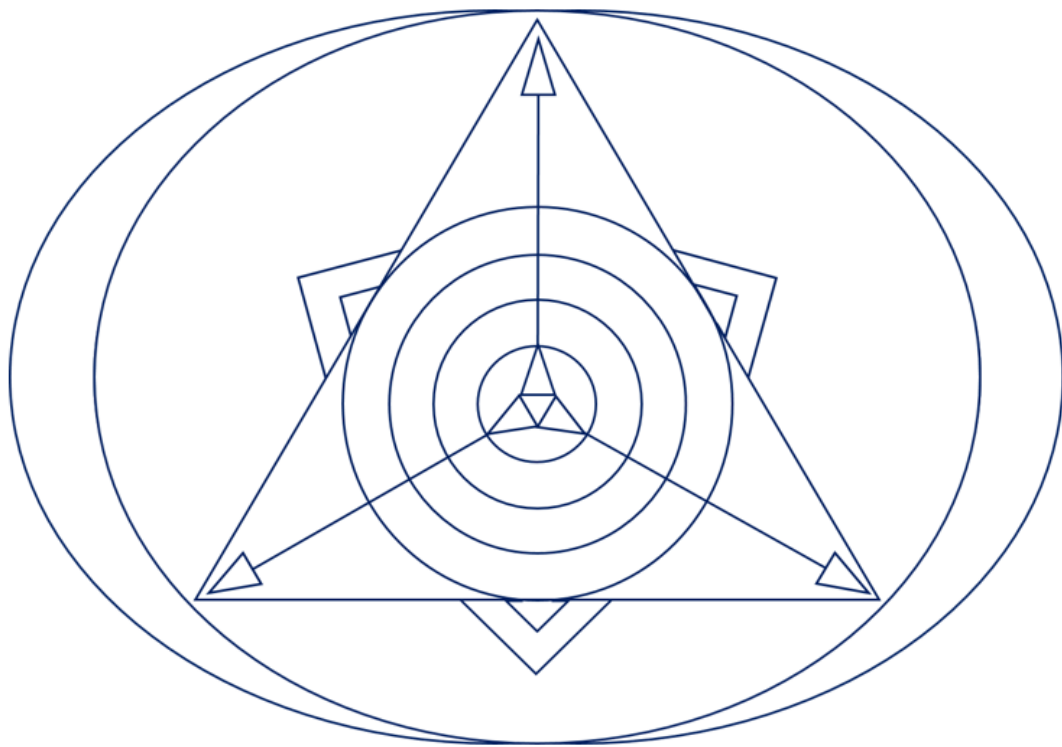
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Hypothesis, Objectives and Outline



Over the course of the implementation period of the 2030 Agenda, the university higher education can contribute significantly to the purpose of achieving sustainable development thanks to its high potential for positive influence, which results from combining a tremendous creative capacity with a high level of scientific knowledge. Based on this observation, this thesis's general hypothesis claims:

General hypothesis: The channelling of the university higher education's positive influence potential would enhance its contribution to overcome DFSA violence contributing to the advance towards sustainable development achievement.

This general hypothesis includes four other specific suppositions:

There exists a lack of comprehensive, holistic understanding of the DFSA phenomenon's intersectional nature and the interconnection of the multiple influencing factors affecting this form of violence, including a significant bias about the affectation of other contexts and profiles of victimization beyond the assaults suffered by young women in leisure settings. Consequently, effective study tools applied to the DFSA phenomenon would overcome this profound lack and improve a comprehensive knowledge about this specific form of violence.

There is a lack of social awareness of the victimization by the DFSA phenomenon and the difficulties faced by victims of this form of violence, conditioned by different misconceptions and sexist social perceptions and attitudes shaping the cultural dimension of this form of violence. Consequently, overcoming this violent cultural background would generate support for efficient solutions facing the cultural dimension of the DFSA phenomenon, which is possible by mobilizing the university higher education's positive influence potential supported by an improved knowledge about the topic.

There is a deficient approach to the DFSA phenomenon by government institutions at the national and international levels, affecting the forensic and judicial investigation of the problem, the official study about its prevalence, and preventive models, shaping the institutional dimension of this form of violence. Consequently, overcoming this deficit would generate support for efficient solutions facing the institutional dimension of the DFSA phenomenon, which is possible by mobilizing the university higher education's positive influence potential supported by an improved knowledge about the topic.

There is a lack of empathy and willingness to inter-individual cooperation regarding social situations directly involving episodes of DFSA, both by potential assailants and witnesses able to act as capable guardians, shaping the direct dimension of this form of violence. Consequently,

enhancing empathy and willingness to inter-individual cooperation in these situations would generate support for efficient solutions facing the direct dimension of the DFSA phenomenon, which is possible by mobilizing the university higher education's positive influence potential, supported by an improved knowledge about the topic, and applying the new mechanism as a strategic intelligence tool for guiding well-targeted preventive actions.

Based on the above-mentioned hypothesis, the thesis's general objective pursues:

General objective: to enhance the university higher education's contribution to the advance towards sustainable development achievement by channelizing its positive influence potential to overcome the DFSA violence.

To achieve this general objective, this thesis's pursues:

To develop, mobilize, improve knowledge about the DFSA phenomenon and generate solutions to the cultural, institutional, and direct dimensions of this form of violence.

Consequently, four additional goals face this specific form of violence.

Objective 1: to overcome the profound lack of understanding about the DFSA phenomenon and improve comprehensive knowledge about this specific form of violence by developing and applying a new study tool.

Objective nº 2: to generate support for efficient solutions facing the cultural dimension of the DFSA phenomenon through overcoming misconceptions and sexist social perceptions and attitudes, by mobilizing the university higher education's positive influence potential supported by an improved knowledge about the topic.

Objective nº 3: to generate support for efficient solutions facing the institutional dimension of the DFSA phenomenon through overcoming the deficient approach to this form of violence by government institutions at the national and international levels, by mobilizing the university higher education's positive influence potential supported by an improved knowledge about the topic.

Objective nº 4: to generate support for efficient solutions facing the direct dimension of the DFSA phenomenon through enhancing empathy and willingness to inter-individual cooperation in social situations directly involving episodes of DFSA, by mobilizing the university higher education's positive influence potential, supported by an improved knowledge about the topic, and applying the new mechanism as a strategic intelligence tool for guiding well-targeted preventive actions.

Figure 3 illustrates the general and specific objectives pursued in this thesis, including the DFSA targeted goals.

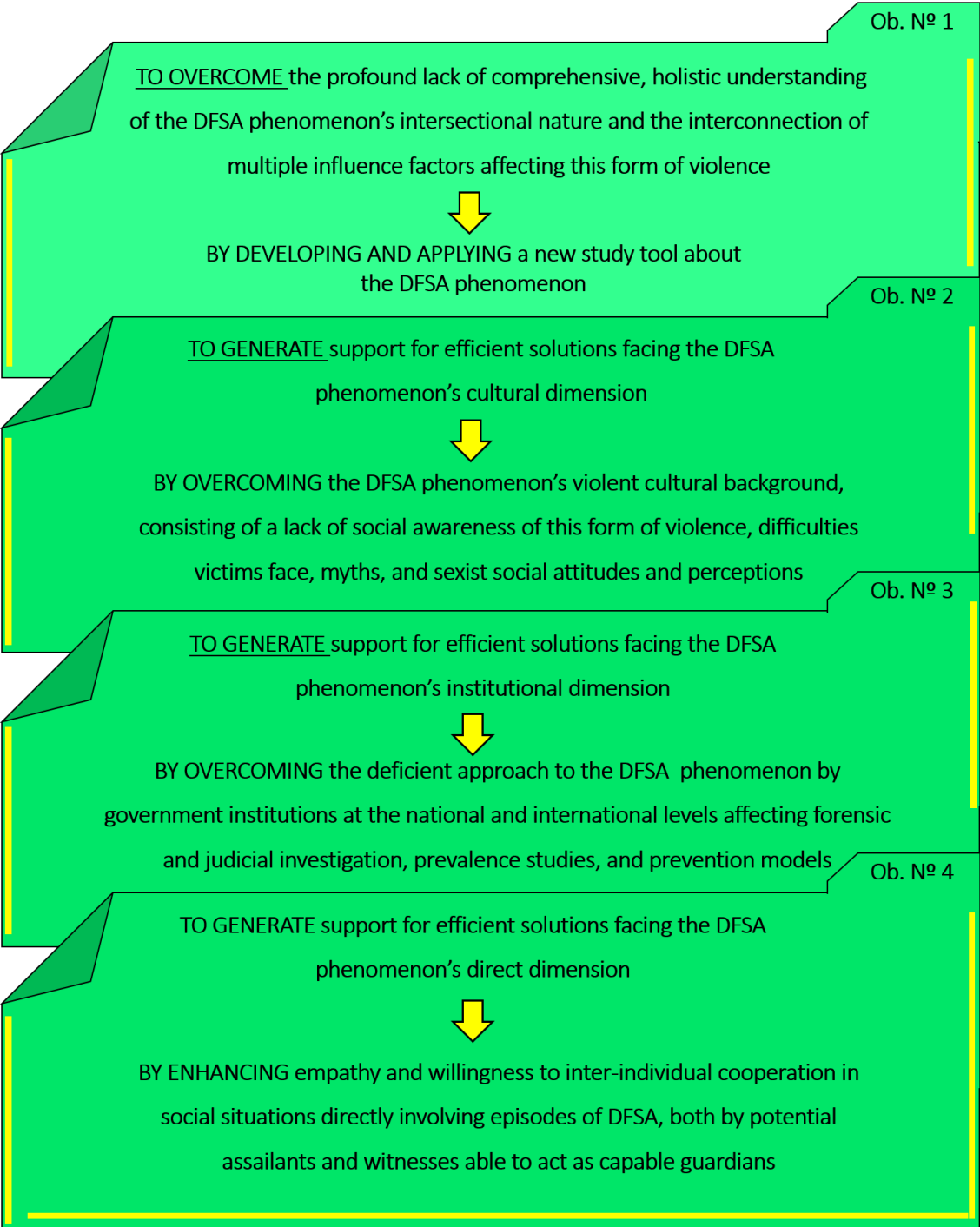


Figure 3. Objectives of this thesis.

To achieve these objectives, this thesis consists of six chapters, which outline is described in Figure 4. It shows their ordered sequence and main content.


Context grounding this thesis	Framework Nonviolence principles Forensic intelligence Drug-facilitated sexual assault	New ecological working framework application
CHAPTER 1	A NEW ECOLOGICAL WORKING FRAMEWORK FOR DFSA	Understanding DFSA: young women in leisure contexts
1.1	Holistic, transdisciplinary understanding of the DFSA phenomenon	
CHAPTER 2	GENERATING SUPPORT: CULTURAL DIMENSION OF DSA	Generating support facing DFSA: young women in leisure contexts
2.1	Increasing awareness of the severity of opportunistic DFSA	
2.2	Studying gender-based differences in Spanish youth	
CHAPTER 3	GENERATING SUPPORT: DIRECT DIMENSION OF DSA	
3.1	Developing a preventive strategy within the educational system	Expanding research: other profiles and contexts
CHAPTER 4	GENERATING SUPPORT: INSTITUTIONAL DIMENSION OF DSA	
4.1	Institutional financing of research about DFSA	
4.2	Working from strategic positions within the United Nations system	
4.3	Improving toxicological analysis by forensic institutions	Expanding research: other profiles and contexts
4.4	Increasing awareness of public authorities and institutions	
CHAPTER 5	LEAVING NO ONE BEHIND. VICTIMIZATION BY DFSA	Expanding research: other profiles and contexts
5.1	Understanding other profiles and contexts of victimization	
CHAPTER 6	THESIS CONTRIBUTIONS TO SUSTAINABLE DEVELOPMENT	
6.1	This thesis within sustainable development's frame	
6.2	Applications to other forms of violence different to DFSA	

Figure 4. Thesis outline and chapter interrelationship.

Chapter 1 compiles the development and application of a new ecological working framework as a helpful tool for significantly improve the holistic and transdisciplinary understanding of female victimization by DFSA, particularly in leisure nightlife contexts frequented by young people. Likewise, the new instrument is presented as a practical instrument for mobilizing the university higher education's positive influence potential to develop well-targeted, evidence-based actions generating support facing the cultural, direct, and institutional dimensions of the DFSA phenomenon. Consequently, after this earliest in-depth understanding of the study problem,

chapters 2 to 4 consist of applying the new working framework for generating support to solutions overcoming the three DFSA's dimensions: cultural, direct and institutional

Thus, **Chapter 2** Chapter 2 includes two works that direct the positive influence flow towards the cultural dimension of the DFSA phenomenon. On the one hand, this chapter reviews the DFSA's opportunistic variant, how it is shaped in the leisure nightlife context through the convergence of sexual interrelationship and drug use dynamics, as well as the difficulties faced by female victims of this form of violence. On the other hand, this chapter presents a survey-based study about Spanish youths' attitudes and perceptions concerning sexual violence and the DFSA phenomenon in the leisure nightlife context, providing significant findings of young people's thoughts regarding this form of violence in the national youth setting.

Subsequently, **Chapter 3** contains one work guiding the university higher education's positive influence potential towards the direct dimension of the DFSA phenomenon. Concretely, this chapter shows the application of the new ecological working framework as a platform for preventive strategic thinking, which helps design and articulate a preventive strategy within the educational system focused on facing the DFSA phenomenon in youth leisure contexts. At this point, previous findings from Chapter 2 resulted extremely valuable for feeding this preventive purpose targeted to strengthening direct support facing victimization by DFSA.

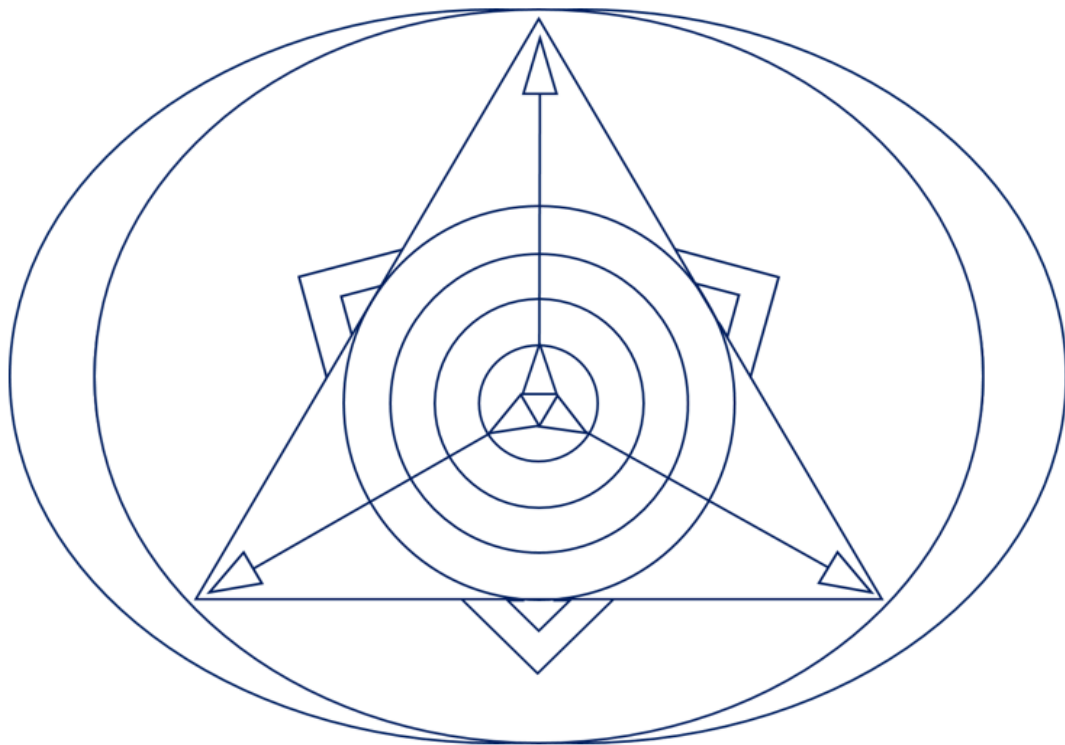
Then, **Chapter 4** compiles several actions directing the positive influence potential towards the DFSA phenomenon's institutional dimension. Efforts at this level involve three different working areas. Firstly, the earliest efforts consisting of public grant applications for funding projects focused on studying the DFSA phenomenon and for research stays in government institutions. Secondly, different actions developed by working from strategic positions inside various government institutions both in the national and international sphere. At the national level, by working at the Central Department's Chemistry Service of the National Institute of Toxicology and Forensic Science (INTCF). Concretely, through the development of a new methodology for preparing and analysing blood samples from victims of alleged DFSA cases. Similarly, at the international sphere, by working at the UNODC. The developed work from this operational level involves reviewing a protocol about the legal investigation of alleged rape cases, creating a new model for preventing the DFSA phenomenon, and a novel proposal for including a question about the victim's vulnerability state in official victimization surveys. Finally, the third working area encompasses several efforts for increasing awareness of public institutions and authorities about the severity of the DFSA phenomenon in leisure nightlife contexts.

After generating support facing the study problem's cultural, direct, and institutional dimensions, **Chapter 5** returns to applying the developed new ecological working framework as a study tool. However, this final application goes beyond the youth leisure context in the study and understanding of the DFSA phenomenon. The new framework is applied as a working tool for an even more profound understanding of the DFSA phenomenon. For implementing a research perspective free from contextual biases.

Finally, **Chapter 6** shows this thesis's contributions to sustainable development both through work focused on the DFSA phenomenon as by the developed ecological working framework as a new tool applicable to overcoming other forms of violence.

CHAPTER 1

A New Ecological Working Framework for DFSA



1.1. An Ecological Working Framework as a New Model for Understanding and Preventing the Victimization of Women by DFSA.

Main source:

Prego-Meleiro P, Montalvo G, Quintela-Jorge O, García-Ruiz C. An ecological working framework as a new model for understanding and preventing the victimization of women by drug-facilitated sexual assault. *J. Forensic Sci. Int.* 2020; 315: 110438. Online available at: <https://doi.org/10.1016/j.forsciint.2020.110438>

ABSTRACT

An innovative approach towards the holistic and multidisciplinary study of the victimization of women by DFSA has been developed. This phenomenon constitutes a significant problem given the narrowing of the gender gap in drug use over the last few decades and the widespread presence of psychoactive substances worldwide. As violence against women and drug misuse intersect in this phenomenon, this intersectional nature emphasizes the need for a novel approach that enables us to go beyond the studies carried out to date. Consequently, a multidimensional strategy incorporating a gender-sensitive approach has been implemented. The study was aligned with approaches recommended by international authorities concerning sustainable development, thus meeting current global challenges. Furthermore, the study was structured based on an ecological model divided into multiple influence levels and integrating the triangular theory of violence. As a result, a new ecological working framework was built as a multilevel platform useful for understanding and preventing the victimization of women by DFSA.

INTRODUCTION

DFSA involves assailants approaching victims who are unable to consent due to the disability produced by the effects of psychoactive substances, used either voluntarily or involuntarily [1,2]. As such, the DFSA phenomenon results from the intersection of two public health problems seriously affecting contemporary societies worldwide, namely sexual violence and the misuse of psychoactive substances. Sexual violence includes any sexual attempt or act, comments and unwanted sexual advances [3] and disproportionately affects the wellbeing and human rights of women [4–6]. In turn, drugs, including both recreational and pharmaceutical substances, are widely used nowadays. Misuse is an increasing concern since the inappropriate use of legal drugs comes in addition to the diverse and growing market in their illegal counterparts [7]. Furthermore, the gender gap in the consumption of alcohol and other drugs has narrowed significantly over the last few decades in Western countries [8–10], particularly among younger cohorts [8,11,12]. However, if changes in consumption trends are not accompanied by genuine progress in gender equality, the likelihood of women suffering DFSA is likely to be higher. Indeed, the vast majority of studies concerning DFSA have focussed on young women and leisure contexts as the profile and context mainly involved in victimization, respectively [13–20]. On the other hand, the focus of forensic case reviews is typically limited to an analysis of the evidence, with no in-depth study of other significant factors involved in victimization. Several authors have drawn attention to the need for a comprehensive approach involving the study of all related risk

factors and the situational characteristics contributing to sexual assaults [14,17,21–23]. Such biased approaches have resulted in a narrow understanding of the DFSA phenomenon to date. Violence has an intersectional nature in which the factors involved may simply add one form of disadvantage to another, or produce a multiplier effect [24]. As such, drug-related effects are not the only vulnerability factor involved in DFSA, with many others also affecting violence and increasing the risk of sexual assault [18]. From a public health point of view, the most appropriate approach to understanding violence requires a holistic view of the multiple influencing factors involved [2]. In this regard, an intersectional approach based on socio-ecological models has been shown to be a suitable tool for improving our understanding of violent phenomena [2]. Ecological models have previously been used to study intimate partner violence [25,26]. However, such frameworks have not yet been used to study the victimization of women via DFSA in an in-depth manner. The study of how the factors involved in DFSA interconnect to create experiences of victimization is an urgent requirement in order to address the problem properly. Furthermore, since DFSA is a phenomenon violent in nature, the incorporation of the triangular conceptualization of violence [27] allows achieving a more comprehensive approach to the experience of victimization. In this way, the combination of the ecological model and the violence triangle complement each other. Both approaches are necessary to complete the study of DFSA and take into account the three faces of violence suffered by victims: direct, structural and cultural. Therefore, this study addresses DFSA as an intersectional phenomenon resulting from the interrelationship between violence against women and the misuse of psychoactive substances. To this end, this work aimed to propose a new working framework that applies several approaches recommended by international authorities and combines the ecological model with the triangular conceptualization of violence. This innovative framework intends to be a useful instrument for understanding the victimization of women by DFSA and serving as a foundation for the development of well-targeted prevention strategies.

MATERIAL AND METHODS

Several approaches recommended by international authorities were applied for the in-depth study of the victimization of women by DFSA. The strategy incorporated a differentiated and intersectional gender-sensitive approach committed to the defence of women's human rights. The integration of gender mainstreaming is encouraged to understand the causes, consequences, and mechanisms of violence against women [28]. Likewise, the differential approach takes into consideration diverse factors that generate vulnerability beyond gender in order to recognize the dynamics of discrimination that specifically affect women [28,29]. This

focus is aligned with the intersectional approach required to visualise the multiple intersections of vulnerability factors in victims [29–31]. The strategy also applied an approach based on disability-related drug use. Disability encompasses many health conditions that may be long term or temporary [32,33]. As such, drug use is associated with the risk of developing health problems leading to disability [7,12,34]. In addition, an approach based on human rights, targeted towards the analysis of situations in which those rights are violated, was also applied [35]. At that point, given the need for an intersectional analytical perspective [29,36] and the convergence of personal and contextual factors [32,33], a holistic approach is necessary to go further when studying the DFSA phenomenon. The application of holistic approaches has been recognized as an important need for addressing development challenges [37]. As such, an ecological framework operating on multiple influence levels was used as a multidimensional structural frame. Furthermore, the combination of the ecological model and the violence triangle reinforces a more comprehensive approach visualizing the experience of victimization by DFSA as a whole. Therefore, a strategic sequence is observed, which starts with the application of the recommended approaches, and goes through the implementation of a holistic focus based on an ecological model finally complemented with the violence triangle. Thus, as shown in Fig. 5, the methodology applied implemented a multidimensional strategy supported by different approaches and theoretical lines, used for the in-depth study of studies related to the DFSA phenomenon, including reviews, forensic case studies, and related research studies. This multipronged approach allows us to be faithful to the global challenge of “no one will be left behind” pursued by the Agenda 2030 for Sustainable Development [36], given that, in order to leave no-one behind, it is necessary to go beyond.

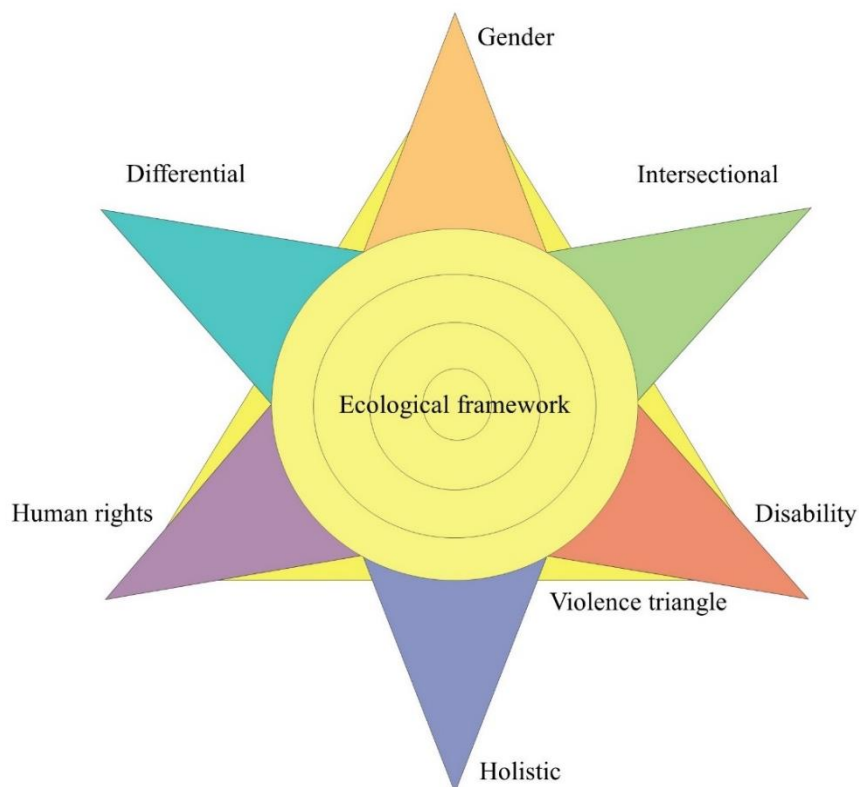


Fig. 5. Conceptual strategy, specifying the analytical approaches, structural ecological framework applied, and the triangular theory of violence.

RESULTS AND DISCUSSION

1. A new ecological working framework concerning the victimization of women DFSA.

A new working framework is proposed herein as an instrument to achieve progress in understanding and preventing the victimization of women by DFSA. The new framework combines the ecological model [38] and the triangular conceptualization of violence [27]. The phenomenon studied is complex and involves multiple vulnerability factors, so the need to integrate a holistic view led to the use of an ecological model. Such a heuristic tool organizes the existing knowledge around the studied issue into an intelligible whole. The ecological approach conceptualizes violence as a multifaceted phenomenon grounded in diverse factors classified into four levels of influence [25]. Fig. 6 illustrates these levels as concentric rings. On the other hand, the new framework also incorporated the violence triangle to improve the understanding and achieve a more comprehensive approach to a phenomenon violent in nature. As shown in Fig. 6, both approaches complement each other, reinforcing the potential of the new framework.

The intersection of the two external ellipses illustrates how both sexual violence against women and the misuse of psychoactive substances come together in an internal ellipse corresponding to the DFSA phenomenon. From outside to inside, the four concentric rings represent the influence levels encompassed by the ecological framework, namely macrosystem, exosystem, micro- system and individual [2,25,38]. The four rings share a mutual interrelation since all of them interconnect and influence each other. The central point corresponds to the position held by the victim and is the common centre influenced by the four levels. As such, the experience of victimization is affected by the factors classified at each level. The thick red arrows pointing towards the center illustrate the flows of influence generated by the configuration of the factors into the four levels in a way that contributes to breaking the ecological balance between the victim and the environment.

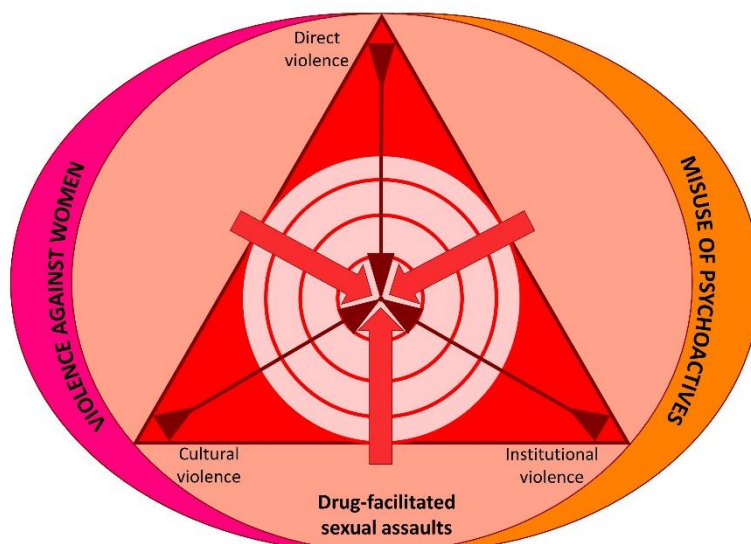


Fig. 6. The new ecological working framework developed to understand the victimization of women by DFSA.

The central point in Fig. 6 is also the centre of the triangle external to the rings. Violence is considered a vicious triangular syndrome, which can start at any corner of the triangle and be transmitted to the other corners by causal flows [27]. Each corner of the triangle corresponds to one of the three forms or levels of violence described by Galtung [27], who differentiated between direct, structural and cultural violence. The first corresponds to violent events between people. In turn, structural violence is a process that happens within structures at the end of long and ramified causal chains and cycles. Structural violence herein refers to processes carried out by administrative structures or institutions that result in forms of institutionalized violence, thus leading to secondary victimization. Cultural violence is the set of social attitudes and beliefs

justifying direct and structural violence [27]. The configuration of the influence levels in a way that breaks the ecological balance leads victims to face these three forms of violence, a process represented by the thin arrows from the corners of the triangle to the central point.

Therefore, the ecological model allows a structured study of the configuration of the factors at each influence level to articulate the process of violence. Such an instrument enables the disaggregated study of the numerous factors involved in the victimization process in a tidy manner, through their classification into levels of influence. In turn, the violence triangle represents in itself the three different levels of violence faced by victims. In this way, the new framework operates on multiple levels as a multidimensional structural frame. The combination of both approaches enables a more comprehensive look at the experience of victimization. Both approaches share a meeting point, as illustrated by the tangency between the more external ring and the triangle (Fig. 2). As such, cultural values and beliefs classified at the macrosystem level are strongly connected with the notion of cultural violence set by the triangular syndrome. This violent cultural background is the breeding ground to feed institutional and direct violence.

1.1. Influence levels.

The most significant factors involved in the victimization of women by DFSA have been classified into the four influence levels. Fig. 7 specifies the factors analyzed within each level. Implementation of the new working framework allows the door to be opened, thus leading to an in-depth understanding of victimization by DFSA.

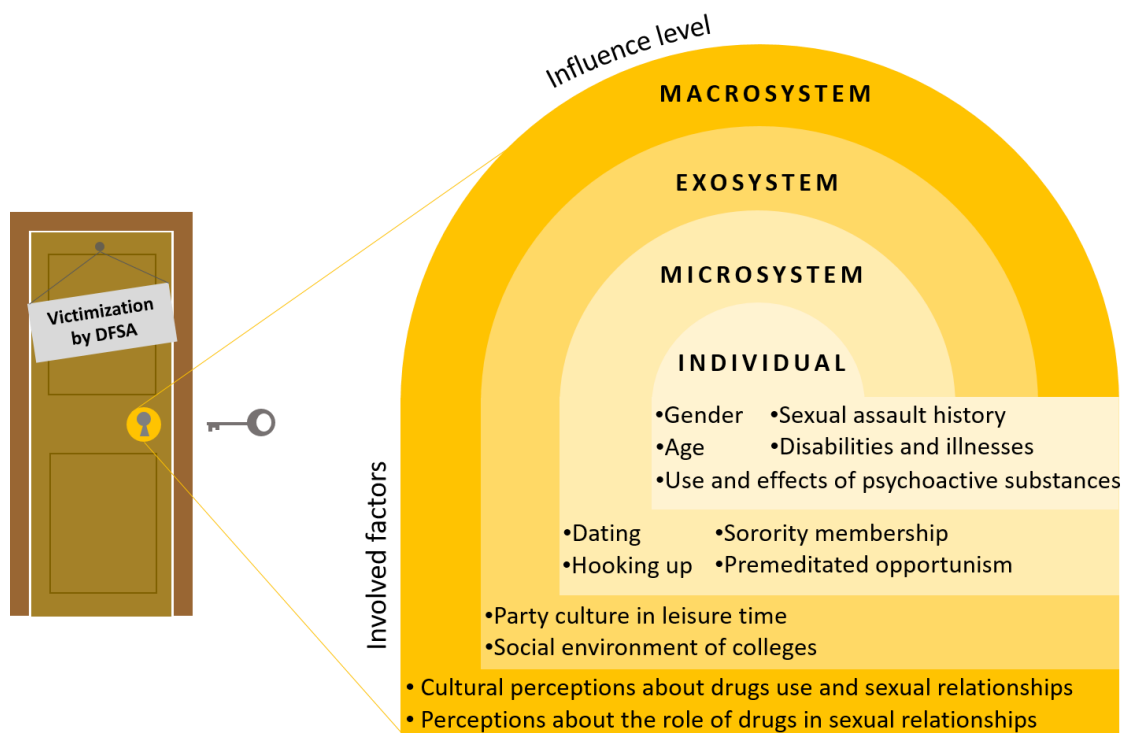


Fig. 7. Influence levels of the ecological framework and the factors analyzed.

Individual level. The factors included at this level correspond to those intimate features arising due to biological aspects, experiences, and personality, which influence an individual's behaviour [2,25]. The data were mainly obtained from studies of alleged cases attended at sexual assault treatment centers [39–46], and from studies of alleged sexual assaults reported to the judicial authorities [47–56].

Gender. Women face a disproportionately greater risk of gender-based violence simply for being women [57], especially in terms of sexual violence [4,5]. In the USA, rates of rape or sexual assault reach 1.8 per 1000 women, compared with 0.3 per 1000 men [58]. Victimization figures relating to DFSA show a significant gender component [59]. Case studies indicate that women represent the vast majority of victims, reaching between 92 % and 100 % in most studies [39–41,46–52]. Many other focused only on female samples [42,43,52,53,60].

Age. Younger age increases the vulnerability to victimization by sexual violence, especially for women [2,25]. Women aged between 18 and 24 years have the highest rate of sexual assault victimization [20]. Studies of alleged DFSA cases are consistent with this observation, with the vast majority of victims having an average age ranging from 23 to 27 years [39,40,43,44,47–51,53,54]. Concerning the age ranges, ages of between 18 and 30 years were noted in around 69 %–73 % of cases [41,42]. More than 60 % of victims were aged between 15 and 25 years in two studies [41,53] and the percentages of victims varied between 52 % and

55 % for ages ranging from 18 to 25 years [43,49]. In turn, other case studies directly focused on research into DFSA in young people [46]. The highest-risk age ranges for sexual assault were from 16 to 19 years [60] and the first year of college [13]. A survey-based study observed that 4% of college women had suffered DFSA during the previous year, compared with 0.4 % from the general population [61].

Use of psychoactive substances. The vulnerability produced by psychoactive substances is a defining factor in DFSA since intoxication is positively correlated with the risk for sexual assault [19,22]. Assaultants take advantage of the state of vulnerability experienced by the victim because of intoxication. As such, DFSA perpetration is classified into two different types based on the way in which the assailant acts, namely opportunism and pro-activity [1]. Opportunism involves assaults after the voluntary use of substances by victims, whereas involuntary intake happens in proactive assaults, in which assailants covertly or forcibly administer substances to victims. Covert use refers to the surreptitious administration, whereas forced administration refers to involuntary consumption by coercion, threats or the use of physical force. Studies indicate that the vast majority of alleged cases are opportunistic [22,59,60]. Indeed, the prevalence of voluntary use can be as high as 97 % [55], approaching 80 % in other studies [49,50]. On the other hand, with regard to involuntary use, a large case study related only 3% of alleged DFSA cases to involuntary consumption [55]. Similarly, another study classified 3% of cases in a sample of nearly five hundred people who had experienced sexual assault as proactive DFSA. This value reached 20 % when considering only the smaller sample consisting of DFSA cases [47]. Other authors reported suspicion of proactivity in 13 % of cases [50]. In other study no voluntary consumption of any substance was reported by 5% of subjects [43]. Proactive DFSA was suspected in 21 % of subjects in a Canadian study, although the authors recognized a possibly higher percentage of victims suffering assaults after voluntary intake [45]. Another study from the same country classified 12 % of cases as proactive DFSA [62]. Involuntary consumption was only found in less than 1% in another recent study [46]. High detection rates for unexpected substances may be attributable to poor or incorrect recall of substance use by victims, as well as the slow metabolising of some drugs, such as cannabis.

Effects produced by psychoactive substances. Multiple drugs are potentially able to impair the ability to consent to sexual activity [41]. Impairment depends on several factors, such as age, prior drinking experience, weight, dose consumed, speed of drinking and concomitant use of other psychoactive substances [47,53]. The substances usually encountered in DFSA cover a wide range [63], which reflects the availability derived from prescribing practices [50,55,56], as well as social behaviours related to drug abuse [42,49]. However, a positive result for a

substance does not necessarily mean that the victim was under its influence at the time of the assault. The time elapsed between consumption and sample collection makes correct interpretation of the analytical results more difficult.

Alcohol may increase the risk of assault as a result of physiological changes that disrupt cognitive processes [64], which make perception more difficult, facilitate the misinterpretation of cues and promote ineffective communication [22,65]. Victims self-reporting alcohol intake before the attack range from 71 % to 88 % [46,48,49]. The lowest detection rates were 22 % [42] and 24 % [44], whereas several studies reported values ranging between 31 % and 38 % [39,46,48], or 45 % and 48 % [40,43,51,55]. The highest detection rates were 55 % [53] and 66 % [50]. Some studies have explored the retrograde extrapolation of the blood alcohol concentration (BAC) around the time of the alleged assault, observing mean BACs of around 0.2 g/dL [40,43,51,53,55]. Such high levels are likely to cause loss of consciousness and to affect the ability to provide consent and to recall the event [48,51]. Furthermore, the likelihood of suffering a greater intoxication becomes higher when alcohol is used concurrently with other substances [55,60].

The prevalence of self-reported use of illicit drugs, such as cannabis and central system stimulants, before an assault range from 20 % [49] to 26 % [39,48]. Cannabis has been related to DFSA because of its relaxing effect and impairment of short-term memory [42,60]. Detection rates vary from 5 % to 7 % [42,43,53], intermediate values such as 19 % [66] or 26 % [55], or higher values of around 33 % [41] or 34 % [39]. However, the detection of cannabinoids may result from long-term detectability and slow metabolism [42]. Furthermore, advantage may be taken of the effects of central system stimulants to increase euphoria, libido and render victims more receptive to sexual activity [42,55,60]. Studies observed self-reported rates of cocaine use of 11 % [46] and 6 % [41] in alleged DFSA cases. As regards detection, cocaine reached 21 % [39], 18 % [41], 11 % [55] or 6 % [42].

The majority of medications found in DFSA cases produce sedative-hypnotic effects [53]. Self-reported use of prescription medications prior to the alleged assault varied from 49 % [48] to 29 % [39]. In one study, 70 % of patients had been prescribed one or more benzodiazepines, antidepressants, antipsychotics, opioids or antiepileptics [48]. In another study, 26 % of subjects reported having used over-the-counter medications prior to being assaulted [39]. Benzodiazepines produce impaired thinking and memory loss, lack of coordination and drowsiness [66], and are some of the most commonly detected pharmaceutical drugs in DFSA cases [59]. Detection rates range between 4 % and 12 % [39,41,42,53,55].

Mass media use the term “date rape drugs” to refer to substances with supposed high prevalence rates in DFSA, including GHB, flunitrazepam and ketamine [66]. GHB increases sex drive, lowers inhibition, impairs judgment, and produces an amnesic effect, dizziness, and drowsiness [60]. Case reviews have shown a prevalence of GHB between 3 % [66] and 4 % [67]. The detection in other studies varied from 1 % to 3 % [39,47,51], decreasing to below 1 % in a few others [42,53]. Regarding flunitrazepam, most studies report the detection in less than 1 % of cases [43,51,53].

Sexual assault history. A history of sexual assault influences future re-victimization [2,13,22,68]. Sexual assault is related to an increased risk of post-traumatic stress disorder and major depression [69], which affects sexual re-assault by reducing the ability to recognize the risk [21]. Victims of sexual assault use different strategies to cope with post-traumatic stress and negative feelings [18,70]. As such, a history of sexual assault is strongly associated with the use of alcohol or other drugs [19,22,68,69,71]. However, drinking to cope increases the risk of re-victimization by DFSA [68,72] due to a decreased risk perception when faced with perpetrators who may target them [21]. Studies show that women who have suffered an incapacitating sexual assault before college are likely to experience the same type of attack at this stage [73]. Some authors propose a bidirectional connection between alcohol consumption and sexual assault [22,74] according to which alcohol use acts as a risk factor and at the same time is an after-effect of assault [75].

An acknowledgment of rape requires the victim to consider the violence suffered to be a crime and therefore self-identify as a victim [22]. Nevertheless, the assaulted person can actively seek to avoid the victim label by downplaying the event and not engage in any processes typical of victims, such as disclosing the attack or seeking help [22]. In particular, people suffering from sexual assaults involving alcohol consumed voluntarily do not recognize themselves as victims easily [76,77] because they do not feel that their experience meets the criteria of a “real rape” [78]. This is likely due to stereotypical notions concerning rape [22]. Many victims are unsure as to whether to label their experience as aggression or to conceptualize it as miscommunication or bad sex [79]. Furthermore, unacknowledged victims are at heightened risk of re-victimization, as they do not recognize the need to take precautions against future assaults [77].

Vulnerability derived from physical and/or mental disabilities or illnesses. According to the hunting model, assailants select victims based on situational components, such as the victim’s vulnerability [80]. Disabilities and illnesses lead to an increased risk of sexual assault by diminishing the ability to resist an assailant [81,82]. With regard to DFSA, for persons with a

deficient health status, temporary incapacitation derived from psychoactive substances adds to the compromised physical mobility and/or comprehension skills related to their usual condition. Moreover, health problems usually involve the use of psychoactive substances. As a result, these people are particularly vulnerable. On the other hand, victims suffering disabilities or illnesses may experience increased difficulties in reporting or seeking help [81]. A lesser access to justice is also related to marginalization by police when reporting an assault [83]. In addition, intellectual disability may lead to a lack of understanding of the criminal meaning of sexual abuse [82]. Health problems involving disabilities or illnesses ranged from 33 % to 35 % in two studies [39,49], and around 10 % in another [50]. In turn, victims self-reporting mental health issues represented around 44 % of subjects [43,49]. In another study, 49 % of victims reported the use of prescription medication, with 70 % of these using one, or more, sedative drugs [48].

Microsystem level. Human social contexts encompass personal relationships within defined groups of people interacting in their immediate physical surroundings [84]. The microsystem level refers to situational characteristics involving direct personal interactions [25]. The majority of sexual assaults on women involve interactions with one male perpetrator [2,5]. Case studies have reported similar findings for DFSA related to both gender [48] and number of assailants [43,49]. Sexual offenders are in most cases known to the victim [6,20]. Traditional dates and hooking-up are the two types of relationships particularly studied related to DFSA [85]. At this level, sorority membership and premeditated opportunism also require attention (Fig. 7).

Dating. Dating involves participants who know one another, or want to get to know each other, and there is the possibility of a future relationship [85]. Companionship and intimacy are goals for dating principally reported by women, whereas men are more likely to have sexual goals [86]. Alcohol is typically consumed on dates [87,88], and drinking has been reported to be the strongest predictor of involvement in sexual behaviour on first dates [88]. However, drinking accompanying sexual behaviour may increase the potential for miscommunication and risky sexual activity [87]. Dating violence is consistently associated with the use of alcohol [89]. As such, sexual assault is likely to occur in dating situations involving alcohol use [90]. On the other hand, less communicative intimacy is expected in party dates [85]. These situations encourage the use of substances by both potential victims and offenders, where they are less likely to be alone, thus making communication more difficult [15].

Hooking-up. This interrelationship involves sexual activity between people who do not know each other well, such as strangers, casual friends or brief acquaintances, with no commitment to a future relationship [85,91]. Alcohol consumption is involved in 60–80 % of

casual sexual encounters on college campuses [90,92], with hook-ups typically occurring at parties, bars and clubs [85,91], where two people who have used psychoactive substances meet and engage in sexual behaviours. Therefore, little or no communication between hook-up partners is typical [91]. Miscommunication increases risky sexual behaviours and the likelihood of sexual assault. In this sense, through a variety of situations, hook-ups end when one partner falls asleep or passes out [91], which is a potential risk situation for DFSA. Thus, descriptions of hook-ups often involve behaviours that would legally be considered rape [85,91].

Sorority membership. Research into sexual violence often focuses on colleges as contexts of youth cohabitation. The microcosm for students living in university communities consists in an immediate social circle, similar to family in the model of Heise [25]. In this sense, behaviours and attitudes associated with the peer group play an important role in encouraging sexual aggression [93]. The immediate context is intimately linked to the motivation for using drugs and the perceptions of risk [94]. Relationships derived from sorority membership put women at significant risk of suffering rape [95]. In this regard, hooking-up has become more frequent at college than dating [85,91], and many sexual assaults happen during hook-up interactions, which typically occur in fraternity houses [91,96].

Premeditated opportunism. The motivations for the use of alcohol and other drugs, as well as the related risk perceptions, are intimately linked to interactions with the immediate context [94]. In this sense, alcohol use by victims of sexual assault is frequently encouraged by another person, often the assailant [15,97]. Significant proportions of male college students admit to encouraging their female counterparts to consume alcohol in an attempt to pursue sexual intercourse [15,16,98]. This behaviour may be related to sexual goals as the primary motivation for dating in males [85,89,99].

Exosystem level. The exosystem refers to social structures affecting immediate contexts surrounding an individual and influencing their experiences [25]. The vulnerability to assault may be increased in certain risky situations due to the contextualized involvement of various risk factors, such as the presence of motivated perpetrators and a greater use of alcohol [22]. In this sense, assault is likely to occur in drinking-related social contexts [18]. This level includes the study of party culture in leisure time and the social environment of college campuses (Fig. 7).

Party culture in leisure time. Younger people understand the recreational nightlife context as a key space for socialization [94,100,101]. In this leisure model, both consumption and sexual interaction are integral activities [102,103], so sexual relationships based on hooking-up and the use of drugs are intimately linked [22]. The odds of sexual intercourse under

the influence of substances increases in this party culture [102,104], where the prospect of a sexual encounter leads to increased drug use [100,105]. Nevertheless, drinking-related social contexts generate risky situations for assaults, where intoxicated women may come into contact with motivated offenders [22]. Sexual assaults involving the use of drugs are more likely to involve interactions in parties or bars [65]. Visiting pubs or nightclubs significantly increases the rate of sexual victimization [106]. Physical determinants from the typical party setting usually involve noise, which may reduce close and intimate communication [87].

Social environment of college campuses. Sexual assault is a generalized problem at high school and university [106–108]. The majority of rapes of women on college campuses occur when the victim is too intoxicated to resist [71], thus suggesting that DFSA is more frequent than forcible sexual assaults [108,109]. A study observed that one in seven women experienced incapacitated rape during the first year in college [108], whereas another reported that 11 % of women had been sexually assaulted while incapacitated since entering college [107]. This high risk of sexual assault for college women results from their close daily interactions with young men in a range of social situations involving several risk factors, such as social environments with high levels of alcohol use [73]. Substance use is associated with an increased risk of sexual victimization among female college students [110], therefore women who engage in heavy levels of drinking may be at a higher risk of assault [22]. Indeed, up to 70 % of sexual assaults on campus involve alcohol use by the perpetrator, the victim, or both [110]. Consistent with this view, the majority of female students victimized by incapacitated sexual assaults in the study by Krebs et al. [107] reported that incidents happened off campus. Other studies found no differences in rape victimization between college and non-college students, although a higher risk was reported for sexual assault among women living away from their parents, and among women engaging in heavy episodic drinking [111]. These findings suggest that the social settings where various risk factors converge may put women at risk of DFSA rather than their student status [22].

Macrosystem level. Human social environments also include components of social processes such as various inequalities and cultural practices. Similarly, historical social and power relations contribute markedly to the shape of contemporary social environments [84]. The macrosystem refers to this broad set of cultural values and beliefs [25]. Over the last few decades, the cultural frameworks of the youth lifestyle within a leisure context have changed from a traditional community-based model towards a more secular and individualist one in which the use of drugs and sexual relationships are considered almost exclusively as instruments through which to achieve fun and pleasure [100,105,112,113]. These modifications are strongly connected with

cultural violence since they have led to changes in attitudes towards drug use and sexual relationships, as well as in the interconnection of these two phenomena. This level includes the study of the cultural perceptions about drug use, sexual relationships and the role of drugs in sex (Fig. 7).

Cultural perceptions of drug use. Young people perceive getting drunk to be a normal event and a central objective in leisure nightlife [104,114]. They believe in the existence of a widespread social tolerance for alcohol consumption [94,115], and recognize drinking as a primary motive for frequenting socialization spaces characterized by alcohol availability [94]. Another significant change related to substance use involves a significantly narrowed gender gap among younger cohorts, so females and males are reaching similar levels of alcohol and other drugs use [8–10]. This results from easier access to drugs by women, due to cultural influences characterized by shifts away from more traditional gender roles [8].

Cultural perceptions about sexual relationships. Sociocultural changes have also involved significant modifications based on a more liberal view of sexuality [116]. The magnitude of these changes became so evident that they are now viewed as a sexual revolution [116,117], involving significant changes in positive attitudes toward premarital sexual intercourse and sexual activity during teen [116]. This more liberal approach emphasizes personal pleasure to guarantee the satisfaction of needs for gratification [117]. In this regard, some authors note that many youths nowadays sharing a model of consumerist sexuality [102,118]. Likewise, the cultural significance of many leisure settings encourages sexual interrelation [102,119]. Consequently, young people enter leisure nightlife contexts with the expectation of a sexual encounter, seeking to experience sexual interrelations [102,112].

Perception about the role played by drugs in sexual relationships. Young people consider drugs to be facilitators of sexual intercourse and to help them in their search for effects related with sexual interaction [104,106,120]. As such, many youths value the use of drugs in order to achieve sexual goals positively due to their relaxing and disinhibiting effects [98,113,120]. The belief that alcohol reduces the resistance of women is widespread among men, who view drunk women as more accessible sexual targets [120,121]. In this regard, it should be remembered that vulnerability plays an important role in victimization, according to the hunting model for sexual offenders [80,97,98], an attitude based on premeditated opportunism. Considering dating, women mention companionship and intimacy as goals more frequently than men, who are more likely to have more positive attitudes towards casual sex [86]. Sexual goals are more easily obtained by hooking-up [85], a mode of interaction in which

alcohol consumption is frequently involved [91,92]. However, hooking-up has been associated with feelings of sexual regret among women and greater depression [122].

1.2. Violence levels.

The proposed framework comprises three violence levels, as shown in Fig. 6. These levels include the cultural, institutional, and direct violence and correspond to the three corners described by the violence triangle of Galtung [27].

Cultural violence. Cultural violence is defined as any aspect of culture used to justify violence [27]. This notion holds a key position in the new working framework. In this sense, in Fig. 6, the tangency between the triangle and the ring corresponding to the macrosystem level illustrates the meeting point between the ecological approach and the triangular conceptualization of violence. As such, the cultural values and beliefs included in the macrosystem level condition the social attitudes and perceptions promoting violence, shaping cultural violence. This cultural background is the breeding ground for articulating direct and institutional violence. Rape culture normalizes sexual assaults and feeds rape myths, which move the focus of attention from the crime and the assailant onto victims and their behaviour [123] while excusing the assailant and increasing victim blaming [106,124]. Socialization processes embedded in this medium predispose to the belief that sexual assault is justifiable [16,125]. The study of assailants shows narratives involving sexual objectification of women [125], which may result in reduced moral concern for the person objectified [126]. However, objectification experiences may also socialize women to perceive themselves as objects [127]. Women internalizing these ideas can decrease the reporting of sexually violent incidents [128]. College subcultures have heightened levels of rape-prone attitudes [129]. Violence against women is especially denied within leisure contexts on college campuses, with perpetrators being more likely to be excused, as well as maintaining stereotypical definitions of rape [129,130]. In the same vein, a double standard continues to affect gender perceptions regarding sexual behaviour. Thus, based on the frequency of their intercourse, men are rewarded whereas women are derided [131].

Cultural violence in DFSA includes social reaction to sexual violence involving the use of drugs. Perceptions about sexual violence involving the use of drugs are influenced by social opinion about consumption, which varies based on the gender of the consumer. In some societies, excessive drinking by women is viewed as breaking traditional cultural scripts, and therefore as unacceptable behaviour [97]. Moreover, society still views drunk women as sexually available targets in order to get intercourse [132]. Rape myths support social perceptions about the alleged promiscuity of female victims who have drunk before suffering a sexual assault, holding

them responsible for their victimization [97,128]. On the other hand, the female adherence to rape myths increases vulnerability to assault as this affects a woman's ability to respond to danger cues [133]. Furthermore, rape myths blaming victims of DFSA may lead them to not acknowledge their experience as an assault [22]. Drinking alcohol before the assault is related to greater self-blame [96]. Victims do not feel that their experience meets the criteria for a "real rape" [78] and they do not label it as a crime [22,76].

Institutional violence. Institutional violence refers to those processes carried out by administrative structures leading to situations that promote secondary victimization. Most victims of sexual violence do not seek help from either the courts or other institutions [4,5]. The majority of victimized women disclose the violence suffered to informal sources but not to the police [134]. A reason frequently cited is the belief that police cannot help them [135]. Victims with a history of reporting sexual assaults express their dislike of complaining again because of negative experiences with the authorities [136]. Regarding victimized women who drank before an assault, the justice system is less likely to provide effective responses [137]. These victims suffer negative social reactions when disclosing an aggression, including being blamed and disbelieved more commonly than victims of non-alcohol-related assaults [22,123]. In court trials, the adherence of jurors to rape myths influences their perception about intoxicated victims of sexual assault, and give them lower credibility [95,97].

Direct violence. According to the violence triangle of Galtung, direct violence corresponds to violent events [27]. Regarding the DFSA phenomenon, the episodes of direct violence are violations of the sexual freedom of victims.

2. A framework for understanding the phenomenon and improving preventive actions

The new framework allows an in-depth understanding of the currently existing knowledge about the victimization by DFSA, as well as to articulate new lines of work that enable progress in its study. As such, structuring by levels of influence is a useful guide for visualizing vulnerability factors involved in the victimization process. The combination of the ecological framework and the triangular conceptualization of violence allows achieving a more comprehensive approach to the experience of victimization. In this sense, the vast majority of studies have focussed on assaults suffered by young women in leisure contexts, while there is a large gap concerning the study of other profiles and settings of victimization. Further research is necessary focussing on minors or partners in domestic cohabitation, disabled, sick, or elderly people, as well as any profile or context in which vulnerabilities converge. This need to consider all profiles of

victimization is in line with the global challenges established by the Agenda 2030, according to which “no one will be left behind” [36].

On the other hand, the new framework shows a route to the prevention of DFSA by configuring an inverse process to victimization, consistent with the target 5.2 of the Agenda 2030, pursuing the elimination of all forms of violence against women. Such an alternative process to the configuration of violence results from the existence of a powerful capacity for action to influence positively, as shown in Fig. 8. As such, there is a reciprocal relationship between the individual located at the central point of the model and the violence process. Indeed, flows in the model are not restricted from the outside to inside: the opposite direction [from inside to outside] is also possible. The arrows from the central point to outside the external ring illustrate the potential flows of positive influence. This approach does not hold victims responsible for the violence suffered. Instead, this line pays special attention to the ability to act against the violence process. Likewise, as the victimization process affects both the victim and the community as a whole, the capacity for action extends to the community. Consequently, in opposition to the vicious triangular syndrome of violence, positive influences may lead to a virtuous triangle promoting support [27]. This is why the corners of the triangle refer to the related types of support [institutional, cultural and direct] rather than violence.

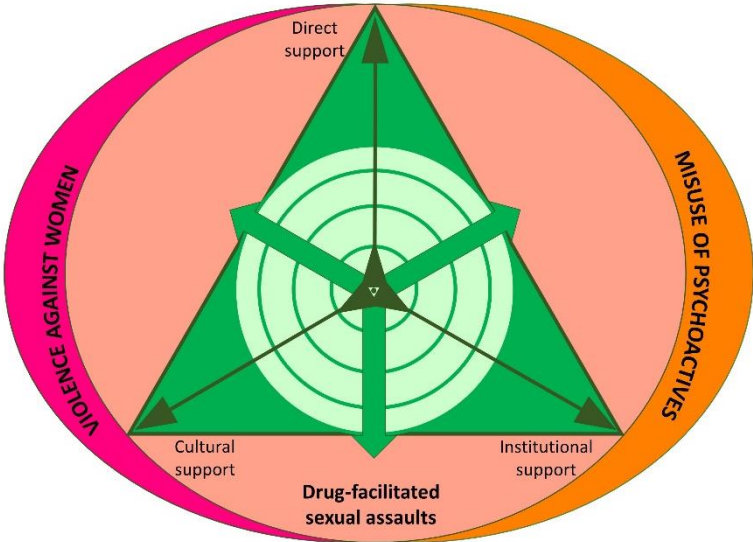


Fig. 8. The capacity of the proposed framework for action to influence positively, configuring an inverse process to violence, and generating support against DFSA.

Structuring by levels of influence of the new framework is an excellent guide for advancing through the route to the prevention of DFSA. A three-step sequence leads the way, as shown in Fig. 9. Firstly, the ability to influence begins with an in-depth understanding of the issue of intervention. In turn, knowledge facilitates a well-targeted decision-making process based on

evidence and adjusted to the reality of the phenomenon, a fundamental basis for the orderly planning of intervention strategies. Thirdly, the new framework is a conceptual map for articulating efforts and effective processes of positive influence.

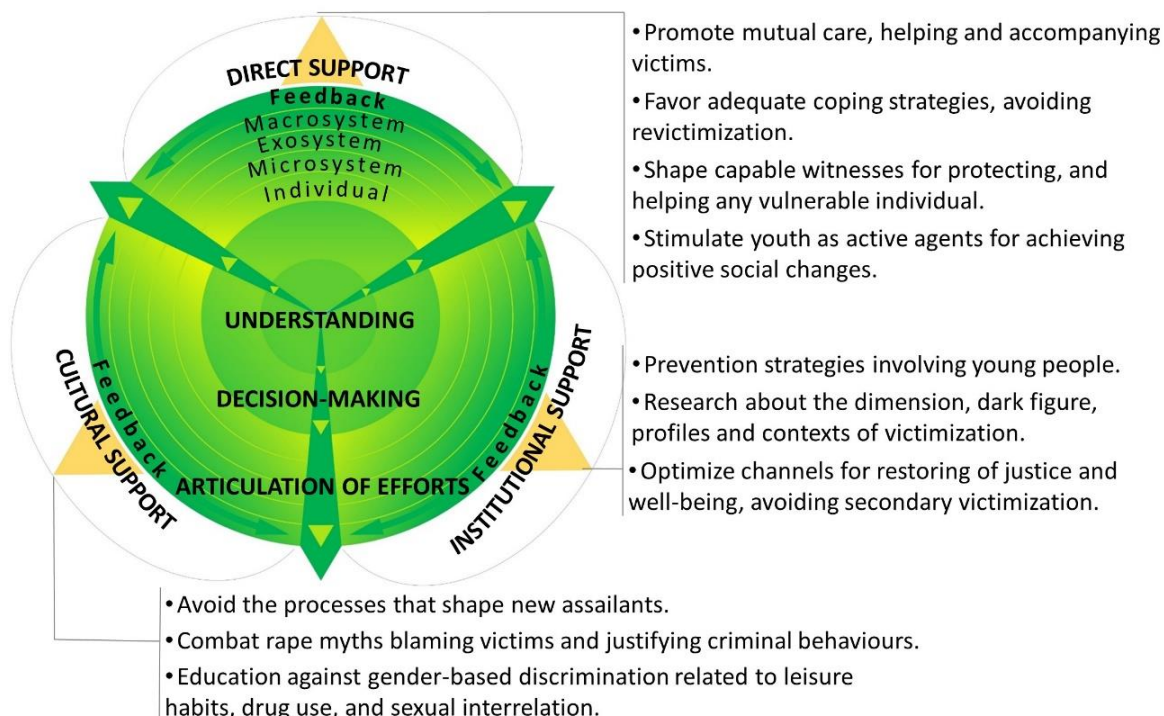


Fig. 9. Strategic framework for promoting an inverse process to victimization by DFSA and coordinating the improvement of institutional, cultural, and direct support.

Some examples of interventions for generating support are showed in Fig. 9. The positive influence derived from these actions promoting non-violence can start at any corner of the triangle and be transmitted to the other corners. Because of this feedback, the implementation of various well-targeted flows of positive influence at different levels may lead to efficient prevention and build support where there was previously violence.

CONCLUSIONS

A new ecological working framework has been proposed as a multilevel platform designed for studying and preventing the victimization of women by DFSA. This innovative approach uses an ecological model structured into four influence levels circumscribed to the theoretical triangular conception of violence, all framed within an intersectional approach resulting from violence against women and the misuse of psychoactive substances. This new framework significantly improves the detailed understanding of the multiple vulnerability factors related to the victimization of women by DFSA. In addition, the instrument developed goes beyond a simple theoretical study of the phenomenon and constitutes a singular working tool for actions at

different levels. For example, it constitutes a guide for further DFSA-related research since the influence levels establish a structured pattern that may prove useful for visualizing fundamental aspects of the victimization process. Similarly, the proposed framework also establishes a multi-level guide for coordinating the development of processes focused on prevention. Future well-targeted strategies against this form of sexual violence might be oriented in ways specified and ordered based on the classification of risk factors by levels of influence. As such, this new framework shows the existence of a reciprocal influence that highlights the important role of the individual and community empowerment, especially of young people, in the fight against victimization by DFSA.

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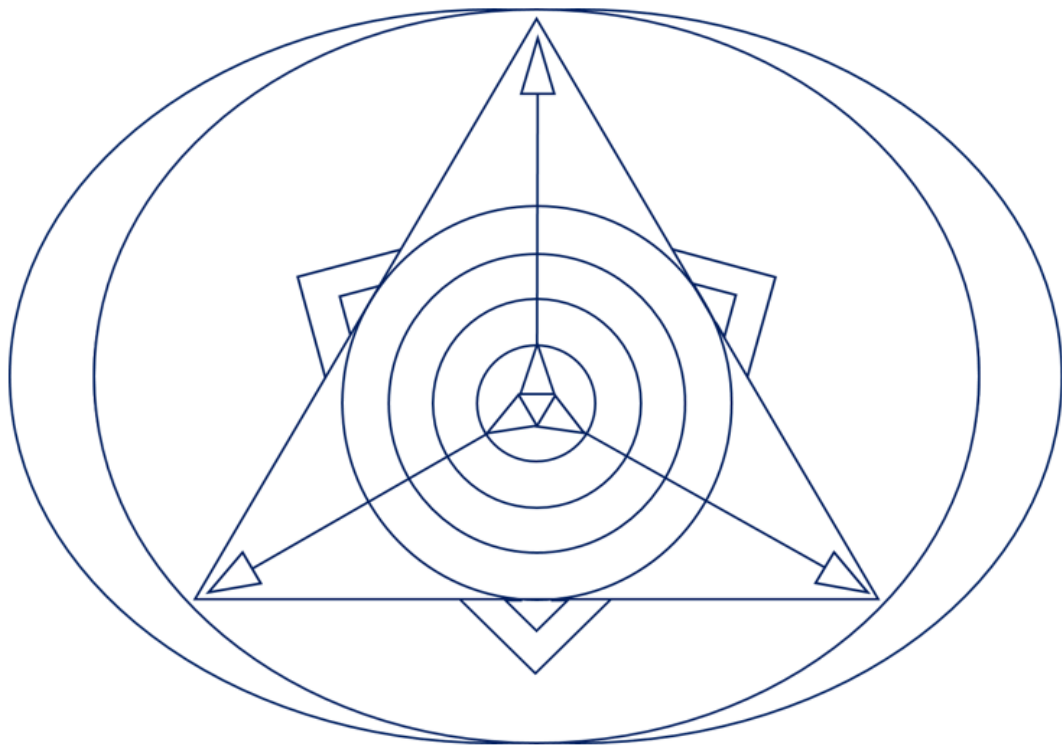
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CHAPTER 2

Generating Support: Cultural Dimension of DFSA



2.1. Increasing Awareness of the Severity of Female Victimization by Opportunistic DFSA: A New Viewpoint.

Main source:

Prego-Meleiro P, Montalvo G, Quintela-Jorge O, García-Ruiz C. Increasing awareness of the severity of female victimization by opportunistic drug-facilitated sexual assault: A new viewpoint. *J. Forensic Sci. Int.* 2020; 315: 110460. Online available at: <https://doi.org/10.1016/j.forsciint.2020.110460>

ABSTRACT

The victimization of women by opportunistic DFSA in leisure contexts was studied in this work by applying a novel approximation. A multifocal analytical strategy based on an intersectional gender-sensitive approach was used to analyse the evidence coming from both forensic case studies and contextual studies about sexual interrelation and drug use. The process of victimization comprises social changes affecting consumption patterns and sexual interaction, intersecting in the hegemonic recreational nightlife model. However, victims experience a range of situations that make it difficult for them to self-acknowledge themselves as such. Widespread myths about the victimization process add to the social questioning faced by victims, stemming from gender-based double standards, which condition the expected female behaviors regarding the use of drugs and sexual interaction. The victims usually experience amnesia, lack of injuries and emotional harm, which make difficult the self-acknowledgement as a victim of sexual assault and the reporting of the episode suffered. Consequently, it is an urgent public health need to implement a new viewpoint about the victimization of women by opportunistic DFSA in leisure contexts, able to increase awareness of the severity of this form of sexual violence. Society must recognize the existence of this problem within itself to help victims to acknowledge themselves as such, lodge a complaint and seek adequate help. The lack of this social support feeds the perpetuation of the victimization process, which exacerbates the risk of locking victims into spirals of cyclical re-victimization and favors both the underreporting as well as inadequate coping strategies. In addition to focusing on the need to increase awareness of the severity of female victimization by opportunistic DFSA in leisure contexts, other recommendations include the use of the term “take advantage”, the development of specific criminal approaches, and the in-depth knowledge of the phenomenon via victimization surveys. These steps are necessary for developing well-targeted and evidence-based preventive measures consistent-with-reality.

INTRODUCTION

Sexual violence entails all unwanted sexual acts, attempts, comments, or insinuations and constitutes a severe global public health problem [1], mainly affecting women [1–3]. One in ten European women has suffered some form of sexual violence since the age of fifteen, and one in twenty has been raped [4]. Around 2.0 % have suffered some form of sexual violence in the last year [4], a very similar figure to that observed in Spain, where 14 % of women aged 16 or older have experienced sexual violence at some time in their lives [5]. Likewise, studies in Spain and other countries agree that young women suffer the highest rates of sexual violence [1,5– 10]. Sexual violence is complex and comprises among other factors the use of psychoactive

substances, whether they be legal or illegal abuse drugs, medical therapies, or other. The mediation of psychoactive substances in sexual interaction is a recurrent phenomenon throughout history [11]. However, this mediation is subject to modifications as social changes occur which affect consumption patterns and sexual interaction. In this sense, various studies observed significant changes in female consumption patterns, especially among younger women, with a decrease in the gender gap in recent decades [12–16]. From the intersection between psychoactive substance use and sexual violence it arises the phenomenon of substance-mediated sexual violence, so-called DFSA [17]. In the United States, 11 % of women over the age of eighteen have been raped at some time in their lives while they were incapacitated by alcohol or other drugs, and 1 % in the last year [3]. In the UK, 38 % of victims who reported having been raped at some time in their lives since the age of 16 said they were under the influence of alcohol the last time they suffered a rape [2]. Victimization by DFSA is differentiated into opportunistic or proactive, depending on the modus operandi used by the assailant [18]. In opportunistic assaults, the assailant takes advantage of a state of incapacity resulting from the voluntary use of substances by the victim. In turn, in proactive assaults, the victim's state of incapacity results from involuntary consumption because of the assailant having administered a substance to the victim in a covert or forced way [18]. Case studies in multiple countries observed that victimization by DFSA especially affects young women, mostly through opportunistic assaults following voluntary alcohol consumption [19–24]. Youth leisure has been observed as the main context of victimization by DFSA [23,25–28], although several authors recommend further study [25,29–33]. According to the hunting model, sexual opportunism fits the characteristic behavior of sexual assailants, who select their victims based on their level of vulnerability or their ability to resist an assault [34–36]. The concern of the international community for the DFSA phenomenon is noted in initiatives by its criminal prosecution. The International Classification of Crime for Statistical Purposes (ICCSP) includes drug-facilitated rape in the injury acts of a sexual nature [37], and official guidelines have been published for the forensic analysis of drugs facilitating sexual assault [38]. Moreover, current global challenges documented in the 2030 Agenda for Sustainable Development include the elimination of sexual violence against women [39]. The identification and recognition of all forms of sexual violence is a current demand for the achievement of this challenge [40]. The lack of recognition of a specific form of violence hinders its solution and favours its perpetuation. In this sense, the 2030 Agenda precisely coins the motto "no one will be left behind". However, regarding the DFSA phenomenon, there is a deficit in the study and understanding of opportunism, despite it being the main type of victimization. This situation probably results from a focus of attention being deviated from the predominant reality. In this sense, many studies alert about the existence of

an alarmist media coverage around the proactive variant of DFSA, which are turning attention away from opportunism [19–22,41,42]. Therefore, an adequate study and recognition of victimization by opportunistic DFSA and the difficulties faced by victims is an urgent need. For this purpose, the Spanish environment is a useful framework, where the hegemonic recreational nightlife model prevails [43], combining a pattern of leisure based on the culture of self-intoxication and a model of immediate sexuality [44]. The analysis can help to better understand a problem resulting from the intersection of global influencing factors, such as the use of psychoactive substances and sexual violence, obtaining conclusions transferable to other communities sharing the same recreational model. This study aims to deepen the understanding of the victimization by opportunistic DFSA, how it originates, and how it perpetuates inside the society. In order to encourage the implementation of a new viewpoint in light of the phenomenon, able to increase awareness of the severity of female victimization by this form of sexual violence.

MATERIALS AND METHODS

A multifocal analytical strategy was implemented to achieve an in-depth study of victimization by opportunistic DFSA. For this, an intersectional gender-sensitive approach was applied to the analysis of the intersecting dimensions within the phenomenon. The multi-causality of violent phenomena usually results in research framed into separate fields of knowledge. However, this fragmentation hinders a more unobstructed view of the intersectional nature of the problem. To avoid this limitation and achieve a comprehensive approach, the implemented analytical strategy applied various approaches recommended by international authorities for the study of violence. Firstly, intersectionality is required for the study of population groups in which multiple vulnerability factors intersect, according to the global challenge of “no one will be left behind” pursued by the Agenda 2030 [39]. Likewise, the active integration of a gender-based perspective, promoted by the Beijing Declaration and Platform for Action in order to develop knowledge and understand the causes, consequences, and mechanisms of violence against women [45]. The generation of proper knowledge that enables us to deal with inequalities, discrimination, and unfair power relations is a recognized need worldwide [46–48].

Initially, the Spanish environment was used as a framework for the contextualization of the study. Information about the Spanish experience related to the DFSA phenomenon was collected through a comprehensive search on three different types of knowledge platforms and scientific databases. First, a search was performed on Scopus and Web of Science. Then, in the national scientific databases “*Información y Documentación de la Ciencia en España*”

(ÍNDICES-CSIC) [49], the platform “Recolector de Ciencia Abierta” (RECOLECTA) [50], and “*Índice Bibliográfico Español en Ciencias de la Salud*” (IBECS) [51]. Several Spanish and English keywords were used as search terms: drug-facilitated sexual assault, chemical submission, chemical vulnerability, crimes against sexual freedom, sexual violence and drugs, sexual violence and alcohol, sexual assault and drugs, alcohol and sexuality, drugs and sexuality, *burundanga*, and escopolamine. This particular drug has attracted much attention by the Spanish mass media causing misconceptions about the phenomena. Thirdly, the online repositories of the Government Delegation for the National Plan on Drugs (GDNPD) of the Ministry of Health [52], and the Government Delegation against Gender Violence (GDGV) of the Ministry of Equality were also reviewed [53].

Regarding the selection criteria, to get a comprehensive insight over time, there were no limitations on the publication date range for the literature search. Included document types encompassed original research articles, reviews, notes, and letters. The search was refined by country and limited to Spain. After this initial search, the reference lists were also reviewed to identify additional relevant literature. As such, this review focuses on various types of studies, including those about the casuistry of the DFSA phenomenon, studies about risk factors to the sexual victimization of adolescents and young people, as well as studies concerning the recreational habits of these population groups, especially, the dynamics of drug use, sexual interrelation, and the combination of both spheres. Likewise, various authors have pointed out the similarity between the DFSA phenomenon in Spain and the situation from other neighbouring countries [23,54]. Working in this line, to generate conclusions transferable to other communities sharing the same recreational model, the analysis of the Spanish reality was complemented by examining similar studies from other countries. These other revised works also encompassed case studies, as well as researches about sexual victimization within recreational contexts combining drug use and sexual interrelation. Fig. 10 illustrates the multifocal analytical strategy applied.

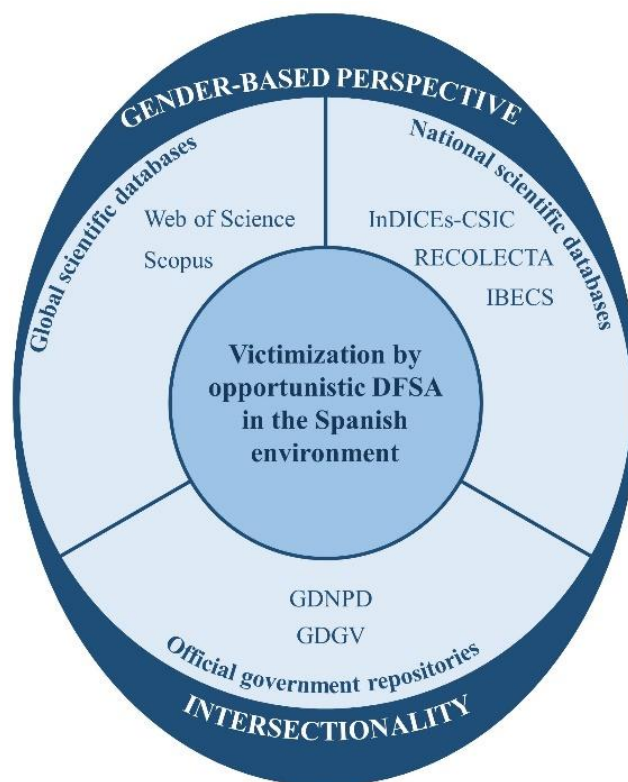


Fig. 10. Multifocal analytical strategy focussing the study of victimization by opportunistic DFSA in the Spanish environment. The comprehensive search was based both on national and global databases, as well as official government repositories.

RESULTS AND DISCUSSION

Several critical aspects of victimization by opportunistic DFSA were addressed. Firstly, the main profile and context of victimization were approached for properly focussing the study. Then, the original shaping frame was analyzed, studying the dynamics of the consumption of substances, sexual interaction, and substance-mediated sexual interaction. This was followed by an analysis of the difficulties experienced by the victims of opportunistic DFSA for their self-acknowledgement as such. Subsequently, the mechanism for the perpetuation of this type of sexual violence was studied, together with the observation of how this violence may also affect other vulnerable profiles.

This study encompassed an in-depth review of one hundred and fifty-one publications, which involved sixty-eight studies realized in Spain and eighty-three articles from other countries. Special attention was paid to forensic studies focussed on the research of the casuistry of DFSA, which included studies of alleged sexual assaults reported to the judicial authorities [23,24,41,55–66], and studies on alleged DFSA cases attended at sexual assault treatment centers [20,21,28,42,67–75]. The remaining reviewed studies focussed on the risk factors to the

sexual victimization of adolescents and young people, especially concerning their recreational habits in leisure nightlife contexts, such as the dynamics of drug use and sexual behaviors. As described along the following sections, the vast majority of these studies used youth students from secondary-school education and colleges as study samples.

1. Initial approach to the victimization by DFSA.

The evidence-based study of the DFSA phenomenon is mainly framed in forensic casuistry in Spain. There are several retrospective reviews of alleged cases reported to the national Administration of Justice, including three studies of time intervals [23,55,56] and two specific case studies [57,58]. Other works reviewed alleged cases attended in hospital emergency services, including a prospective review [28] and five specific case studies [67–71]. Regarding judicially confirmed cases, another study reviewed the convictions for this crime between 1999 and 2016 [59]. The main profile, context, and spatiotemporal location of victimization by DFSA are structured and described below.

1.1. Profile of victimization by DFSA: gender and age.

The vast majority of victims were women, with percentages of 91 % [28], 97 % [55,56], and up to 100 % [23] in the reviews of time intervals. The studies on specific cases add up to eleven victims, including four men in three studies [57,69,70]. Women were 96 % of the judicially confirmed victims [59]. Other studies in forensic institutes and victim care centers from several countries also observed the oversized female victimization [19], with values between 92 % and 100 % [20,60–62,65,73,75]. Others directly analyzed women samples [21,24,63,74,76]. Regarding the age, victims in Spanish studies had average ages between 23 and 27 years old [23,28,56], as well as in the studies from other countries [21,24,60–62,64,65,72,73,77]. All alleged assailants were men in various national and foreign studies [23,65,67,68,71]. Male assailants reached 99 % in judicial convictions [59].

1.2. Context and spatiotemporal location.

Many studies point to the generation of risk for sexual victimization in contexts related to alcohol consumption, because of an increased likelihood of contact between intoxicated women and potential assailants in the absence of capable guardians [26,27,78,79]. The prevalence of leisure settings reached 91 % [28] and 42 % [23] in Spanish studies of alleged DFSA cases. Specific national case studies also observed this relationship [67,69,71], as well as studies in other countries [41,76,80]. Regarding the time of year, a higher incidence was observed in the summer months [23,24] and in December [56,72], which was associated with a higher probability of

socialization in festive seasons. In this line, several studies observed that approximately half of the assaults happened on weekends [28,42,56]. Moreover, the vast majority of attacks occurred at night or early morning [21,28,60]. On the other hand, some studies in highly visited cities observed the particular victimization of tourists, which related to a greater vulnerability of tourists in nightlife contexts. Thus, 73 % of victims were foreigners in Florence [74] and 66 % in Barcelona, where 23 % were tourists [28]. In addition, recent studies in Spain indicated male victimization by DFSA in recreational contexts linked to “*chemsex*” or the use of drugs to facilitate sexual encounters between men [57,70]. Concerning convictions, 63 % happened on weekends and 65 % at night or early morning [59].

2. Shaping the original frame of victimization by DFSA.

After considering the main profile and context of victimization by DFSA, the analytical intersectional approach was applied to the study of the phenomenon. In light of this intersectional focus, Fig. 11 schematizes in an orderly and easily viewable way the original shaping frame of sexual interaction mediated by psychoactive substances in the hegemonic recreational nightlife model. As such, according to most of the known cases, leisure nightlife is the contextual framework wherein the victimization process usually happens. The context shaped by the current model of leisure is the framework where sexual interaction and the use of drugs are combined, resulting in the generation of a sexual interaction mediated by substances, both legal and illegal. The scheme shown in Fig. 11 provides valuable guidance to structure the intersectional nature of this study along the following sections. Each of the four geometric intersecting shapes represents various key factors contributing to the process of the victimization by opportunistic DFSA in leisure contexts.

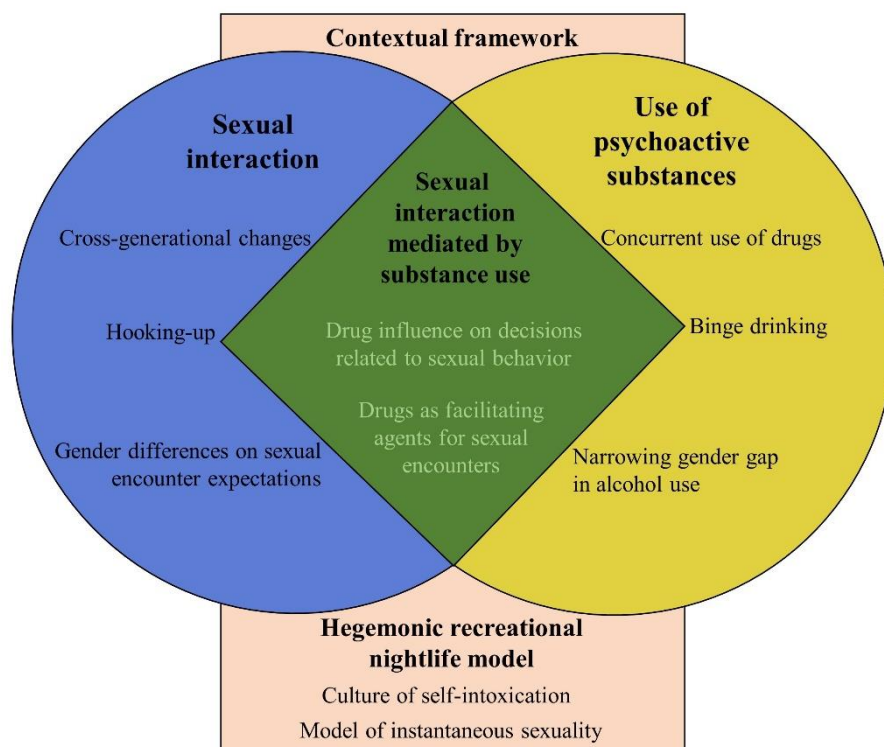


Fig. 11. The original shaping frame of sexual interaction mediated by substance use in the hegemonic recreational nightlife model.

2.1. Contextual framework: the hegemonic recreational nightlife model.

The prevalent youth leisure model in Spain shares the paradigm common to other European countries: the dynamic known as the hegemonic recreational nightlife model [43] or "going out", which combines the use of psychoactive substances with entertainment [81]. A "culture of self-intoxication" was observed in Spain [44], resulting from the consolidation of drinking patterns of large amounts of alcohol in a short time or "binge drinking" [82–84], realized in consumer-oriented meetings commonly known as "*botellón*" [43]. A Spanish study with young people aged between 18 and 24 observed that 60 % of the individuals regularly consumed alcohol in high doses, and more than half got drunk during their leisure outings [85]. Around 23 % of students between 14 and 18 practiced "*botellón*" during the last month, and 60 % of them got drunk in that period [86]. On the other hand, in addition to substance abuse, youth socialization in a leisure context is also closely related to sexual experimentation [43,87]. For around 30 % looking for sex it is an important motivation to participate in this recreational model, where young people join with the expectation of a sexual encounter. Thus, 25 % of the students between 14 and 18 who participated in some "*botellón*" during the last month did so because it helps them to flirt [86]. Sexual experimentation in this paradigm of leisure is characterized by the interrelation with multiple partners [88], in coherence with a "model of instantaneous sexuality"

focused on the immediate satisfaction of pleasure through sexual interactions without emotional ties [87]. These patterns promote sexuality as one more consumption object, similar to what occurs with the use of psychoactive substances. This sexual dynamic is substantially more aligned to male than female expectations for sexual encounters. The association between sex and emotional bond to deepen as relationship predominates among women, while the satisfaction of pleasure prevails as the expectation for sexual encounters between men [89–93]. Involvement in this leisure model increases the likelihood of sexual encounters under the influence of psychoactive substances [94]. One study observed that 21 % of men acknowledged having competed on some occasion to see who had more sexual relationships in one night, compared to 4% of women [95]. At the same time, during the last decades, women have been integrated into this leisure model and joined the "culture of self-intoxication" [44]. In this sense, between students from 14 to 18 years old, women engage more in "*botellón*" than men [86]. Another study observed that 88 % of women aged 18–29 stated they go out to consume alcohol, 10 % admitted drinking a lot, 66 % the average amount, and only 23 % said they do not drink [96].

2.2. Use of psychoactive substances.

The vulnerability resulting from the effects of psychoactive substances voluntarily used is one of the defining factors of victimization by opportunistic DFSA. Down below, several dynamics of consumption were reviewed, focussing on young women as the main profile of victimization identified in leisure contexts.

i. Alcohol risk consumption among young people and gender differences.

Around the world, indicators of psychoactive substance use are especially high in young people, peaking between 18 and 25 years of age [97]. The population aged 15– 24 has the highest prevalence of excessive alcohol consumption [15]. In Spain, 36 % of people in that age range got drunk in the last year and 15 % in the last month [98]. For both time frames, the prevalence of binge drinking increased by more than 2% among students between 14 and 18 years of age. In this group, 24 % got drunk in the last month, and binge drinking reached 43 % among those who consumed alcohol in that period [86]. On the other hand, in many western countries, the gender gap in the use of psychoactive substances has significantly narrowed during the last years in younger generations, even disappearing among adolescents [12,16]. This variation has been observed mainly for alcohol, both globally [13,14] and in Europe [15]. An explanation for this decrease in the gender gap are the changes in environmental and socio-cultural factors influencing women and their accessibility to the use of psychoactive substances [12,15,16,99].

In Spain, among students aged from 14 to 18, alcohol consumption during the last month and the last year was higher in women [86]. The gender gap in the prevalence of alcohol use decreased since 17 % among the population with ages between 15 and 64, to 9 % between 15 and 24 [98]. In this way, similar results were observed by other studies with young students [100,101]. Recent official studies with students from 14 to 18 showed a significant increase in the prevalence of binge drinking in the last month, which was higher among women than men [86]. The prevalence of drunkenness during the lifetime, the last month and the last year, was also higher for women, with more top differences between genders at 14 and 15 [86]. Another study in students aged 12–19 also found that girls got drunk more in the past year [102]. Over the past decade, the prevalence of binge drinking has especially increased among women aged 15–35. In the subgroup from 15 to 24 in 2017, binge drinking in the last month reached 18 % in men and 12 % in women. These values double, in the case of men, and triple, in the case of women, the observed data for the population as a whole [98].

ii. Use of sedative-hypnotic therapeutic drugs.

As with alcohol, sedative-hypnotic drugs of medical use are legal substances, so they present greater accessibility [86], an essential factor related to their higher consumption by women [12,16]. In this sense, at a global level, the use of prescription or over-the-counter sedative-hypnotic drugs is especially widespread among women [103]. This observation also occurs in Spain, where the prevalence increases with age, standing at 8 % among women from 15 to 34, and rising to 9 % from 25 to 34 [98]. In turn, there is an upward trend in the use of sedative-hypnotics among women students from 14 to 18. Around 21 % have consumed them on some occasion with or without a prescription, while 10 % have done so without a prescription [86]. Moreover, at 18 years of age, the ever use of sedative-hypnotics with or without prescription increases to 32 %, and 15 % for sedative-hypnotics without prescription [86].

iii. Concurrent use of drugs.

The concurrent use of more than one psychoactive substance is an important feature of drug use [97], a pattern especially widespread among those who practice binge drinking and get drunk more frequently [86,98]. In Spain, 32 % of female students aged from 14 to 18, and 44 % of those aged 18, used different drugs concurrently in the last month [86]. On the other hand, sedative-hypnotics, especially without prescription, are often combined with other substances [98]. The prevalence of concurrent consumption of drugs among those who use sedatives without a prescription reaches 93 % [98]. Around 24 % of women who consumed sedative-hypnotics without a prescription in the last year combined them with alcohol or other drugs

[98]. Another study with students from 12 to 19 found that the combination of medications with alcohol was higher among women than men [102].

2.3. Sexual interaction.

As shown in Fig. 11, after drug use, sexual interaction is the second dimension intersecting within the contextual framework shaped by the current model of leisure. The following sections study some essential social changes that affected sexual interaction over the last years, the different expectations from sexual encounters based on gender, and the effects of drugs on decisions related to sexual behavior.

i. Cross-generational changes related to sexuality.

Sexual interaction of Spanish youth experienced important changes over the last decades [87,95,104], with the duplication of young people from 15 to 17 with sexual experience [87], the trend to have a higher number of sexual partners [105], and a decrease of the age of sexual debut [101,104,106–113]. The “model of instant sexuality” is defined in this context, based on specific sexual encounters, without emotional ties, and looking for immediately satisfying pleasure [87]. This sexual dynamic fits the pattern known as “hooking up”, consisting of sexual encounters between people who are strangers or casual friends and engage in sexual behaviors with no commitment to a future relationship [114]. Several studies pointed hooking up as a frequent behavior between young people [115,116]. These encounters can be spontaneous, or someone may plan to hook up with another person without previously knowing the sexual partner [116,117]. On the other hand, social changes in sexual patterns involve both men and women, so there is a trend towards similar behaviors and consequently narrowing the gender gap related to sexual interaction [118]. Women are approaching the stereotype of male sexual behavior [95]. Lower age of sexual debut and a higher number of sexual partners is being observed among younger female cohorts [104].

ii. Gender differences in sexual encounter expectations.

Expectations before a potential sexual encounter differ significantly between women and men. Among women the association of sex with love predominates, as well as emotional bonds based on trust and fidelity focussed on deepening as couple relationship, while among men desire, physical attraction, and satisfaction of pleasure prevail [89]. Several studies with university students from different countries also observed a greater male tendency towards casual sex [119], hooking up [114,115], and sexual goals as the primary motivation for dating [119,120]. Similarly, it was also noted the highest female prevalence of companionship, intimacy, and

having fun as relationship goals for dating [119,120]. Women expressed less comfort than men with hooking up [115]. Moreover, this type of encounter was especially associated with feelings of sexual regret, shame, and depression in women [114,116].

ii. Drugs influence on decisions related to sexual behaviour.

Intoxication by psychoactive substances causes brain disorders similar to cognitive deterioration by chronic abuse or injuries at the frontal lobe [121]. Drug-related disorders increase vulnerability to potential assaults by disturbing the decision-making process [122,123], hindering the perception of potentially risky situations, and growing euphoria, disinhibition, and lowering self-control. Therefore, it enhances the probability of engaging later regretted intercourse, as well as the inability to repel unwanted sexual advances, increasing the risk for sexual assault.

2.4. Sexual interaction mediated by substance use.

Sexual interaction mediated by drugs emerges as an intersectional phenomenon within the contextual framework shaped by the current youth leisure model, from the combination of sexual interaction and substance use (Fig. 11). The following sections analyse the prevalence of sexual intercourse under the effects of psychoactive substances among young people, perceptions about drugs as facilitating agents for sexual encounters, and the opportunistic sexual interaction mediated by drugs.

i. Sexual intercourse under the effects of psychoactive substances.

Several studies analyzed the prevalence of sexual intercourse under the effects of substances among Spanish young people. In a sample of students from 14 to 18, 52 % reported sexual intercourse under the influence of drugs, 48 % of whom were under the influence of alcohol [124]. Another study with university students observed that lifetime prevalence of sexual intercourse under the influence of drugs increased from 0.4 % to 20 % between 1999 and 2008 [100]. Similar studies detected a lifetime prevalence from 50 % to 60 % concerning having had sexual intercourse under alcohol effects [125]. The highest known value reached 77 % in a sample of people from 14 to 25 who frequented recreational nightlife and consumed alcohol or other drugs [94]. The lifetime prevalence of sexual intercourse under the effects of drugs other than alcohol reached 18 % in another study with college students [125]. Meanwhile, another study reported 16 % of sexual intercourse under the effects of cannabis and 7 % under other substances, mainly cocaine [126]. In turn, among students from 14 to 18, the lifetime prevalence of sexual intercourse under the effects of cannabis and cocaine reached 23 % and 1 %, respectively.

respectively [124]. The lifetime prevalence of sexual intercourse under cocaine effects reached 55 % between people from 14 to 25 who frequented recreational nightlife and consumed alcohol or other drugs [94]. Concerning last-year prevalence, values around 6 % were found among students from 12 to 19 [89,102]. On the other hand, another study observed that 9 % of students within a sample aged from 12 to 17 had used drugs just before their first sexual intercourse. Alcohol consumption at that time increased to 12 % among college students. Another recent study observed that 14 % of students from 14 to 20 had used drugs during their last intercourse [118]. Furthermore, concerning regretted sexual intercourse, a study observed that 4 % of those who undertook binge drinking during the last month had sex on some occasion due to the use of drugs that they otherwise would not have had [98]. The regret due to sexual intercourse under alcohol effects increased by up to 11 % within a national sample of women from 18 to 29 [96]. At the same time, for studies framed in a nightlife context, 4 % of a sample of students from 13 to 19 reported that they usually regret their sexual interrelations the day after a party night [95]. In the same context, the regret for intercourse under drug influence was 8 % for young people among 15–35 in Portugal [122]. At European level, regret reached 15 % among those who got drunk in the last month. In this study, regret in the last year reached 26 % among cocaine users during the previous month, 21 % among cannabis users, and 32 % among ecstasy users [123]. In Spain, within a sample of young people from 14 to 25 who frequent nightlife leisure, 18 % regretted relationships under alcohol effects during the last year [94]. In turn, in another Spanish study, 12 % of cocaine users during the last month from 15 to 34 regretted intercourse [98].

ii. Perceptions about drugs as facilitating agents for sexual encounters.

Among young people, a strategic view of drug use for sexual interaction prevails [123]. They regard psychoactive substances as facilitating agents for sexual encounters [127]. Alcohol predominates as the best perceived substance to gain confidence and facilitate interaction with potential sexual partners [87,127]. According to a recent study, 81 % of women thought that alcohol removes barriers to having sex [96]. Around 28 % of students from 14 to 18 who got drunk in the last month, did so because it helps them to flirt [86]. On the other hand, psychostimulants, such as cocaine, are positively valued for engaging in risky sexual experiences and prolonging the sexual relationship [87,127]. However, in the sexual sphere, the facilitating effects of psychoactive substances on third parties are also valued. Men perceive female alcohol consumption as a sign of sexual availability in women, identifying alcohol acceptance as a suggestion of promiscuity or predisposition to sexual interaction [128]. In this way, the use of alcohol becomes a strategy to reduce feminine resistance, and female drunkenness or

intoxication is viewed as an advantage to achieve the sexual activity [87]. Men further justify alcohol use to force non-consensual sex [128]. Likewise, the predisposition to the intentional use of substances to facilitate sexual assaults increases significantly among both young men and women when they are under alcohol effects [129].

iii. Opportunistic sexual interaction mediated by psychoactive substances.

Opportunism is the behavior whereby every situation is used to try to get advantage [130,131]. In this sense, attitudes considering drugs as facilitating agents for sexual interaction show consumption as a trigger factor for opportunities to achieve sexual encounters (Fig. 11). With this in mind, various strategies can increase the probability of sexual interaction, including those taking advantage of incapacitation derived from voluntary use of drugs. In this sense, looking for people experiencing disabling effects could be an option for a potential assailant, as well as the strategies based on inviting to voluntary consumption. These opportunistic approaches overlap with the behaviors observed among sexual offenders and match with hunting models, under which assailants select victims based on their level of vulnerability or their ability to resist an assault [34,35,36,132]. Exploiting the victim's inability to resist is the coercive strategy that sex offenders acknowledge to use most frequently [133]. Regarding opportunistic strategies based on encouraging voluntary consumption, those involve an intentional effort to weaken the victim's ability to resist eventual sexual interactions, meaning actually a coercing consumption to facilitate relationships without consent [128]. This intentionality points to the existence of a sort of premeditated opportunism. In Spain, many male teenagers acknowledge using in recreational contexts the strategy based on encouraging alcohol use to make contacts facilitating sexual encounters. Likewise, they usually think that the best way to flirt is to look for those who are under the influence of alcohol or other drugs [87]. Within a sample of university students from 17 to 25, 28 % of men acknowledged having tried to give alcohol to a woman to go further with her in the sexual sphere, and 3 % had sex with a woman using this strategy [128]. According to a similar study, 9 % of men acknowledged having used psychoactive substances to achieve sexual contacts [134]. However, the frequency of this strategy is higher, according to female perception. The percentage of women who acknowledged that a man had tried to give them alcohol to go further with them reached 44 %, while 1 % admitted having had intercourse after that [128]. Another study with young people from 18 to 27 in several European countries observed that 17 % of Spanish women reported having suffered sexual victimization by taking advantage of their inability to resist [133].

3. Difficulties in self-acknowledgement as a victim of opportunistic DFSA.

In parallel to the intersectional nature of the victimization by opportunistic DFSA (Fig. 11), attention must be paid to the difficulties faced by victims after suffering this type of sexual assault. In this sense, it is striking that women who suffer episodes of victimization by opportunistic DFSA experience a range of situations that make it difficult for them to self-acknowledge as victims of sexual violence, which influences their decisions about inability to communicate the violent episode suffered, not to report, and not to seek adequate help [135,136]. As such, the lack of complaints characterizes sexual crimes [59,137,138]. Multiple studies in several countries observed the high black figure affecting sexual violence, which is the difference between the real number of cases that happened, and those actually reported to the authorities [6,7,9,139–144]. In Spain, sexual assaults are the crimes with the lowest reporting rate, reaching only 30 % of victims [145]. The absence of complaints from women victims of sexual, physical or psychological violence reaches 65 % [5]. According to age, the distribution of complaints takes an inverted U shape, reaching a maximum of 37 % among female victims from 45 to 54, and only 17 % of younger women, from 16 to 24 [5]. Regarding victimization by DFSA, several studies in different countries have also drawn attention to the high lack of complaints [135,146,147]. In this sense, various factors affect the capacity of victims to self-acknowledge themselves as such and, consequently, to both report and seek help. Firstly, there are specific myths about the victimization by DFSA, related to the type of consumption and the substances involved. These misconceptions add to the social questioning faced by victims related to the violence suffered, within a sociocultural framework that maintains a double standard regarding the expected behavior by men and women with drug use and sex. In addition, victims suffer amnesia or difficulty to remember the assault because of the memory loss produced by the psychoactive substances involved. Moreover, the lack of injuries is usual, resulting from a lower use of force by assailants, as the victims do not resist due to them being disabled under the effect of substances.

3.1. Myths and misconceptions about the DFSA phenomenon.

Over the last decades, multiple authors have attracted attention to the existence of widespread media attention deviated from the reality of the DFSA phenomenon [19–22,41,42]. There have also been called for attention in Spain [23,54,148]. Perceiving as true the ideas that are actually far from reality involves a double risk. On one hand, it makes it difficult for victims to identify their own experience as a sexual crime, due to the event being far from the generalized or socially accepted idea. On the other hand, myths and misconceptions inhibit the perception of

the true risks for the general public and even for the professionals involved, which makes difficult effective prevention. The central myths specifically related to DFSA involve the type of consumption, used substances and the state of the victim during the assault. Other myths are common to other kinds of rape, such as the relationship between victim and assailant.

i. Dominance of “drink spiking”.

DFSA is classified as opportunistic or proactive based on the modus operandi used by the assailant [18]. Opportunism involves assaults after the voluntary use of substances by victims, whereas involuntary intake happens in proactive assaults, in which assailants covertly or forcibly administer substances to victims. Covert use refers to the surreptitious administration of substances, usually in drinks known as “spiked drinks” [19]. A common misconception holds that in most DFSA cases, the temporary disability experienced by victims result from involuntary consumption through covert administration. However, the evidence from several countries points out that most assaults are opportunistic and that covert administration is relatively infrequent [19,21,22,24]. One study about alleged DFSA cases in the UK confirmed the presence of unexpected substances at only 2 %, attributed to covert drug administration [41]. Nevertheless, a negative analytical result does not rule out involuntary consumption. Various factors can influence the underestimation of incidence based on analytical results, a key factor being the delay in reporting due to the disappearance of substances from the victim’s body. In turn, a positive analysis does not necessarily imply covert administration to perpetrate an assault [65]. In this way, the suspicion of involuntary consumption is a common criterion for trying to approximate the incidence of proactive DFSA. Using this criterion, other studies suspected covert administration in less than 1 % in the United Kingdom [20] and 3 % in France [149]. This suspicion increased to 22 % in studies from Norway [21], and 24 % in Spain [23]. In addition to these low values, other studies associated the suspicion of covert administration with the voluntary use of psychoactive substances by victims. In this sense, in a Canadian study of alleged sexual assaults, the suspicion of proactive DFSA was 21 %, of which 88 % had used alcohol immediately before the assault [42]. Another similar work in Australia identified suspected proactive DFSA in 17 % of cases, in 77 % of which victims had consumed alcohol immediately before the attack [65]. The Spanish case studies focused only on cases with suspicion of involuntary consumption, identified possible cases of proactive DFSA in 6 % [55], 11 % [56], and 31 % [28]. The last study also associated the suspicion of proactive DFSA with the previous voluntary use of psychoactive substances by victims [28]. Despite this, the classification of the case as proactive may be erroneous, even based on the victim's statements. The doubt or fear about whether to admit the consumption of drugs may lead to incomplete or inaccurate

descriptions [21,41,60,65,75]. On the other hand, court confirmation is another way of approaching the determination of the prevalence of opportunism versus proactivity. Convictions in Spain proved the covert administration of substances in 24 % of the sentences handed down between 1996 and 2016, while the assailant took advantage of the vulnerability derived from voluntary consumption in the remaining 76 % [59].

ii. High involvement of “date rape drugs”.

Another common misconception about DFSA is the association of covert administration with a specific group of substances called “date rape drugs”. This term was developed by the media to describe a group of substances used by assailants to intoxicate potential victims and increase their vulnerability to sexual assault [22]. Among others, this group includes substances like flunitrazepam, ketamine and GHB [21,22,41,42,66,150]. Scopolamine or “*burundanga*” is another substance frequently linked with DFSA by media in Spain and Latin American countries [151–153]. However, the evidence collected during the last two decades indicates that the involvement of these substances in DFSA is practically anecdotal [19,22]. The prevalence of GHB ranged from 3 % to 1 % in other various studies [61,62,73,154], being less than 1 % [24,41,74] or not detected [20,21,23,28,72]. Flunitrazepam detection was from 2 % to 3 % [154,155], less than 1 % [21,22,24,61,66] or not detected [28,41,62,72,73]. Regarding ketamine, various studies indicated a prevalence of less than 2 % [41,61,62,73] or no detection [21]. In Spain, only one study indicated the use of GHB in a specific case, although through symptomatic diagnosis [67]. No study detected flunitrazepam, and one study detected ketamine in 2 % of cases [23]. Concerning scopolamine, it has been documented in other forms of violence [156,157], but there are no studies with forensic evidence on its use in DFSA.

iii. All victims are sedated.

Incapacitation resulting from intoxication impairs decision-making, judgment, the ability to consent to sexual activity, and to resist unwanted sexual advances [65,74]. Symptoms usually related to this situation are sedation, hypnosis, confusion, drowsiness or unconsciousness, which are produced by sedative-hypnotics or depressant substances [24,158] and match with the effects expected from “*date rape drugs*” [76]. However, intoxication related to victimization by DFSA also involves other symptoms. Victims may even be awake and disinhibited, a possibility usually not covered by media [41]. Psychostimulants and hallucinogens also impair judgment, causing impulsivity, and altering the ability to make decisions affecting the sexual sphere. These substances disinhibit and increase the libido making victims more susceptible to sexual activity [41,61,159]. Cocaine, amphetamine, and amphetamine-type stimulants (ATS) are associated

with victimization by DFSA because of their ability for disinhibiting, increase sexual desire, and susceptibility to sexual interaction [76]. ATS include new psychoactive substances with a large prevalence in Spain, such as synthetic cathinones, which increase sociability and sexual arousal [57,63,76].

iv. Unknown assailant.

A widespread myth about rapes is that assailants are mainly people unknown to victims, an idea shared by 40 % of the Spanish population [160], despite only 19 % of rapes outside couples being perpetrated by strangers [5]. This misconception is extensible to the DFSA phenomenon. Studies from Spain and other countries observed that in most cases victims and assailants knew each other before the assault [23,55,56,60,146]. In Spain, assailants were recent acquaintances in 59 % [28] and 36 % [23] of the cases, and strangers in 15 % [28] and 21 % [23]. In other countries, assaults perpetrated by recent acquaintances reached 62 % [65], 24 % [60], and 17 % [136]; a friend was involved in 45 % [136] and 32 % [60]; the partner in 9 % [136] and 3 % [60,65]; and a stranger in 30 % [60], 15 % [65] and 8 % [136] of the cases. According to the study of Spanish convictions, 72 % of cases involved assailants whom victims knew already before the assault [59]. Regarding the number of assailants, despite the high media coverage of recently famous cases in Spain that involved group assaults [161,162], national studies observed only one assailant in all [23] or in most of the alleged assaults [28,56]. Specific case studies observed both only one [68,71] and several assailants [58,67,69]. Efforts are necessary to avoid the extension of new misconceptions related to sexual violence and DFSA. Studies from other countries also observed only one assailant in most cases [60,65]. According to the review of Spanish convictions, 87 % of cases involved only one assailant [59].

3.2. Social perception of sexual violence mediated by drugs.

Most of the Spanish population is somewhere between support and condemnation of sexist attitudes, sustaining more restrictive perceptions about the expected behaviors of women compared to men [160]. These attitudes tend to detract women's veracity when they become victims of violence, judging them based on personal characteristics, such as their drug use or sexual behaviors [160]. Various studies recognize the existence of a double standard related to alcohol consumption, observing different considerations based on gender, that is, depending on whether drug use is carried out by men or women [128,163–165]. Social sexist attitudes contribute to the toleration of the behavior of male assailants while blaming women for the violence they suffered [166]. In this sense, male consumption is associated with a loss of self-control that socially exempts men from responsibility for their violent actions [128].

However, women's use is associated with sexual promiscuity, which promotes blaming them for suffered assaults [128]. This situation leads female victims of DFSA to suffer greater social blaming when their intoxication resulted from the voluntary use of drugs. Up to 15 % of the Spanish population thinks a woman sexually assaulted while drunk is partly responsible for the assault because of having lost control, while 99 % consider it unacceptable to give substances deliberately to women to maintain sex [160]. In this way, women who were under the influence of alcohol at the time of the assault are socially viewed as responsible for the attack to a larger extent than sober women and receive less credibility [163–165,167,168]. On the other hand, concerning the use of substances by assailants, the attribution of violent episodes to consumption justifies the behavior of the aggressor, which implies tolerance towards violence [160]. In this sense, in Spain, 46 % of women and 50 % of men think that alcohol is often the cause of a man raping a woman [160]. Altogether, these perceptions condition the victim's ability to identify herself as such, which influences her decision not to communicate the episode, not to make a complaint, and not to seek adequate help [159,166], especially among the younger women [5]. In this sense, the prevalence of some sexist attitudes among women is striking. The total or moderate agreement with the perception that a woman sexually assaulted while drunk is responsible for the assault was 2 % higher among women [160]. Likewise, within a national sample of women from 18 to 29, 31 % acknowledged getting drunk occasionally to the point of not remembering anything that happened; however, the result rose to 56 % when asking about this behavior in the group of female friends [96]. This difference pointed out a higher own consumption than that initially recognized. The underreporting that affected initial answers relates to the double standard based on gender around alcohol consumption. Another study with students from 18 to 24 observed that women thought their family refused more alcohol use by females than males [108]. Society is responsible for the attitudinal, behavioural and relational development of young people [43]. In addition to the lack of adequate social support, the decision to not report or seek help is also influenced by distrust in institutions and shame in reporting a sexual event [159,166].

3.3. Individual difficulties: amnesia, lack of injuries and emotional harm.

Many victims of DFSA suffer total or partial amnesia, with difficulty for remembering the assault [41,62,65]. In Spain, a study observed 89 % of DFSA victims experiencing amnesia, compared to 20 % of victims from other sexual assaults [28]. In another study, amnesia affected 80 % of the cases that documented symptoms [23]. Specific case studies also observed amnesia or memory loss [58,67–71]. Studies from other countries confirmed amnesia as a common symptom in victims of DFSA. In Australia, 24 % of victims did not remember the episode, and 59 % had

imprecise memories [65], situations that affected 28 % and 53 %, respectively, in another similar study in South Africa [60]. The total loss of memories affected 37 % in another study conducted in Norway [21]. The confusion caused by amnesia can lead the victim to question the credibility of her own story. In this way, loss of memory reduces the probability that the victim report [150] and conditions investigation, declaration, and prosecution [65].

The minimization of the importance of the suffered violence is even more common when the assault leaves no physical injuries, so the lack of injuries makes difficult the identification of the episode as a reportable crime [166]. In this line, 57 % of Spanish women aged 16– 24 who were victims of sexual violence on some occasion did not consider the episode important enough to make a complaint [5]. Several studies observed that physical, genital or extra-genital injuries are less frequent when the victim is disabled [146,169]. According to a comparative study, 33 % of victims of incapacitated assault suffered physical injuries, vis-à-vis 57 % of victims of forced rape [169]. This difference results from the lower resistance exerted by an incapacitated victim with whom the aggressor would need less force, and the physical damage to the victim would be also less [169,170]. This lack of injuries affected about 45 % of alleged DFSA cases reviewed by two case studies in Spain [23,28]. This was also a common observation in specific case studies [58,67– 71]. A Canadian study did not observe physical injuries in 67 % of cases [171]. Regarding genital injuries, a Spanish study did not observe them in 82 % of the cases in which this parameter was documented [23]. The absence of genital and extra-genital lesions was 69 % and 38 %, respectively, in a study from Norway [21]; 43 % and 52 % in South Africa [60]; and 37 % and 30 % in Canada [146].

Emotional harm suffered by victims relates to the lack of communication of the violent episode [5]. Victims of sexual violence suffer significant psychological damage, and their mental health is severely affected, with intense feelings of sadness, low self-esteem, fear, insecurity, anguish, shame, and guilt [5,172,173]. These emotions can lead to anxiety and depression, seriously affecting the quality of life of the victims [172]. Around 86 % of victims of sexual violence acknowledge a significant affectation of their physical or mental well-being, while psychological and psychiatric consultations predominate among those seeking formal assistance [5]. However, the feeling of guilt prevails among the emotions experienced by victims of sexual violence, compared to other forms of violence. Up to 30 % of victims of sexual violence by partners or ex-partners experience feelings of guilt [5]. Concerning victimization by opportunistic DFSA, this high prevalence of feeling of guilt relates to the normalization of sexist social perceptions about the expected behaviors of women and men around drug use and sexual interaction.

3.4. Other profiles and contexts of victimization by DFSA.

Beyond leisure context and young women, other contexts and profiles of victimization by DFSA must also be studied so that no one will be left behind, as per the demands of the 2030 Agenda [39]. Since violence particularly affects the most vulnerable people [1], those with poor health conditions, such as people suffering disabilities or illnesses are especially vulnerable to violence. Their lower abilities to resist eventual assaults increase the risk of victimization, in line with the hunting model [34,78,174]. Regarding DFSA, in these cases, the usual limitations resulting from physical or intellectual disabilities add to the temporary incapacity produced by psychoactive substances. In a Spanish case study about alleged female victimization by DFSA, victims with physical and/or mental disabilities reached 10 % [23]. Although this value may seem low, it is substantively significant, taking into account the small proportion of people with disabilities in the studied population, about 19 % of the total women [175]. In this sense, the victimization of minority groups may be undervalued due to its low proportion in the population, as observed by a recent study about the sexual exploitation of girls with intellectual disabilities [176]. Moreover, victims suffering physical and/or intellectual disabilities or illnesses may experience increased difficulties as regards reporting or seeking help [176]. A lesser access to justice is also related to marginalization and disparagement by the police when reporting an assault [174,176,177]. In addition, intellectual disability may lead to a lack of understanding of the criminal meaning of sexual abuse [174]. Case studies of alleged DFSA in other countries observed physical or cognitive disabilities in 9 % [21], 6 % [171] and 5 % [73]. Previous mental health problems were observed in 44 % [21], 27 % [171], 25 % [73] and 12 % [60]. In another study, depression, anxiety, and physical illness affected 9 %, 4 %, and 15 %, respectively [60]. On the other hand, health problems often involve the use of psychoactive substances, following prescribed therapies, or self-medication. In this sense, 93 % of victims with disabilities in the Spanish study received psychotherapy for mental disorders such as anxiety or depression [23], so victimization by DFSA is suspected to be widespread among women suffering disabilities who are being treated for these types of disorders. Studies from other countries point in the same direction. Prescription drug use among victims amounted to at least 49 % in one study in Australia [65], while 29 % used them in another study in Canada [73]. When specifying by drug type, the use of antidepressants was observed in 11 % [60] and 7% [41]. In turn, victims used sedative drugs, such as benzodiazepines, in 16 % [41], 9 % [21] and 3 % [60].

3.5. Perpetuation of victimization by opportunistic DFSA.

Experiencing sexual assault is strongly associated with subsequent re-victimization [1,25,167,178–180] as well as with alcohol and other drugs abuse [181–188]. The intense emotional harm and mental health damage suffered by victims of sexual violence frequently lead to the development of addictive behaviors focussed on using psychoactive substances as an adaptive response [172,189,190]. However, coping strategies based on the use of psychoactive substances can trigger incapacitating effects on victims and increase their vulnerability to suffer new assaults. In this way, the temporality of voluntary consumption is a critical aspect of victimization by opportunistic DFSA. Consumption can be both an antecedent and a consequence of violence, contributing to both the appearance and maintenance [189,191–194]. On this basis, some authors propose a bi-directional connection between alcohol consumption and sexual assault [25,195,196]. Following this line, this study defines a spiral of cyclical re-victimization as a specific characteristic of victimization by opportunistic DFSA. Since the vulnerability resulting from the disabling effects produced by voluntary consumption is a defining factor of this type of sexual violence, coping strategies based on substance use can potentiate these spirals of re-victimization. Fig. 12 shows this concept, illustrating how an initial violent episode can be the preamble of subsequent assaults, a sequence capable of locking the victim into a dynamic of suffering by cyclic re-victimization. In this way, victimization by opportunistic DFSA tends to self-perpetuate through a positive feedback loop, especially affecting the most vulnerable people. Regarding re-victimization by DFSA, a Norwegian study about alleged DFSA cases observed that 40 % of victims had already suffered sexual assault previously [21]. This value was 4 % in another similar study in South Africa [60]. However, data about previous sexual assaults are not collected, so more research is necessary regarding cyclical re-victimization by opportunistic DFSA.

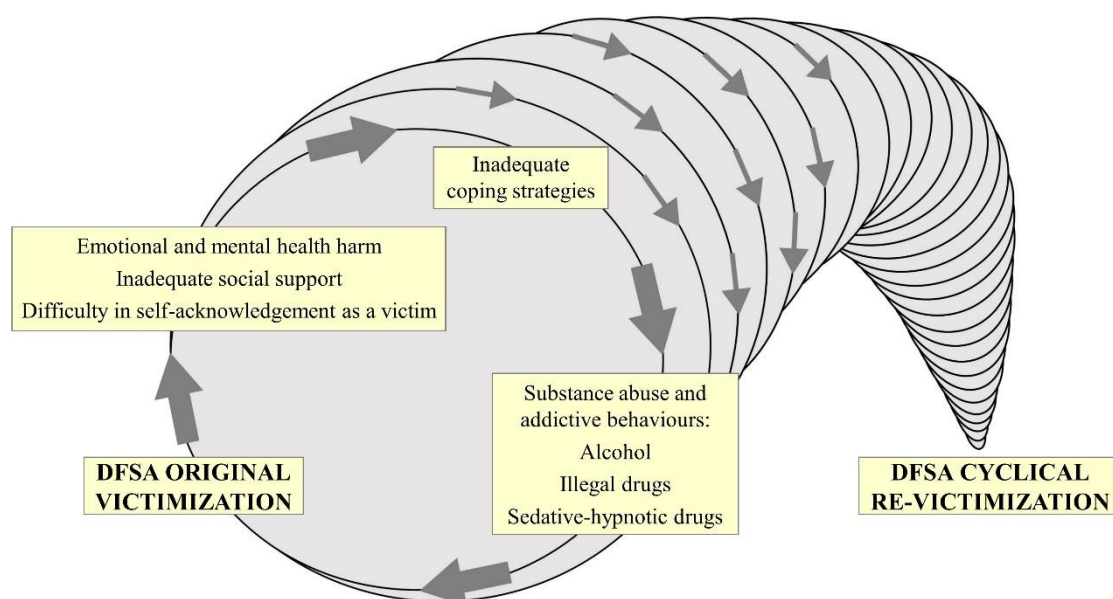


Fig. 12. The spiral of cyclical re-victimization by opportunistic DFSA. Inadequate social support and inadequate coping strategies lead to the use of psychoactive substances that can trigger incapacitating effects on victims and increase their vulnerability to suffering new assaults in a cyclical re-victimization process.

However, the accountability for the positive feedback loop that perpetuates violence goes beyond the specific experiences of victims and corresponds to the community within which such violence happens. In this sense, the perpetuation of the victimization by opportunistic DFSA results from the maintenance of a violent cultural background compounded by sexist social attitudes and a gender-based double standard on consumption and sexual interaction. Fig. 13 illustrates how the difficulties faced by victims in acknowledging themselves as such contributes to the perpetuation of the victimization process. On one hand, the lack of direct social support consequent to cultural violence feeds the perpetuation of the victimization process by favouring both the underreporting and inadequate coping strategies. Furthermore, underreporting involves injustice regarding past assaults, as well as a lack of proper knowledge about the real dimension and nature of the problem, which is necessary for accurate prevention. Likewise, this lack of knowledge about the phenomenon favours the preservation of the cultural violent background and sexist attitudes justifying assailants and blaming victims. In short, a breeding ground for new assaults and the perpetuation of victimization by opportunistic DFSA. On the other hand, inadequate coping strategies based on the use of psychoactive substances can lead to substance abuse and trigger incapacitating effects on victims, which increase their vulnerability to suffering spirals of cyclical re-victimization.

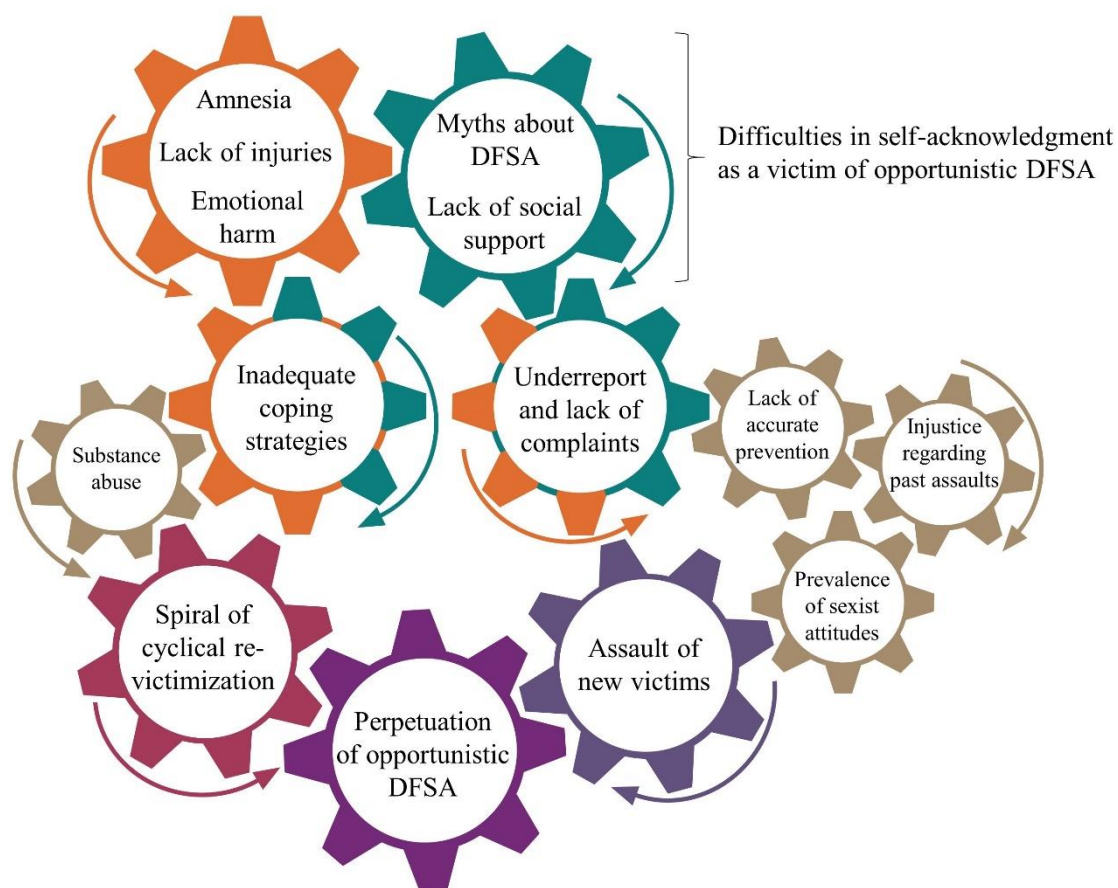


Fig. 13. The perpetuation of the victimization process by opportunistic DFSA from the difficulties faced by victims in acknowledging themselves as such.

In Spain, just as the distribution of complaints, the seeking of formal help among female victims of sexual violence after suffering an assault also takes an inverted U shape according to age. In this sense, more than half of the assaulted women from 16 to 34 do not seek help [5]. Consequently, regarding victimization by opportunistic DFSA in particular, which mainly affects young women, a lower percentage of requests for help is expected due to the convergence of specific factors, such as amnesia, the absence of injuries, and the widespread related misconceptions. Therefore, this observation suggests that the spiral of cyclical re-victimization by opportunistic DFSA could be a social problem of potentially high dimensions. This could be the case especially among young women, considering the hegemonic recreational model combining drugs use with opportunistic sexual interaction.

3.6. Increasing awareness of the severity of female victimization by opportunistic DFSA.

Breaking the perpetuation of sexual violence by opportunistic DFSA is possible. In the first instance, society must recognize the existence of this problem within itself. This is an essential

step so that society may be able to acknowledge victims of this form of sexual violence and that both victims, as well as assailants, recognize themselves as such. In this sense, from a public health perspective, the authors consider the implementation of a new viewpoint about the phenomenon as an urgent need. The victimization of women by opportunistic DFSA in leisure contexts is a severe form of sexual violence needing a specific recognition.

Although the mediation of psychoactive substances in human sexual interrelation is a recurrent phenomenon throughout history [11], this mediation is subject to modifications as social changes occur that affect consumption patterns and sexual interaction. In this sense, currently, the convergence of several key factors makes it necessary to take this step and implement a new viewpoint about the phenomenon, able to identify the gravity of this form of sexual violence, which is severely affecting the hegemonic recreational model.

The intersectional approach applied in this study allows visualizing the multiple factors configuring the victimization by opportunistic DFSA in youth leisure contexts, as illustrated by the opening of the junction box shown in Fig. 14. In the current model of leisure, the social changes involving both the use of psychoactive substances and sexual interaction intersect to give rise to a sexual interaction mediated by consumption. This dynamic favours sexual encounters under the effects of psychoactive substances. In this situation, the capacity for consent is severely compromised, facilitating an opportunistic sexual approach, which fits into male expectations based mainly on the satisfaction of the desire for sexual pleasure. Likewise, social changes involving drug use and sexual interaction coexist simultaneously with a gender-based double standard that condition the female expected behaviors regarding the consumption of psychoactive substances and sexual interaction. The six panels shaping the open box of Fig. 14 show the intersection of each of these dimensions, representing the configuration of victimization by opportunistic DFSA.

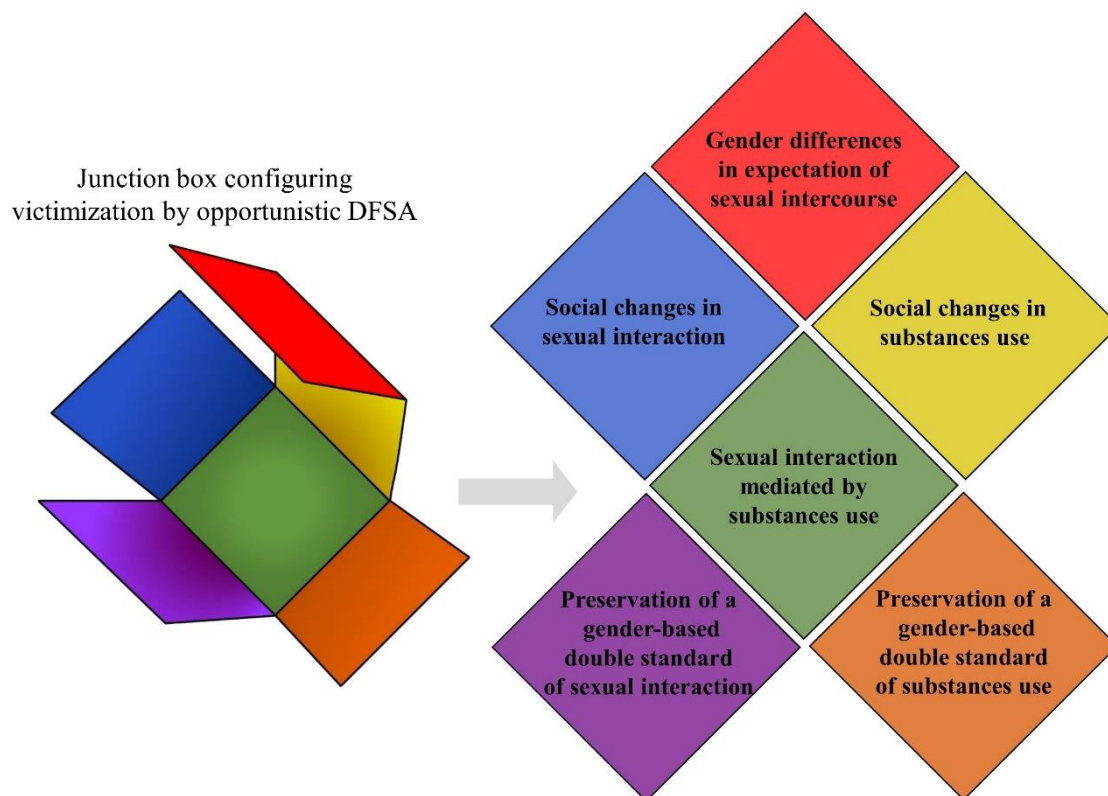


Fig. 14. Opening of the junction box configuring victimization by opportunistic DFSA by the analysis of intersecting dimensions.

Likewise, in order to get proper visualization and social awareness of this form of sexual violence, an alternative term is necessary to identify the phenomenon in a more accessible and easily recognizable way than the overly long technicality of "opportunistic victimization by DFSA ". An accessible name is expected to be useful in order to efficiently achieve a better awareness within adolescents and young people, who are the population groups primarily affected. The authors propose the term "take advantage" as an alternative name whose definition fits the nature of the opportunistic victimization by DFSA: "to use someone's weakness to improve your situation" [197], or "to make use of somebody in a way that is unfair or dishonest" [198]. Moreover, the popular usage of "take advantage" extends to situations when one person has sexual contact with someone who is semi or wholly unconscious due to the use of alcohol or other drugs [199].

CONCLUSIONS

The implementation of a new viewpoint about the victimization of women by opportunistic DFSA in youth leisure contexts is identified in this work as an urgent need in order to achieve progress in the fight against this form of sexual violence, primarily affecting young women. The recognition of this problem is an urgent public health need aligned with the global challenges of

the 2030 Agenda for Sustainable Development committed to the elimination of all forms of sexual violence against women [39].

The identification of the victimization by opportunistic DFSA proposed herein is consistent with the call to action encouraged by the United Nations through the current initiative UN75 2020 AND BEYOND, entitled “Shaping our future together” [40]. In this sense, society must recognize the existence of this problem within itself, as an essential step to be able to identify the victims of this form of sexual violence and adequately support them. Although mediation of psychoactive substances in human sexual interrelation is a recurrent phenomenon throughout history, it is subject to modifications as social changes occur that affect consumption patterns and sexual interaction. The social changes involving both the use of psychoactive substances and sexual interaction intersect in the hegemonic recreational nightlife model to give rise to a sexual interaction under the effects of psychoactive substances. In this situation, the capacity for consent is severely compromised, facilitating opportunistic sexual contacts, which fits the behavior of sexual assailants, who select their victims based on their level of vulnerability or their inability to resist an assault. At the same time, social changes involving drug use and sexual interaction coexist with gender-based double standards conditioning the expected female behaviors regarding the consumption of psychoactive substances and sexual interaction. As such, significant population sectors associate female use of drugs with promiscuity, justifying assaults, and blaming victims, meanwhile male consumption is perceived as a factor excluding assailants from liability. This sexist cultural background adds to the existence of widespread misconceptions about the phenomenon, and to other obstacles such as amnesia, the lack of injuries and emotional harm in victims. Altogether, these factors make it difficult for women victims of opportunistic DFSA to acknowledge themselves as such, reducing the possibility of reporting the episode and seeking adequate help. Consequently, victims may turn to coping strategies based on addictive behaviors and the abuse of psychoactive substances as adaptive responses to mental health damages. This situation may lead them to experience new situations of vulnerability which favour further assaults and, thus generating spirals of cyclical re-victimization by opportunistic DFSA. Breaking the perpetuation of violence corresponds to all the community within which that violence happens. The lack of proper social support feeds this perpetuation by justifying assailants and blaming victims, setting a breeding ground for future assaults and favouring both under-reporting and inadequate coping strategies. Furthermore, a particular affectation of people with physical or mental disabilities has been observed, an aspect requiring further attention so that no one will be left behind, as per the demands of the

Agenda 2030. Society, as a whole, possesses the potential and responsibility to end the problem and shape a better future together, as pointed by the initiative UN75.

Several recommendations are proposed in this work to tackle this form of violence. Firstly, an alternative term is proposed to refer to the phenomenon in a more easily recognizable way than the technicality "opportunistic victimization by DFSA", especially for preventive purposes to improve understanding and raise awareness among adolescents and young people. "Take advantage" is proposed because its widespread usage involves sexual contact with someone who is under the effects of drugs. Secondly, a specific penal approach, adjusted and sensitized to the phenomenon, is also necessary, avoiding the discrimination among victims of DFSA based on their voluntary or involuntary use of drugs previously to the assault. Finally, in-depth knowledge is required to properly deal with the problem. In this sense, the implementation of victimization surveys is encouraged to achieve a better knowledge of the real dimensions of the issue, which is necessary for the development of well-targeted and evidence-based preventive measures consistent-with-reality.

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2.2. Gender-Based Differences in Perceptions about Sexual Violence, Equality and DFSA in Nightlife Contexts.

Main source:

Prego-Meleiro P, Montalvo G, García-Ruiz C, Ortega-Ojeda F, Ruiz-Pérez I, Sordo L. Gender-based differences on perceptions about sexual violence, equality and drug-facilitated sexual assaults in nightlife contexts. *Adicciones*. 2021;0(2): 1561. Online available at: <http://dx.doi.org/10.20882/adicciones.1561>

ABSTRACT

Sexual violence, including DFSA, is a serious issue that is becoming increasingly common in leisure nightlife contexts. This study provides information about the attitudes and perceptions of Spanish youths towards sexual violence within that setting. The participants were recruited by a snowball sampling scheme. A bivariate analysis was performed to identify possible sociodemographic and nightlife recreational habit factors related to gender. The statistical significance of the differences between the studied variables was assessed using the chi-squared and Fisher's exact tests. Women perceived a low level of personal security, as well as the existence of social perceptions penalizing female more than male's drugs use, and blaming women for the sexual violence they suffer. Women also recognized less explicit violent behaviours as violence significantly more than men did. Men were more willing to have sexual intercourse with someone unable to express consent because of drugs. In addition, they believed more strongly that sexual assaults take place because of the victim's use of alcohol or other drugs. In a leisure nightlife context, women are prone to perceive a lack of social support for themselves and the feeling of impunity for the perpetrators. Furthermore, numerous misconceptions surround DFSA, with the majority of respondents believing that assaults happen after the surreptitious administration of substances to the victim by an unknown assailant. Moreover, the involvement of alcohol was underestimated. Our findings are useful for designing prevention efforts, demystifying the DFSA and enhancing social support for victims.

INTRODUCTION

Sexual violence is a form of interpersonal violence, typically directed towards women, that includes any sexual act, comments or unwanted sexual advances. As such, sexual violence represents one of the most serious public health and human rights problems-worldwide [1, 2]. Around 11 % of European women aged 18 to 74 years have suffered sexual violence at some point in their life, with 5 % being subjected to non-consensual sexual intercourse by restraining them or hurting them in some way [3]. By age group, young and college-aged women are particularly affected [4-6]. In Spain, according to recent research into violence against women in a university population [7], only 56 % of women and 42 % of men considered all the presented violent situations as violence. Likewise, in this country, the highest prevalence of sexual violence during the last year affected women aged 16-29 years [8]. However, most of the incidents of sexual violence are not reported, therefore epidemiological studies are of particular importance to gain some idea of the burden of this problem in different populations [9].

Perceptions, attitudes and social norms have been repetitively suggested as being contributors to sexual violence. This means to a marked extent that culture defines the boundaries between acceptable and abusive behaviours [10, 11]. Thus, cultural violence refers to culture aspects justifying direct or structural violence and repressing the victims' response [12]. In this sense, a society that does not perceive all kinds of sexual violence, not only will not repress and persecute it but, more importantly, will not be able to implement policies to prevent it, especially among young people [13]. There is a gap in the perception of definitions and causes of sexual violence, and also regarding the ideas about victims and offenders, between the general population and people actively involved in the field of sexual violence [14]. Indeed, studies concerning sexual violence show that the general population seem to identify specific acts, such as rape, as sexual violence but not the subtler forms, such as sexually degrading language (about women) or harassment [15]. These differences may be due, in part, to differing views of the causes of sexual violence [16]. In Spain, the only survey studying the social perception of sexual violence observed the invisibility of violent behaviours different from unwanted sexual intercourse. This study stated that most youths fall midway between rejection and tolerance to sexism, and also found significant differences in the perception of sexual violence between sexes [17]. However, this study paid little attention to the relationship between sexual violence and drugs use. There is currently a marked convergence in gender relations in leisure nightlife contexts that can increase the negative consequences for women [18-21]. Thus, young women have begun to impinge on traditionally male spaces in the absence of a true gender equality [22]. As an example, the prevalence of binge drinking has increased steadily in women since the second half of the 1990s, approaching the levels typically found for males [10].

Sexual violence also occurs when someone is unable to consent or to refuse a sexual approach due to the effects of psychoactive substances [11]. That is the case in DFSA [23]. This is an intersectional form of sexual violence [24] particularly common in recreational contexts [25-27] as these situations entail the convergence of potential victims, motivated offenders and lack of capable guardians [28]. In Spain, parties and festivals are considered as the main contexts in which sexual aggression against women occurs [17]. Nevertheless, little is known about either people's usual perception concerning DFSA or any gender-based differences in this perception. Cultural violence implies negative social reactions, including the victim's blaming, which makes self-acknowledgment of unwanted sexual experiences more difficult [29, 30], triggers psychological health problems in the victims [31, 32], and increases the risk of revictimization [33]. In that framework, this study suggests the following hypotheses: (i) the perceptions of equality, safety, and the risk of suffering

sexual violence in leisure nightlife contexts vary significantly between genders; (ii) there is a social gap between genders in the identification of some specific acts as sexual violence; (iii) the willingness to conduct sexual intercourse with someone unable to express consent because of drugs is greater among men than women; (iii) there are several widespread myths or misconceptions about the DFSA phenomenon, which significantly affect the social conception of this form of sexual violence; and (v) women experience a lack of social support in leisure nightlife contexts, resulting from the different social perceptions about the drug use based on gender.

In the context of equality, the modification of incorrect assumptions and cultural expectations about sexual violence is a key step to reducing this problem. For that purpose, the university is a special interest context because it shows the cultural environment of younger generations. Therefore, this work aimed to determine gender-based perceptions about different aspects of sexual violence in the leisure nightlife context, especially the normalization and justification of violence, paying particular attention to the role played by drug use. This aim aligns with the need to increase social awareness about the DFSA phenomenon as a form of sexual violence severely affecting women in the leisure nightlife context.

MATERIALS AND METHODS

Subjects.

The participants were recruited by a snowball sampling scheme using a closed two-phases online questionnaire. First, 229 students from the University of Alcalá (Spain) participating in the educational Project UAH/EV951 completed the questionnaire. These students were then instructed to send the same questionnaire to a minimum of ten contacts belonging to their immediate circle, using the instant messaging services available within social networks. The students involved in this phase were adequately instructed about the inclusion criteria of the study, i.e., being aged between 16 and 35 years and residing in Spain at the time of the study. Their participation was completely anonymous via electronic devices, such as mobile phones or computers. This process was carried out between October and December 2017. After the initial sampling, any participant which did not meet the requirements were excluded, reaching a final sample size of 2355 young people.

During the development of the study, before accessing the online questionnaire, all participants faced a previous page informing them in detail about the reason and purposes of the research, as well as the inclusion criteria of the study. Likewise, the topics addressed by the questionnaire were presented on that previous page before the participants could access the survey, and an estimate of the time needed to complete the questionnaire (15 minutes). Hence, the previous

page requested the participants a consent for their voluntary and anonymous participation before accessing the questionnaire, which constituted the positive consent for their participation. The access to the survey was provided only through a link available after the presentation of that aforementioned information. Special attention was given to the questions' design to avoid obtaining any identifying data from the participants. For instance, people were asked to report their age in years rather than their date of birth, and no questions about the place of residence place or the geographical origin of the participants were included. In addition, neither Internet protocol addresses nor cookies were collected. The evaluation commission of the "Call for Projects for the Promotion of Teaching Innovation in the Teaching-Learning Process" of the University of Alcalá (course 2017-18) approved the implementation of the project within which this study was framed (reference number UAH/EV951). The project approval within this institutional frame requires to complying with the ethical requirements.

Data Collection and Measures.

The variables studied were collected into four groups: sociodemographic; nightlife recreational habits, including drug use; perceptions about the sexual violence and equality in a nightlife context; and perceptions about DFSA also in the nightlife context.

Sociodemographic. Age was measured as a stratified variable following the most frequent ranges used in similar studies: under 18 (pre-university age), 18-24 (university) and > 24. Other variables were: educational level and parents educational level (university/upper cycle; bachelor/medium or basic/no studies) and self-perceived family income. Sociodemographic questions were limited in order to avoid collecting information that could identify the students since the first phase, i.e., anonymity was guaranteed.

Nightlife recreational habits. The questionnaire included six items, structured as follows: frequency of going out during the last year; frequency of consuming alcohol, cannabis, cocaine, amphetamines or benzodiazepines in leisure time, and level of importance regarding the use of alcohol and other drugs in leisure time. Regarding the frequency of going out, the response options included five categories ranging from "*more than once a week*" to "*never*". Other five response categories were used for questions about the frequency of using psychoactive substances, grouped as "*always or often*", "*sometime or a few times*" and "*never*". In turn, the optional response of the questions focussed on the level of importance of the substance use included other five categories ranging from "*indispensable*" to "*indifferent*".

Perceptions of sexual violence and equality in nightlife context. In order to ensure the comparability of our findings, questions were adapted from previous studies. Those concerning

equality, security and impunity were based on Spanish [8, 34, 35] and European [3] survey-based studies. The questions focused on perceptions about equality between women and men in the nightlife, including level of security, worries about the risk of suffering from sexual violence, and the legal consequences for assailants. Five items were included, which required a dichotomous response (*yes or no*). Here some sample items: *“Are you worried due to the risk of sexual violence when you go out?”*, *“Do you think that nightlife spaces are egalitarian for women and men?”* Questions regarding several behaviours as forms of sexual violence included rape, unwanted physical contact, corraling, invasive sexual comments and insistence against negatives. These items were selected from the Sexual Experiences Survey [36], previous Spanish studies [34, 35], as well as definitions from the World Health Organization. The Sexual Experiences Survey Long Form Victimization (SES-LFV) is one version of the Sexual Experiences Survey (SES) that assesses victimization by unwanted sexual encounters including rape. Respondents were asked to place a checkmark showing the experiences they think are forms of sexual violence, among the following: *“rape”*, *“unwanted physical contact”*, *“corraling”*, *“invasive sexual comments”*, and *“insistence against negatives”*. Other questions about the normalization of sexual violence and justification for forced sexual intercourse were also based on approaches used in official surveys [3, 8]. Seven items requiring dichotomous responses (*yes or no*) were included regarding the questions about the normalization and justification of the sexual violence. The Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale [37] was used for designing these items. Concretely, those related to the intersectionality between sexual violence and drug use. As such, four items encompassed the normalization study. Two of those items are: *“Do you think that women who have fun in nightlife environments must assume the risks of being sexually assaulted?”*, *“Do you think that sexual assaults happen due to the greater use of drugs by women?”* Other three items approached the justification for forced sexual intercourse, for example: *“Do you think forced sexual intercourse is justified if a woman is under the influence of drugs?”*

Perceptions about DFSA. The authors developed several questions concerning DFSA due to the lack of questionnaires regarding this phenomenon at the time of the study. Previous reviews of the issue allowed relevant items to be identified [33, 38]. These questions included eight items encompassing the willingness to conduct DFSA; risky practices for DFSA victimization (sharing the own drink and accepting drinks with unknown content); the type of consumption and the type of drugs, and the relationship between victim and assailant in most DFSA cases. Besides, four other items were included concerning the social perception of using drugs based on gender. Concretely, the existence of an equal consideration regarding male and female drug use, the

greater normalization of images of drunken men and social tolerance towards men and women under the influence of drugs; and, finally, the social support in risky situations, especially the social men penalization for trying to take advantage of a woman who has motor difficulties due to the effects of psychoactive substances.

Data analysis.

All variables were described for the whole sample and stratified by gender. A bivariate analysis was performed to identify possible sociodemographic and nightlife recreational habit factors related to gender. The statistical significance of the differences between these variables was assessed using the Chi-square and Fisher's exact tests. The significance was set at two-tailed $p < 0.05$.

Gender-based differences in the perceptions about sexual violence, equality and DFSA in a nightlife context were calculated using the crude (OR) and adjusted odds ratio (ORa). The ORa was determined using logistic regression models. These models were fitted to assess that no other sociodemographic or nightlife recreational habits affected the gender-relations differences in the perceptions. The models included all variables with $p < 0.10$ in the bivariate analysis. Possible interactions amongst the related factors were also evaluated. OR, ORa, and their corresponding 95 % confidence intervals (95 % CI), were obtained as measures of the relation strength.

RESULTS

From the 2355 respondents, 66.0 % were women, 74.0 % were aged between 18 and 24 years (mean age 20.6 years, $SD=4.2$), 73.4 % had an educational level above basic studies, 40.3 % came from families in which at least one parent had university or higher studies and 66.7 % came from families with a middle, low or very low income. With respect to nightlife recreational habits, in the last 12 months, 64.3 % had gone out at least once a month, using alcohol or cannabis always or often 72.8 % and 7.5%, respectively. Around 33.3 % thought that use of alcohol and/or other drugs was very important in their leisure time. The women were younger ($p < 0.001$), had a higher maternal educational level ($p=0.016$) and used less cannabis and cocaine in their leisure time ($p < 0.001$). The sociodemographic characteristics can be found in Table 4.

Table 4. Demographic results.

	Total	Women	Men	
Age***	N (%)	N (%)	N (%)	p
16 – 17	353 (15.0)	272 (17.5)	81 (10.1)	<0.001
18 – 24	1742 (74.0)	1129 (72.6)	613 (76.6)	
> 24	260 (11.0)	154 (9.9)	106 (13.3)	
Formative level				
University and/or higher education	854 (36.5)	557 (35.8)	297 (37.5)	0.131
Secondary/Upper secondary	863 (36.9)	592 (38.3)	21 (34.2)	
Basic or with no studies	623 (26.6)	398 (25.7)	225 (28.4)	
Maternal educational level**				
University and/or higher education	942 (40.3)	644 (41.7)	298 (37.4)	0.016
Secondary/Upper secondary	331 (21.4)	156 (19.6)	487 (20.8)	
Basic studies or without studies	911 (38.9)	569 (36.9)	342 (42.8)	
Father formative level				
University and/or higher education	894 (38.8)	604 (39.7)	290 (36.8)	0.258
Secondary/Upper secondary	466 (20.2)	310 (20.4)	156 (19.8)	
Basic studies or without studies	947 (38.9)	606 (39.9)	341 (43.3)	
Family income				
Very high, high, medium-high	780 (33.3)	510 (32.8)	270 (33.8)	0.677
Medium, low, very low	1559 (66.7)	1034 (66.5)	525 (65.6)	
Frequency going out in last year				
Several times/week-once/month	1515 (64.3)	989 (63.6)	526 (65.8)	0.565
Once/month/three months	648 (27.5)	435 (28.0)	213 (26.6)	
Three times/year-never	132 (8.2)	131 (8.4)	61 (7.6)	
Frequency of alcohol use in leisure time (ILT)				
Always or often	1708 (72.8)	1127 (72.6)	581 (73.1)	0.868
Sometimes or a few times	522 (22.2)	345 (22.2)	177 (23.3)	
Never	117 (5.0)	80 (5.2)	37 (4.7)	
Importance of alcohol and other drug use ILT				
Indispensable, very important	784 (33.3)	521 (33.5)	263 (32.9)	0.924
Not very important	780 (33.1)	516 (33.2)	264 (33.0)	
Indifferent	789 (33.5)	517 (33.3)	272 (34.0)	
Frequency of cannabis use ILT***				
Always or often	173 (7.5)	99 (6.5)	74 (9.5)	<0.001
Sometimes or a few times	725 (31.5)	451 (29.7)	174 (35.2)	
Never	1400 (60.9)	969 (63.8)	431 (55.3)	
Frequency of cocaine or amphetamine use ILT**				
Sometimes or a few times	137 (5.8)	73 (4.8)	64 (8.3)	0.001
Never	2145 (94.0)	1442 (95.2)	703 (91.7)	
Frequency of benzodiazepine use ILT				
Always or often	14 (0.6)	9 (0.6)	5 (0.7)	0.952
Sometimes or a few times	38 (1.7)	26 (1.7)	12 (1.6)	
Never	2223 (97.7)	1476 (97.7)	747 (97.8)	

ILT: in leisure time. *p < 0.10; **p<0.05; ***p<0.001

The perceptions of equality, security and impunity in the nightlife contexts are shown in Table 5 and are clearly different for men and women. Of all respondents, 86.0 % perceived leisure nightlife spaces as not egalitarian (88.6 % women and 81 % men, p>0.001), 80.7 % considered them as being less safe (84.1 % vs. 74.1 %, p<0.001) and 61.5 % were worried about the risk of sexual violence in the leisure nightlife, with this concern being fifteen times more frequent

amongst women (81.7 %) than men (21.1 %) ($p < 0.001$). With regard to the perception about what is sexual violence, rape and unwanted physical contact were considered to be sexual violence for 98 % of the respondents, with no significant differences between genders. Some differences were found for corraling, which was considered to be sexual violence for 91.0 % of the respondents (92.5 % women and 88.0 % men ($p < 0.001$)) and invasive sexual comments (90.6 %; 92.1 % women and 87.8 % men ($p < 0.001$)). The difference regarding the perception about insistence against negatives (81.1 %; 84.4 % women and 74.5 % men, ($p < 0.001$)) should be highlighted: the consideration of this behavior as a form of violence is two times more frequent among women. With respect to the normalization of the sexual violence in the leisure nightlife, 9.5 % thought that women must assume the risk of being sexually assaulted (12.7 % men and 7.9 % women, $p < 0.001$) and 19.4 % linked sexual violence against women in nightlife with greater female drug use, with no differences between genders. Around 91.2 % of the respondents thought that the drug use acts as a trigger facilitating sexually violent conducts (92.3 % vs. 89.0 %; $p < 0.05$), but only 7.2 % thought that cessation of the drug use would end the sexual violence in the nightlife, with no significant differences between sexes. Similarly, forced sexual intercourse against women in nightlife was justified by 1.9 % of the respondents if a woman dresses provocatively (no differences between genders), 2.6 % (3.5 % men and 2.2 % women, $p < 0.10$) if a woman is drugged and 6.5 % (8.6 % men and 5.4 % women, $p < 0.05$) if a woman agrees to leave with her assailant.

Table 5. Perceptions about sexual violence and equality in a nightlife context.

	Total	Women	Men		
Perceptions about equality, safety and impunity in nightlife contexts. "Nightlife contexts/spaces...	N (%)	N (%)	N (%)	Crude OR	Adjusted^a OR
Are not egalitarian for women and men"***	2024 (86.0)	1376 (88.6)	648 (81.0)	1.82 (2.32-1.45)	1.75 (2.27-1.39)
imply a lower level of safety"***	1897 (80.7)	1305 (84.1)	592 (74.1)	1.85 (1.5-2.28)	1.80 (1.45-2.23)
worry me due to the risk of sexual violence"***	1446 (61.5)	1270 (81.7)	176 (22.1)	15.78 (12.78-19.49)	15.03 (12.08-18.69)
imply fewer legal consequences for criminals"***	1417 (61.4)	979 (64.7)	438 (55.1)	1.49 (1.25-1.78)	1.62 (1.35-1.94)
Perceptions about behaviours that constitute forms of sexual violence. This behaviour is sexual violence:					
Rape	2322 (98.6)	1534 (98.6)	788 (98.5)	1.11 (0.54-2.27)	0.92 (0.43-1.97)
Unwanted physical contact	2308 (98.0)	1529 (98.3)	779 (97.4)	1.58 (0.89-2.84)	1.61 (0.86-3.01)
Corraling***	2143 (91.0)	1439 (92.5)	704 (88.0)	1.69 (1.27-2.25)	1.655 (1.23-2.23)
Invasive sexual comments***	2134 (90.6)	1432 (92.1)	702 (87.8)	1.62 (1.23-2.15)	1.60 (1.2-2.15)

Table 5. Continuation.

	Total	Women	Men		
Perceptions about behaviours that constitute forms of sexual violence. This behaviour is sexual violence:					
Insistence against negatives***	1909 (81.1)	1313 (84.4)	596 (74.5)	1.86 (1.5-2.29)	2.01 (1.62-2.51)
Normalization of sexual violence in leisure nightlife contexts (ILNC)					
“women must assume the risks of being sexually assaulted ILNC”***	223 (9.5)	122 (7.9)	101 (12.7)	0.59 (0.44-0.78)	0.53 (0.4-0.71)
“sexual assaults happen due to the greater use of drugs by women”	454 (19.4)	278 (17.9)	176 (22.1)	0.77 (0.63-0.96)	0.70 (0.56-0.88)
“drug use acts as a trigger facilitating violent sexual behavior”**	2140 (91.2)	1431 (92.3)	709 (88.6)	1.49 (1.12-1.99)	1.44 (1.06-1.96)
“preventing drug use would end sexual violence INLC”	170 (7.2)	108 (6.9)	62 (7.8)	0.89 (0.64-1.23)	0.85 (0.6-1.19)
Justification of sexual violence. “Forced sexual intercourse is justified if...					
a woman dresses provocatively”	44 (1.9)	27 (1.7)	17 (2.1)	0.81 (0.44-1.5)	0.97 (0.5-1.88)
a woman is under the influence of drugs”*	62 (2.6)	34 (2.2)	27 (3.5)	0.62 (0.37-1.02)	0.58 (0.34-0.99)
a woman agrees to leave a nightlife space with the assailant**	151 (6.5)	83 (5.4)	68 (8.6)	0.61 (0.44-0.85)	0.57 (0.4-0.8)

ILNC: in leisure nightlife contexts. *p<0.10; **p<0.05; ***p<0.001. ^a adjusted by age, maternal educational level, cannabis use and cocaine/amphetamines use.

Perceptions about the DFSA phenomena are shown in Table 6. Around 1.7 % of the respondents would be willing to conduct sexual intercourse with someone unable to express consent because of the drug use. This willingness was five times higher in men (3.6 %) than in women (0.8 %; p<0.001). Regarding the risk practices related to DFSA: 67.7 % share their drinks (73.5 % men and 64.7 % women, p<0.001); 27.7 % accepted drinks with unknown content (35.2 % vs. 24.2 %, p<0.001) and 14.4 % thought they may have ingested a substance involuntarily (17.1 % vs. 12.9 %, p<0.001). As for their DFSA substance knowledge, 48.4 % thought that *burundanga* (scopolamine) was present in most DFSA cases (44.7 % men and 55.3 % women, p<0.001) and 34.0% thought that alcohol was present (39.2 % vs. 31.3 %, p<0.001). Around 36.9 % of the respondents thought that DFSA usually happens after a voluntary use of some substance by the victim (42.0 % men, 34.3 % women, p<0.001) and 35.4 % believed that most crimes are committed by someone the victim knows personally (no differences by gender). Concerning the social perception of the drug use, 37.5 % of men and 23.7 % of women (p<0.001) thought that the social consideration of the drug use is equal for men and women. Likewise, 2.8 % vs. 8.9 % (p<0.001) thought that men and women under the effect of drugs face the same social judgment. As such, the perception that drugged women and men are equally tolerated is three times more frequent amongst men. Around 81.3 % thought that the image of a drunk man is more normalized than the image of a drunk woman, with the frequency being more than twice

as high among women (85.3 %) than among men (74.3 %) ($p < 0.001$). Moreover, 28.7 % believed that the social opinion about male’s drug use is the same as the social opinion about the female’s drug use (37.5 % men and 23.7 % women, $p < 0.001$). Finally, 48.9 % believe that the society penalizes a man trying to take advantage of a woman who has motor difficulties due to the effects of psychoactive substances in a leisure nightlife context; 53.6 % men and 46.5 % women ($p < 0.001$).

Table 6. Perceptions about DFSA.

	Total	Women	Men		
To be willing to conduct DFSA	N (%)	N (%)	N (%)	Crude OR	Adjusted ^a OR
“I would be willing to have sexual intercourse with someone unable to express consent because of drugs use”***	41 (1.7)	12 (0.8)	29 (3.6)	0.21 (0.10-0.41)	0.19 (0.09-0.39)
Risky practices for DFSA victimization in leisure nightlife contexts (ILNC)					
“I share my own drink ILNC”***	1579 (67.7)	998 (64.7)	581 (73.5)	0.66 (0.55-0.8)	0.635 (0.52-0.79)
“I accept drinks with unknown content ILNC”***	653 (27.9)	374 (24.2)	279 (35.2)	0.59 (0.49-0.71)	0.59 (0.49-0.73)
“I think I have ingested a substance involuntarily ILNC”***	338 (14.4)	201 (12.9)	137 (17.1)	0.71 (0.57-0.91)	0.81 (0.63-1.05)
Type of consumption/substances involved in most DFSA cases. “In most DFSA cases...					
...the victim uses drugs voluntarily”***	857 (36.9)	526 (34.3)	331 (42.0)	1.38 (1.16-1.65)	1.36 (1.13-1.63)
...alcohol consumption is involved”***	787 (33.4)	479 (31.3)	308 (39.2)	0.71 (0.59-0.85)	0.76 (0.63-0.91)
...scopolamine (<i>Burundanga</i>) consumption is involved”***	1119 (48.4)	768 (50.3)	351 (44.7)	0.71 (0.59-0.85)	0.76 (0.63-0.91)
Relationship between victim and assailant in most DFSA cases					
“the assailant is someone known by the victim in most DFSA cases”	826 (35.4)	557 (36.1)	269 (34.1)	1.09 (0.90-1.30)	1.16 (0.96-1.40)
Social perception of drug use based on gender					
“social consideration of drug use is equal for men and women”***	666 (28.4)	367 (23.7)	299 (37.5)	0.51 (0.43-0.62)	0.52 (0.43-0.64)
“an image of a drunken man is socially more normalized than that of a drunken woman”***	1912 (81.3)	1326 (85.3)	586 (74.3)	2.1 (1.70-2.60)	2.21 (1.77-2.76)
“social tolerance is equal for men and women under the effects of drugs”***	320 (13.6)	138 (8.9)	182 (22.8)	0.33 (0.26-0.42)	0.32 (0.25-0.42)
Social support in situations with possible DFSA risk					
“society penalizes a man trying to take advantage of a woman who has motor difficulties due to the effects of psychoactive substances ILNC”***	1146 (48.9)	720 (46.5)	426 (53.6)	0.75 (0.63-0.89)	0.7 (0.59-0.84)

ILNC: in leisure nightlife contexts. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.001$. ^a adjusted by age, maternal educational level, cannabis use and cocaine/amphetamines use.

DISCUSSION

A worrying proportion of youths still hold incorrect basic beliefs about sexual violence, with marked differences between the two genders. Many of them internalize nightlife as a predominantly male environment, where women, simply because of who they are, must assume a risk of suffering sexual violence, as well as a certain degree of social condemnation if this violence occurs. In addition, there is little knowledge or, even worse, misconceptions, about DFSA among young people.

This research was carried out in a context of young university students, which we consider to be representative of the young, middle and medium-to-high social group in the Spanish population. In this regard, the gender-based differences were more remarkable at a socio-demographic than a leisure nightlife level. However, despite the context being representative, the sample is not probabilistic, a limitation resulting from the difficulties of researching this topic. Women were slightly younger than men, their parents had a slightly higher educational level, and they presented a leisure nightlife pattern rather close to the male pattern than for previous generations. These data show that a convergence between men and women regarding consumption patterns [18] was reached in a short period of time [39]. However, although an increasing number of women are entering nightlife, severe gender inequalities remain [18]. As previously hypothesized in our study, perceptions of equality, safety and impunity in leisure nightlife contexts differ between women and men, with only 11.4 % and 19.0 %, respectively, thinking that nightlife spaces are egalitarian, which is in line with other Spanish studies [3, 17]. Similarly, our results show an important female perception of nightlife as a context characterized by a low level of personal safety. More than 80 % of women are concerned about the risk of sexual violence in leisure nightlife (fifteen times more than men). This perception limits the female freedom of action and movement. Indeed, in a related study, up to half of the European women were found to avoid some situations or places for fear of suffering a sexual assault [3]. Consequently, women could be suffering more negative consequences in this process of convergence that is occurring in recreational contexts [18].

Almost everyone in our sample perceived certain behaviour, such as rape and unwanted physical contact, as sexual violence. Nevertheless, the opinion varies as to whether other, less explicit behaviours, such as corraling or invasive sexual comments, are forms of sexual violence, as already indicated in previous studies [15, 17]. As initially hypothesized, there is a social gap between genders regarding identifying some specific acts as sexual violence. These differences are more marked regarding the consideration of insistence against a negative as a form of

violence, which is two times more frequent among women. This misperception has two consequences. On the one hand, with regard to the possible victims, the perceptions about what constitutes violence conditions the ability of a victim to self-acknowledge as such [22]. Many people do not identify their unwanted sexual experiences as a crime and conceptualize them as miscommunication, bad sex or they simply do not know how to identify them [29, 30, 40]. This difficulty is more common among victims of sexual assault who had consumed alcohol around the attack time [29, 41]. These victims feel that their experiences do not represent a “real rape” [42]. Similarly, with regard to the culture of protecting the offenders, the normalization of attitudes, beliefs and distorted socialization experiences results in aggressive sexual behaviors by the assailants [43, 44].

Drug use plays an important role in sexual violence from two different perspectives. First, drugs, especially alcohol, are highly linked and integrated into the recreational activity of the nightlife context [18, 21, 45, 46]. Indeed, alcohol consumption was found to be an indispensable or very important activity for a third of the respondents during their leisure nightlife activities, which is higher than for previous studies in the same context [47]. Second, drug use appears to be one of the main causes of sexual violence for many young people. Around 20 % attribute sexual violence against women in a nightlife context to the greater use of drugs by women nowadays. This perception involves blaming women for the violence they suffer and can be explained by social adherence to gender stereotypes, which penalize more the female consumption because of the transgression of roles traditionally assigned to women. According to this belief, drinking alcohol before the assault causes the victim to be perceived as promiscuous responsible for the attack [48]. These observations are consistent with one of our original hypotheses: women experience a lack of social support in leisure nightlife contexts, resulting from the different social perceptions about the drug use based on gender. Finally, drugs use is also largely considered as a factor triggering the manifestation of violent sexual behaviours. At this point, we focus only on male consumption since sexually violent behaviour is mainly realized by men against women [11]. However, sexual violence in the leisure nightlife context should not be considered only based on drug use. Thus, although up of 90 % of the respondents think that drug use facilitates sexual violence, only 7.2 % believe that stopping the consumption would end the violence. Cultural violence against women is an essential component of the sexual violence, thereby configuring a socio-structural reality that supports and justifies the violent behaviour. In Spain, around 50 % of men and 45 % of women think that alcohol is often the reason why a man rapes a woman [17]. However, this statement can be interpreted as if the population were somehow “exempting” the offenders from their actions. Indeed, a person may share perceptions for

justifying the violence subtly and never blaming the victim directly. For instance, when thinking that the assaults happen because of how a woman dresses or because the victims consume alcohol or other drugs [33], which this study found for a large number of men. Similarly, it is striking the differences between genders regarding the willingness to conduct sexual intercourse with someone unable to express consent because of drugs. In this sense, the observations support our previous hypothesis that men show greater willingness than women to conduct sexual intercourse with someone unable to express consent because of drugs. As such, male willingness reaches 3.6 %, with this figure being almost five times higher than females, although similar to estimates from other countries [49]. In this sense, previous studies suggested that the use of alcohol by victims of alcohol-involved sexual assault is frequently encouraged by another person, often the assailant [50]. It should be noted that in situations of dating and hooking up, sexual goals are more often the primary motivation among men than among women [51]. Consistent with this, significant proportions of male college students admit to encourage their female counterparts to consume alcohol in an attempt to engage them in sexual intercourse [50, 52, 53]. Similarly, undergraduate women report sexual assaults after someone else got them drunk twice as frequently as after being held down [54].

In this study, three myths were related to the DFSA phenomenon, which fits another of our original hypotheses: there are several widespread myths or misconceptions about the DFSA phenomenon, which significantly affect the social conception of this form of sexual violence. Firstly, most young people believe that assaults happen after the surreptitious administration of some type of substance to the victim by the assailant. However, it is much more frequent that victims voluntarily intake the drugs before the assault [55-57]. In addition, 48.4 % believe that the *burundanga* (scopolamine) is the substance involved in most DFSA cases, with this figure decreasing to 34 % for alcohol. However, confirmed DFSA cases involving the use of scopolamine in Spain are anecdotal [58], whereas at both a national [55, 59, 60] and international level [56, 57], there is significant evidence for the involvement of alcohol in DFSA cases. Both myths are related, since the media have helped to spread the idea about the covert administration of “rape drugs” such as flunitrazepam, GHB [56] and scopolamine [58]. The greater extent of these myths among women is remarkable, probably resulting from their greater concern about suffering sexual violence. This may lead them to further consider these scare stories concerning the surreptitious administration of certain substances [22]. Finally, another misconception identified in this work sustain that, in most cases, assailants are unknown people to the victim, an idea not fitting the reality [22, 61].

It is essential to bear in mind that these myths and incorrect perceptions difficult taht people suffering DFSA to acknowledge themselves as victims, which is crucial for reporting the assault and seeking proper help [22, 33]. However, even if they identify themselves as such, the decision to report an incident is influenced by the negative social reactions expected by the victims [62-64]. When a sexual assault involved drug use by the victim, social reactions to the incident depend on cultural perceptions about drug use, which vary based on the consumer's gender [22]. Young women tend to believe that females' drug use is socially more penalized than drug use by males. The perception that drugged women and men are equally tolerated by society is three-time more frequent amongst men. Similarly, women believe twice as frequently as men that the image of a drunk man is socially more normalized than that of a drunk woman. In this way, as we previously suggested, women experience a lack of social support in leisure nightlife contexts, resulting from the different social perceptions about the drug use based on gender. Social negative reactions towards the victims negatively affect their recovery [65], thus implying a higher risk of re-victimization [33]. The absence of a suitable social support may also lead the victims to not recognize the need to take precautions against future aggressions [41] or to take refuge in alcohol as a coping strategy [33]. This situation can lock victims in spirals of cyclical re-victimization [22]. In this sense, when we asked about expected social support in a risky DFSA situation, only 48.9 % believe that the society would penalize a man trying to take advantage of a woman who has motor difficulties due to the effects of psychoactive substances in a leisure nightlife context. This perception of a lack of social support is more extended among women and is associated with the greater female perception of impunity for the perpetrators in a nightlife context. Finally, the performance of statistical adjustments must be taken into consideration. The balance between women and men was not altered when the analyses were carried out adjusting the data by proxy variables for education level and frequency of going out. Consequently, the differences observed are not attributable to factors other than gender.

Limitations.

This study presents several limitations. Although a non-probabilistic sampling method was used, the representativeness of the sample is valid as the composition is consistent with the sociodemographic profile of any other Spanish university. Likewise, the results come from a population group with a medium-to-high social level, so that the misconception could be considerably greater in other population groups. In addition, this study did not use validated questions giving the pioneering nature of this work in Spain, where limited research into sexual violence and DFSA has been conducted despite the relevance of this phenomenon.

Consequently, the studied parameters have not yet been included in current psychometric scales.

CONCLUSIONS

A significant segment of university students does not perceive certain forms of sexual violence and shares several attitudes and perceptions justifying it. The use of drugs, especially alcohol, is widely viewed as a factor originating and justifying the sexual violence against women, with this idea being particularly prevalent among men. This tolerance to sexual violence leads women to suffer disadvantageous situations, particularly in leisure nightlife contexts, where drug use is widespread. In this sense, this study's findings may prove useful when designing prevention efforts targeted to increasing the social awareness of teenagers and young adults against sexual violence in leisure nightlife contexts. These efforts must demystify the DFSA phenomenon, enhance the social support before, during and after the assault, and avoid blaming the victims. Identifying misconceptions regarding sexual violence should encourage the development of preventive and informative intervention programs, particularly targeted to men, to promote the generation of equitable and secure spaces. All forms of sexual violence must be well defined and understood by the possible offenders, victims and society as a whole. A mind-set change is necessary to get a more supportive and active society against sexual violence, concretely against the DFSA phenomenon.

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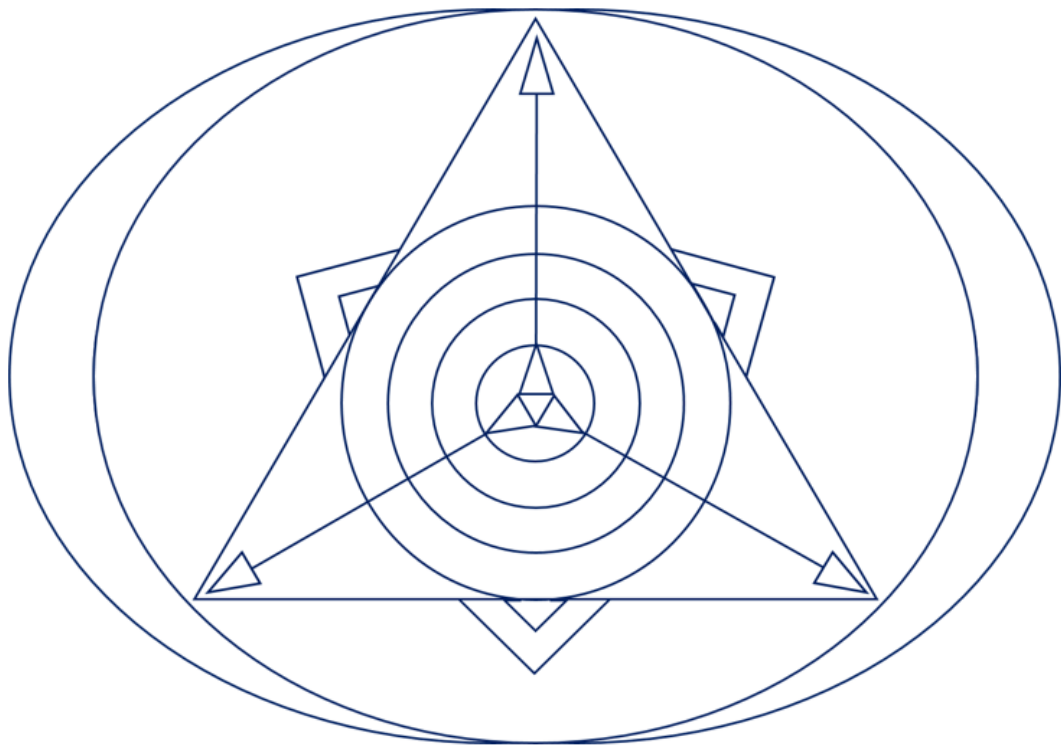
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CHAPTER 3

Generating Support: Direct Dimension of DFSA



3.1. Preventive Strategic Thinking Lead by Forensic Intelligence for Overcoming DFSA in Leisure Nightlife Contexts.

Prego-Meleiro P, Sanz-Pareja M, Quintanilla G, Garcí-Ruiz C, Montalvo G. Preventive strategic thinking lead by forensic intelligence for overcoming drug-facilitated sexual assaults in leisure nightlife contexts. In Publication process.

ABSTRACT

A well-targeted and evidence-based preventive strategy against DFSA was developed by applying a new ecological working framework about this form of sexual violence in youth leisure nightlife contexts. Through an exercise of strategic intelligence, the ecological working framework was applied as an instrument for strategic thinking. Working at the microsystem level of the ecological model theory, actions were targeted to the three personal elements of the routine activity theory: assailants, victims, and witnesses. Based on the positive feedback flow of the virtuous triangle promoting peace, direct support against this form of violence was generated through a vertical intervention within the educational system, reaching more than five hundred young students from the university and pre-university education. Forensic intelligence played a key role in structuring and developing the preventive strategy, participating as a source of knowledge crucial for decision-making processes. This inter-professional dialogue explores the potential contribution of forensic intelligence to public health and the actions of the civilian population to crime prevention. It shows a wider proactive role of forensic science, beyond the traditional retroactive view limited to courtrooms and intelligence-led policing.

INTRODUCTION

Victimization by DFSA involves assailants approaching victims who cannot consent due to the effects of psychoactive substances [1,2]. A new ecological working framework was recently developed for improving the study and prevention of this form of sexual violence [3]. This framework operates as a multidimensional structural platform, composed of four levels of an ecological influence and three violence levels (Figure 15a). The four rings represent influence levels, namely macrosystem, exosystem, microsystem, and individual, from outside to inside (Fig 15a). Risk factors into the four influence levels contribute to breaking the ecological balance between the victim, located at the central point, and the environment, resulting in the three levels of violence: direct, institutional, and cultural [3]. In this sense, violence is a vicious triangular syndrome, which can start at any corner of the triangle (Fig 15a) and be transmitted to the other corners by causal flows [4]. Interestingly, in opposition to the vicious syndrome of violence, positive influences may lead to a virtuous triangle promoting support (Figure 15b) [3]. This reversibility shows a route to crime prevention by configuring of the factors included at each level in an inverse process to victimization [3].

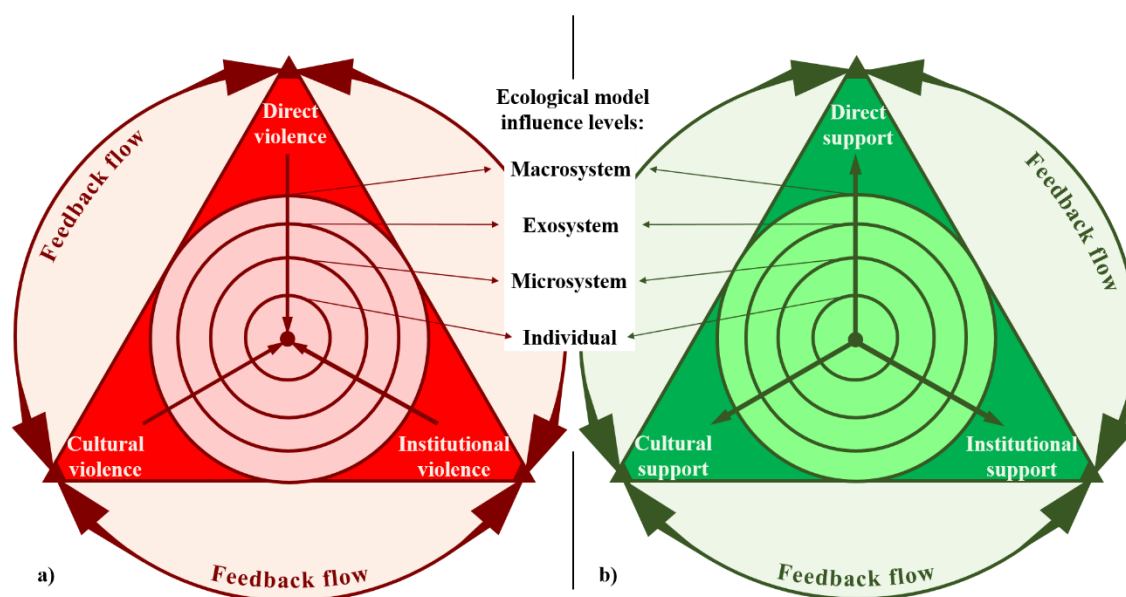


Figure 15. Ecological working framework for understanding and preventing the victimization of women by DFSA. Figure 15a shows the vicious triangle of violence, while Figure 15b illustrates the virtuous triangle promoting support.

Such a hopeful process requires a proper source of knowledge for designing well-targeted and evidence based preventive efforts. At this point, forensic intelligence has a significant role to play, since it consists of the accurate, timely, and useful product of processing forensic case data [5]. In this sense, the ecological working framework gathers forensic information about the DFSA phenomenon, providing knowledge useful for strategic thinking and decision-making processes influencing preventive actions. Data at the individual level come mainly from forensic studies of alleged sexual assaults attended at sexual assault treatment centers [6-13], or reported to the judicial authorities [14-23]. As a source of knowledge, the framework is suitable as an intelligence strategic tool for designing and articulating strategies addressed to prevent the DFSA problem [3]. In turn, the application of forensic intelligence for the purpose of DFSA prevention allows exploring a wider contribution of forensic science, beyond the traditional retroactive view limited to courtrooms [24-33]. The generation of direct support is a key step for facing the DFSA phenomenon. It involves replacing violent interactions with supporting synergies addressed to stimulate empathy and interindividual cooperation. This includes violence prevention before it happens and the disruption of potential assaults when they are happening [3]. In this regard, educational actions positively influencing at the microsystem level are key to generate direct support, since this level encompasses the direct personal interactions [34,35]. Well-targeted preventive actions at the microsystem level should focus on potential assailants and victims, as well as witnesses able to act as capable guardians. This approach aligns

with the routine activity theory, according to which crimes occur when likely offenders and suitable targets come together in time and place, in the absence of capable guardians [36]. DFSA usually involves assaults to women in young leisure nightlife contexts. Numerous studies have related the settings of college campuses and high school to this form of sexual violence [37-40], so strategic thinking envisages such educational settings as suitable targets for implementing strategies targeted to prevent the DFSA phenomenon. In turn, achieving the active mobilization of students and professors is a key point for success, since they are the main actors within the educational context. Among students, educational resources such as the service-learning pedagogy can be good tactic elements to enhance an efficient transmission of awareness messages. Therefore, the provision of forensic intelligence information through the ecological working framework about the DFSA phenomenon can be useful for developing a preventive strategy that mobilize the civil society within the educational context against this form of sexual violence. This work aims to apply an intelligence strategic framework useful for crime prevention through an exercise of strategic thinking developed by civil society and focussed on generating direct support against the DFSA phenomenon.

METHODOLOGICAL APPROACH

This work involved the active participation of three different types of agents. On the one hand, the development managers of the study, comprising three university professors from the University of Alcalá and two teachers from the high and secondary school Cardenal Cisneros, both educational institutions located in Alcalá de Henares (in Madrid, Spain). On the other hand, university and pre-university students from four different educational levels: post-degree and university degree, and high school and secondary school. University students involved eleven participants coming from PhD in forensic sciences and the pharmacy degree. The third agent was a forensic scientist who occupied a strategic location between the other two agents and played a key role in applying the framework. In the connecting thread of this thesis, it is essential to highlight that this third agent operating as a forensic scientist is this thesis's author. Figure 16 shows an outline of the methodological approach.

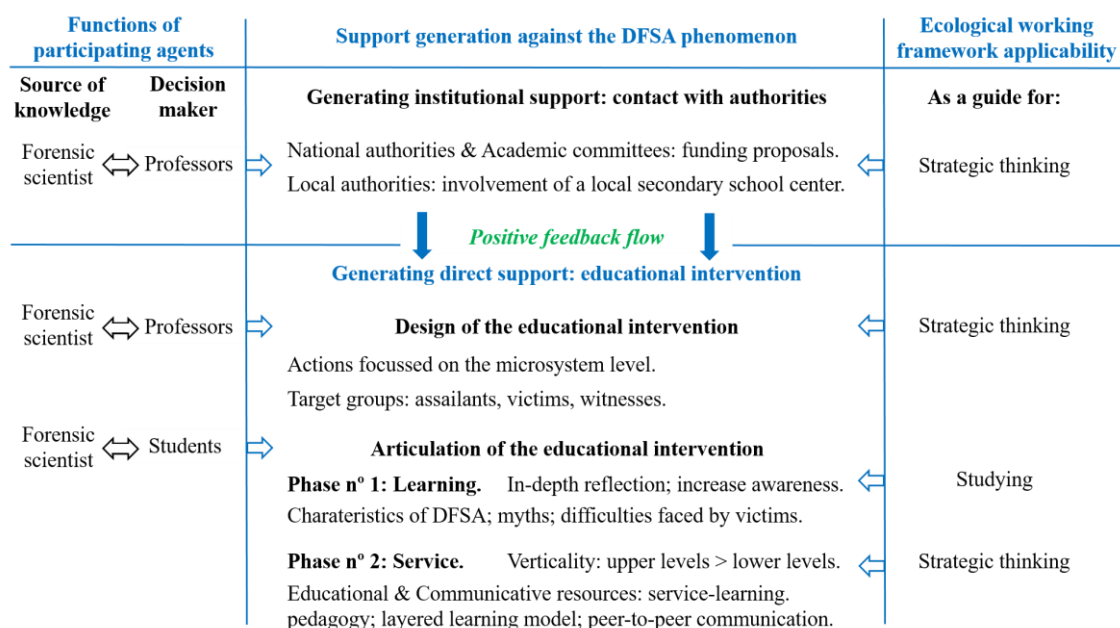


Figure 16. The methodological approach for generating direct support against the DFSA phenomenon by applying the ecological working framework.

The forensic scientist was a focal point for structuring and developing the prevention strategy. This agent provided development managers and students with information useful for decision-making processes to prevent the DFSA phenomenon and generate institutional and direct support facing this form of violence. Based on the positive feedback flows affecting the virtuous triangle promoting support (Fig. 15b), first actions were targeted to strengthening support at the institutional level, with the ultimate goal of stimulating new opportunities for generating direct support. In this way, institutional support enhancement consisted of articulating funding proposals for research and development projects submitted to several national authorities and academic committees through corresponding open calls [41-43]. Additional institutional actions included contacting local authorities to coordinate teachers' and students' participation from a local secondary school center. Simultaneously, development managers designed a preventive intervention within the educational system devised to generate direct support against the DFSA phenomenon. Applying the ecological working framework as an intelligence strategic framework, they designed an intervention focused on actions at the microsystem level involving the participation of young students as agents promoting direct support. As such, this plan for strategic intervention within the educational system guided student participation. The microsystem encompasses direct personal interactions within defined groups of people in their immediate physical surroundings [34,35]. Interventions at this level sought to replace violent sexual interactions related to DFSA with supporting synergies addressed to stimulate interindividual cooperation and reinforce community cohesion. This

approach aligned with the routine activity theory, according to which crimes occur when likely offenders and suitable targets come together in time and place, in the absence of capable guardians [36]. Likewise, the strategy designed by development managers involved several educational and communicative resources as tactical elements, including the service-learning pedagogy, the flipped classroom technique, the layered learning model, and peer-to-peer communication. On the other hand, the university and pre-university students participated through a two-step process adjusted to the two phases of the service-learning pedagogy. In this sense, the preventive strategy designed by the development managers chained both phases of this teaching approach: learning and service. It was possible through the layered learning model. As such, the service phase of students from upper levels was an integral part of the learning phase of students from lower levels. Both phases are described following.

Phase nº 1: learning. The first phase was based on the parallelism between the functionality of the ecological working framework as a guide for the in-depth study of the factors involved in the DFSA phenomenon and the learning step of the service-learning pedagogy. Topics encompassed by the ecological framework guided the learning, focusing on the characteristics of the phenomenon, myths, and difficulties victims face. Therefore, this phase involved an in-depth reflection about the DFSA phenomenon. For that purpose, various educational and communicative resources were used as tactical elements. The flipped classroom technique was used to increase awareness and improve knowledge acquisition of the DFSA phenomenon, facilitated by the Blackboard virtual platform of the University of Alcalá. Moreover, the layered learning model was combined with the peer-to-peer communication technique. In this way, knowledge assimilation started with talks by upper-level students to their colleagues from lower courses and continued by students' autonomous work, combined with collaborative teamwork with peers and professors' guidance and supervision.

Phase nº 2: service. The second phase was based on the framework's functionality as a strategic intelligence framework useful for strategic thinking focused on preventing the DFSA phenomenon. There was a parallelism between this functionality and the service phase of the service-learning pedagogy. Concretely, the framework was useful for guiding the design and articulation of well-targeted and evidence-based preventive services. In this phase, workgroups composed of students acted as decision-makers based on the action lines defined by the framework. With the supervision of professors, they designed several services for the community. These community services consisted of preventive actions addressed to the microsystem level and focused on the routine activity theory elements: potential assailants, victims, and witnesses. Therefore, the methodological approach involved two stages. First, the

stimulation of institutional support for generating new opportunities for developing actions focused on increasing direct support. Secondly, these opportunities were taken advantage of by preventive actions carried out by young college students at the microsystem level and addressed to influence the routine activity theory elements positively. Figure 16 shows an outline of the methodological process.

RESULTS

1. Design and articulation of an effective evidence-based crime prevention strategy.

The two stages of the developed preventive strategy were the following:

1.1. Stage nº 1. Positive feedback flows: the institutional support stimulates direct support.

First actions by development managers resulted in institutional support on the part of diverse authorities, both at local and national levels. On the one hand, economic funding materialized in the form of two Innovative Educational Projects of the University of Alcalá (reference codes: EV/UAH951 & EVUAH1024) [44,45] recognized as an institutional impact activity (46) and sponsored by the Ministry of Health, Social Services and Equality of the Spanish Government (reference code: MSCBS-PNSD-20181032) [47]. Likewise, the project had the approval of the ethics committee of the University of Alcalá. On the other hand, in the context of this project, contacts between development managers and the local authorities of the Alcalá de Henares City Council allowed a further extend of the institutional support. Local authorities coordinated the involvement in the project of the local secondary school center Cardenal Cisneros. Altogether, these actions addressed to the institutional level were a strategic key step to stimulate opportunities for generating direct support against the DFSA phenomenon. It was possible due to the feedback loop between the three corners of the virtuous triangle promoting support (Figure 15b). Likewise, in the context of this project, to take advantage of the new opportunities for generating direct support, development managers designed a preventive intervention addressed to the educational system. For that purpose, applying the ecological working framework as a strategic intelligence framework, they focussed on actions developed at the microsystem level and led by young students to generate direct support.

1.2. Stage nº 2. Generating direct support by a ripple effect of positive influence.

As part of the strategy based on applying the ecological working framework as an intelligence strategic framework, the intervention within the educational system was provided with a strong verticality to reach different educational levels and going beyond the university boundaries. In this way, successive jumps happened between teaching levels, starting from the university

context with post-degree and degree students and reaching the pre-university context with students belonging to high school and secondary education. This evidence-based strategic thinking focussed on the active mobilization of young people in facing a serious problem especially affecting the youth community. Educational resources used as tactical elements played a significant role in successfully mobilizing young students as agents promoting direct support against the DFSA phenomenon. Regarding the service-learning pedagogy, students from upper levels developed the service phase as an integral part of the learning phase of students from lower levels. In addition, combining the layered learning model and the peer-to-peer communication technique allowed a high communicative efficiency among students of different levels. In this way, lower-level students were positively influenced by educational and awareness actions developed by their upper-level colleagues, who became an inspiration source for greater mobilization and replicated similar preventive actions. Therefore, a ripple effect of positive influence was triggered between students from different teaching levels for promoting direct support against the DFSA phenomenon. Figure 17 illustrates the interrelation between the four educational levels reached, showing the verticality and high scope of the crime prevention strategy developed. Following, the participation of students from each education level.

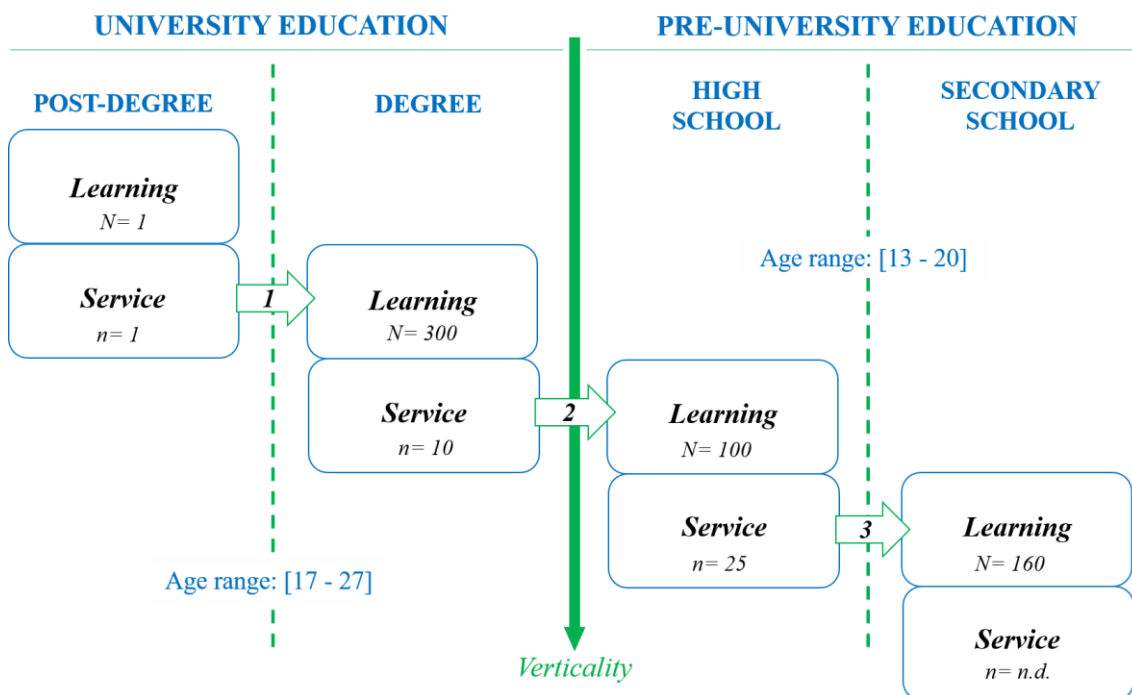


Figure 17. The interrelation of the four educational levels reached by the strategy developed for generating direct support facing the DFSA phenomenon. n.d.: not determined. N: number of persons reached by the learning process. n: number of persons composing the worgroups for preventive services.

Post-degree students positively influencing degree students. The ripple effect started at the post-degree level. In this sense, a twenty-seven years old Ph.D. student in Forensic Sciences specializing in the DFSA phenomenon gave an informative session about this form of sexual violence and its severity in young leisure nightlife contexts. This session was targeted at around three hundred-degree university students ranging from seventeen to twenty-two years old and directly influenced their learning and awareness of the DFSA problem (Fig. 17: arrow nº 1).

Degree students positively influencing high school students. After the first awareness-raising promoted by the post-degree student, the learning phase of the degree students continued guided by the thematic lines and topics encompassed by the ecological working framework, which operated as a guide for the in-depth study of DFSA. As such, the applicability of the ecological working framework as a useful source of knowledge has great usefulness in the learning phase of the service-learning pedagogy. The reflection and the active learning on the issue were also encouraged both an individual and group by implementing the flipped-class technique, facilitated by the Blackboard virtual platform of the University of Alcalá. University professors supervised and accompanied students during their active acquisition of knowledge and encourage them to design community services, especially going beyond the university boundaries and crossing from university to pre-university education. In this line, a workgroup composed of ten first-year pharmacy students designed and articulated preventive actions targeted to younger students of high school. This service phase involved the application of the lines work defined by the ecological working framework, which operated as a strategic intelligence framework useful to design and articulate preventive actions. One hundred high school students were reached, ranging from sixteen to twenty years old. Therefore, following the ripple effect, degree students influenced the learning phase of the high school students (Fig. 17: arrow nº 2). This action supposed a significant jump between academic levels, providing preventive strategy with a notorious verticality within the educational system.

High school students positively influencing secondary school students. Because of the learning about the DFSA phenomenon promoted by the university actions and their inspirational effect, twenty-five high school students designed and articulated new preventive services for facing the DFSA problem within the pre-university context. They replicated the same work scheme previously used by university students, in an effective peer-to-peer communication. Six workgroups developed workshops about the DFSA phenomenon targeted to students from secondary education ranging from thirteen to fifteen (Fig. 17: arrow nº 3). In this way, the

preventive efforts articulated by students from high school reached around one hundred and sixty secondary education students in the same institution.

Secondary school students influencing their surroundings positively. Preventive efforts carried out by high school students positively influenced their colleagues from lower courses. In this sense, after this initial learning, some of them also developed a service phase to increase social awareness about the severity of the victimization by DFSA. For most of them, service's design consisted of graphic material composition addressed to the visualization of preventive messages, such as posters, cards, or pamphlets. In turn, the articulation of efforts involved the creation of materials and locate them at key areas of the school building, such as at the entrance, allowing wide dissemination of preventive messages.

2. Achieved preventive effects by actions targeted at the microsystem level.

The applied strategic thinking allowed direct transmission of preventive messages against the DFSA phenomenon to around five hundred sixty young students from both the university and the pre-university contexts. Likewise, at least thirty-six of them got active involvement in the preventive strategy, and they were mobilized as preventive agents promoting direct support against the DFSA phenomenon in their surroundings. In this way, apart from raising awareness about this form of sexual violence, the strategy also formed new social awareness agents. For this reason, although indirectly, the real number of young people actually reached by the preventive messages was probably much larger.

The preventive strategy looked for generating direct support against the DFSA phenomenon by actions targeted at the microsystem level. Developed actions were suitable for properly reaching the different elements encompassed by the routine activity theory, according to which crimes occur when likely offenders and suitable targets come together in time and place, in the absence of capable guardians [36]. Depending on the routine activity theory elements, actions targeted at the microsystem level promoted positive changes on the own microsystem or the individual level. Figure 18 compiles the positive changes favouring the prevention of the DFSA phenomenon promoted by the developed strategy on the individual and the microsystem level. These changes are related to victims, assailants, and witnesses. In this sense, preventive messages helped potential victims be aware of some important risk factors increasing their vulnerability to potential assaults, such as binge-drinking and the concurrent use of drugs [48], factors classified at the individual level of the ecological working framework [3]. Regarding potential assailants and potential witnesses, actions targeted at the microsystem level promoted positive changes on the microsystem level itself. This level encompasses the personal

interactions with others [34,35]. Thus, preventive messages helped potential future assailants to modify possible sexual behaviors fitting the DFSA phenomenon. Concerning potential witnesses of future situations fitting the characteristics of the DFSA phenomenon, preventive messages encouraged them to intervene as capable guardians for disrupting the incipient crime.

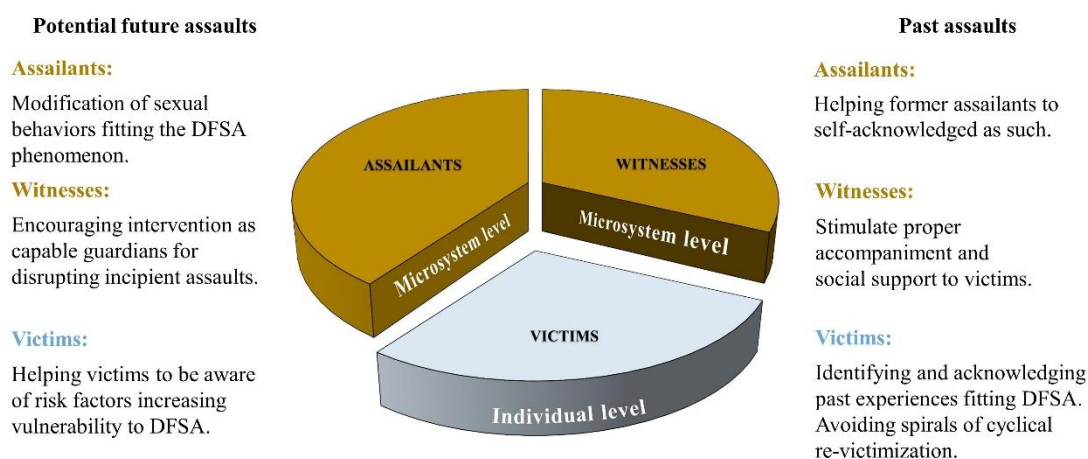


Figure 18. Positive influence on potential assailants, victims, and witnesses by actions targeted at the microsystem level. Actions for preventing the DFSA phenomenon aligned with the personal elements of the routine activity theory.

On the other hand, developed actions were not only efficient for avoiding potential future assaults but also for identifying and acknowledging possible past experiences fitting the DFSA phenomenon. Regarding victims, this step is necessary to self-acknowledged as such, report the crime to authorities, and seek adequate help for facing any possible psychological damage derived from the assault [48]. Inadequate social support and inadequate coping strategies can lead victims to suffering new assaults in a cyclical re-victimization process [48]. Likewise, reflection about the DFSA phenomenon can help third persons identify themselves as witnesses of this type of situation in the past, encouraging them to act as capable guardians in the future. Finally, educational messages can also help former assailants self-acknowledged, promoting an in-depth reflection about the need to modify their sexual behaviors.

DISCUSSION

The success of the developed preventive strategy shows the potential of the ecological working framework as a useful tool for strategic thinking focused on preventing the DFSA phenomenon. Its preventive utility is confirmed by the high participation of the youth community in designed preventive actions, which also highlights a social demand claiming an intervention facing the DFSA phenomenon. The preventive strategy comprised two stages, based on the positive feedback flow between the corners of the virtuous triangle promoting support (Fig. 15b). During

the first stage, actions targeted to generate support at the institutional level produced opportunities for strong direct support stimulation later. In this way, in the second stage, focusing on the microsystem level, the strategic thinking articulated actions for generating direct support, targeted at the routine activity theory elements. These actions looked for replacing interactions related to DFSA with supporting synergies addressed to stimulate interindividual cooperation and empathy. Depending on the routine activity theory element we consider, developed actions influenced the microsystem level or the individual level. In this sense, potential victims became aware of risk factors increasing their vulnerability to DFSA, such as binge drinking, and the concurrent use of drugs [48], aspects classified at the individual level. Likewise, actions addressed to potential assailants and potential witness influenced the microsystem level. The former were helped to identify and modify any possible behaviors fitting the DFSA phenomenon. Similarly, the potential witnesses were raised awareness to identify potential future DFSA situations and intervene as capable guardians for disrupting the incipient crime. However, this work has an even longer scope because it is not limited only to the prevention or the disruption of future assaults but also to promote adequate accompaniment to victims after suffering an assault. In this sense, direct support also includes assisting victims with proper help after suffering a violent episode [3], which is essential to favour adequate coping strategies and avoid secondary victimization and spirals of cyclical re-victimization [48]. Within the educational system, starting at the post-degree level and reaching the secondary school, in-depth reflection and critical thinking were promoted about some youth leisure behaviors related to DFSA, such as sexual interaction under the effects of psychoactive substances. In this way, preventive messages directly reached around five hundred sixty young students from both the university and the pre-university context. This strong verticality reached four different educational levels going beyond the university boundaries, from the university context with post-degree and degree students to the pre-university with students belonging to high school and secondary education.

Strategic thinking involved several crucial elements for the success of the preventive strategy. As the population group mainly affected by the DFSA phenomenon, strategic thinking included the active mobilization of young people as preventive agents facing this social issue. Indeed, university campuses is one of the settings more usually related to female victimization by DFSA [38-40]. For that reason, the educational system was considered as a suitable context for developing preventive actions. Furthermore, several educational and communicative resources were used as tactical elements for improving the transmission of preventive messages within the youth community, such as the service-learning pedagogy and the peer-to-peer

communication technique. However, apart from raising awareness about the problem, these resources also allowed young people to be empowered as new social awareness agents. The service-learning pedagogy had a powerful inspirational force. It triggered a vertical ripple effect within the educational system, encouraging the mobilization against the DFSA problem beyond the university context. Likewise, first-year degree pharmacy students were a suitable group for encouraging preventive efforts within the educational system. They had an adequate age to avoid generational barriers when bringing the preventive message to high school students. Moreover, lines of interest for the project about the DFSA phenomenon fitted specific curricular skills of pharmacy students [49,50], a requirement for implementing the service-learning pedagogy [51].

On the other hand, beyond actions realized by professors and students within both university and pre-university contexts, the forensic scientist played a crucial role in developing the preventive strategy. During the two stages of the strategy, this agent supplied professors and students with critical information for decision-making processes to prevent the DFSA phenomenon. In this way, from a strategic location, the forensic scientist participated in a collaborative inter-professional dialogue, acting as a focal point of information useful for designing and articulating the preventive strategy. Through the ecological working framework, the forensic scientist provided professors and students knowledge about the DFSA phenomenon coming from forensic and criminological studies, as well as strategic advice about important steps and work lines to be addressed to face the DFSA phenomenon. Therefore, this study shows a wider perspective of forensic science, beyond the traditional and dominant view characterized by narrowness and fragmentation, envisaging it as a patchwork of sub-disciplines oriented to the past with the only purpose of assisting the court in a specific crime [52]. This broader contribution is based on a proactive application of forensic knowledge to crime prevention and security enhancement, hand in hand with forensic intelligence. However, the research on forensic intelligence up to date has been usually restricted to its application to police-led-intelligence [5,25,27,53-59]. Despite this, forensic intelligence perspective has the potential to be generalised [25]. It is an emerging form of intelligence [32], and whose meaning and value is yet to be widely understood [60]. Within this growth and defining phase, this work shows as forensic science and criminology cross their hands to contribute to a new forensic intelligence perspective. On the one hand, through the developed preventive strategy against the DFSA problem, involving drug use and sexual violence, this work studies the potential contribution of forensic intelligence to public health, a promising relationship that remains relatively unexplored [61]. Likewise, beyond its usual role in police-led intelligence situations,

this work explores the collaboration between forensic intelligence and other professions related to security, a promising relationship already observed by other authors [27,32,62,63]. As observed through this work, the knowledge provided by forensic intelligence can influence policy decisions and social actions on diverse phenomena, inspire political agendas, reshape professional practices, support project allocations, and educate people [27,64,65]. Consequently, there are a diversity of audiences potentially interested in forensic intelligence, such as government bodies, political leaders or civilians [27]. This observation expands, even more, the idea consisting of forensic intelligence spans the continuum between forensic sciences informing law enforcement investigations or military intelligence through to prosecution in the criminal justice system [66]. Indeed, other authors have already pointed out strategic forensic intelligence can take a longer-term proactive approach to inform decision-making and strategic policy [66]. Beyond judicial, police, and military authorities, this work proposes, for the first time, a further complete extension of forensic intelligence applicability that reaches civilian society. The civil population directly involved professors and students as decision-makers, anticipating both the crime as the need for intervention by law enforcement and courtrooms. This is strategic intelligence, future-oriented and proactive, focused on exploring long-term solutions [24,31]. As such, the preventive strategy developed in this study strongly aligns with various challenges currently acknowledged by the global community through the 2030 Agenda for Sustainable Development [67] and the United Nations Youth Strategy [68].

Providing phenomenological knowledge from forensic data, forensic intelligence establishes an evidence base for supporting proactive crime prevention strategies [24,27]. Therefore, the forensic intelligence perspective allows a widened preventive contribution of forensic science, expanding its role and integrating it into proactive security studies [28,29]. However, apart from the information resulting from forensic casuistry, the ecological working framework also includes information from criminological studies [37,40,69-79]. Both disciplines, forensic science and criminology, work on crime as a common study object. However, they suffer from a significant lack of knowledge sharing each other, which supposes an important weakness in the response to crime [80]. Likewise, as with forensic science, there is also a call of attention for greater criminology involvement in crime prevention policy development [81-84]. Criminology is being encouraged to be public-oriented and to engage in building a broad and forward-looking evidentiary base for innovation in justice policy [83] and promote “social justice and human rights” [85]. Based on these calls for change affecting both forensic science and criminology, and the lack of knowledge sharing between both disciplines, it has been postulated the need for a

criminological and forensic synthesis [86], pointing that the reconstruction of both disciplines forces their reconfiguration into a structure of dynamic integration [80,86]. In this sense, the ecological working framework applied in this study also favors interdisciplinary dialogue. Few methods have been proposed for favoring this interdisciplinary dialogue between forensic science and criminology [26]. However, certain parallelism is observed between previous proposals and the double functionality of the ecological working framework. As previously commented, the framework is useful both as an intelligence strategic framework for designing and articulating preventive efforts facing a specific crime phenomenon, the DFSA, and as a guide for the in-depth study of the factors involved in this form of sexual violence [3]. As occurs with the ecological working framework, a method proposed for favouring the interdisciplinary dialogue between forensic science and criminology also gathers and analyzes relevant information from both crime-related areas about a specific crime phenomenon to develop later well-targeted evidence-based preventive solutions [26]. Therefore, including the forensic intelligence perspective, the ecological working framework is a suitable rendezvous point for both disciplines, forensic science and criminology, facilitating sharing knowledge and providing excellent crime prevention results.

CONCLUSIONS

A recently developed ecological working framework about the female victimization by DFSA was successfully applied to the design and articulation of a preventive strategy facing this form of sexual violence in young leisure nightlife contexts. The strategy used the double functionality of the ecological working framework, applied both as an intelligence strategic framework and as a guide for understanding the DFSA phenomenon. As such, the action lines defined by the framework oriented well-targeted and evidence-based strategic thinking. The dynamic of positive feedback flows within the virtuous triangle promoting support allowed a strong stimulation of direct support through previous efforts to generate institutional support. The strategic thinking involved the use of various educational and communicative resources as tactical elements to enhance awareness and the transmission of preventive messages within the youth community. By targeting preventive efforts to the microsystem level of the ecological working framework, the educational messages and the raise awareness actions reached the three personal elements of the routine activity theory: assailants, victims, and witnesses. As a result, through a vertical intervention within the educational system using the service-learning pedagogy and the peer-to-peer communication technique, preventive messages against the DFSA phenomenon reached more than five hundred students from both the university and the pre-university level. A forensic scientist who participated in the study played a key role by

providing forensic intelligence or phenomenological information critical for strategic thinking and decision-making. This inter-professional effort through a proactive forensic intelligence focussed on crime prevention shows the potentially wider contribution of forensic science, beyond the traditional role characterized by the retroactive view limited to courtrooms. In this line, this work increases knowledge about the potential contribution of forensic intelligence to public health policies addressed to crime prevention. In turn, this study proposes a further extension of forensic intelligence use beyond its traditional use by judicial, police, and military authorities. Civilian society members become decision-makers, anticipating both the crime and the need for intervention by law enforcement and courtrooms. Finally, the ecological working framework is a suitable rendezvous point for forensic science and criminology, providing a bridge that favors the transdisciplinary dialogue between both crime-forensic disciplines. Through this knowledge sharing, both disciplines can support and strengthen each other, joining forces as a promising and more efficient step forward for studying and preventing crime.

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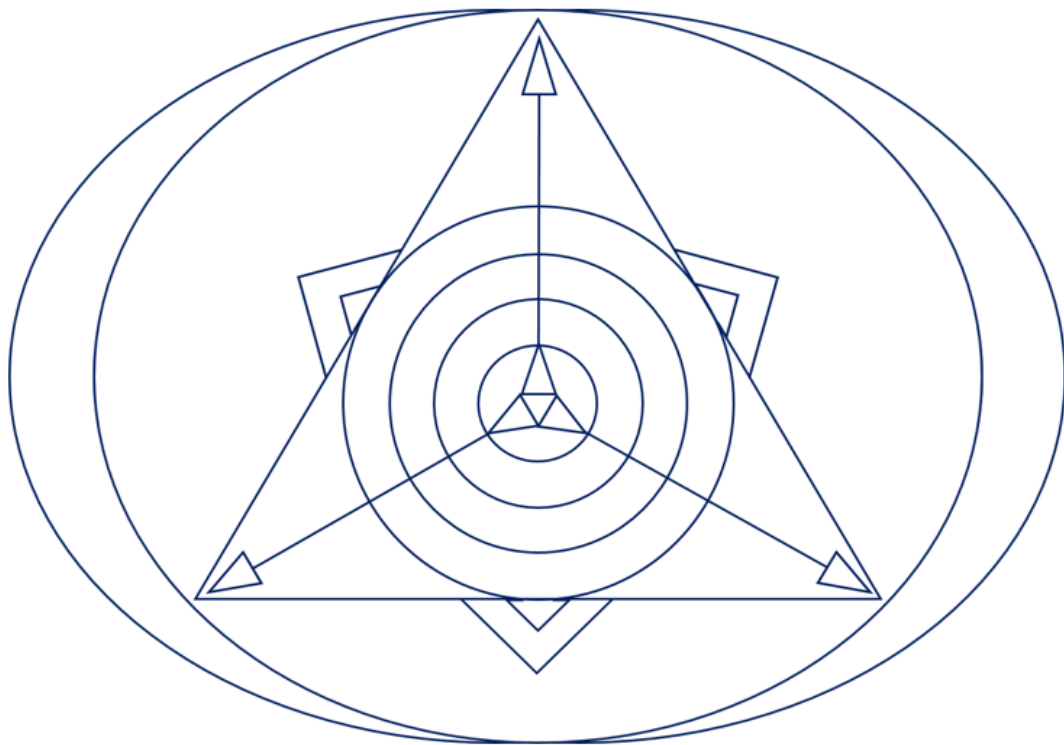
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CHAPTER 4

Generating Support: Institutional Dimension of DFSA



4.1. Institutional Support. Founding.

This first sub-section within Chapter 4 compiles the actions seeking financing performed during this Ph.D.'s development, efforts that involved submitting various grant applications for research projects focused on the DFSA phenomenon and research-stays in official institutions related to the prevention and judicial investigation of the study problem. Reminding the three-stratum model [1], support resulting from these earliest actions at the institutional level, the intermediate stratum, allowed articulating the specific preventive efforts described in Section 4, targeting the most superficial stratum, the direct level.

GRANT APPLICATIONS FOR SUPPORTING RESEARCH PROJECTS ABOUT THE DFSA PHENOMENON

Actions focussed on strengthening institutional support to generating solutions to the DFSA phenomenon involved six grant applications for research projects. Five of these proposals were approved. The sixth, although positively evaluated (13,5 over 15,0), was not finally funded due to a lack of budget. These six projects involve two different work areas. On the one hand, four educational projects focused on increasing awareness among young students within the university context about the DFSA phenomenon's severity. On the other hand, two other projects studying the forensic casuistry of the DFSA phenomenon. The educational and awareness projects' framework was essential for the work included in chapters 2 and 3, focused on generating cultural and direct support to solutions facing the DFSA phenomenon. In turn, projects studying forensic casuistry allowed developing two different works included in chapters 4 and 5.

1. Educational and awareness projects.

The educational and awareness projects about the DFSA phenomenon started with the support of the Vice-Rector's Office for Teaching and Students of the University of Alcalá. A first application was submitted under the resolution published by this entity on September 14th 2017, calling for projects to encourage innovation in the teaching-learning process [2]. This first proposal, entitled "First course's chemistry subject in various degrees as an opportunity for implementing the service-learning pedagogy about DFSA" (UAH/EV951), was approved by the evaluation commission through the resolution published on November 7th 2017 [3]. Subsequently, the original project's reformulation was submitted to a new open call during the course 2018 – 2019 [4], on that occasion organized by the Vice-Rector's Office for Strategy and Planning. The new proposal, entitled "Service-learning about the DFSA problematic: collaborative and interdisciplinary action between several degrees with vertical and horizontal coordination" (UAH/EV1024), was approved through the final resolution published on

September 11th 2018 [5]. Likewise, the evaluation commission awarded the proposal's particular interest, acknowledging it as an "Innovative Action with Institutional Impact" [6], which resulted in more extensive institutional support. As such, financial support increased from 150 to 1500 euros between 2017 and 2018's calls, respectively. Both projects fitted the three priority lines highlighted by the Vice-Rector's Office. Firstly, developing actions that incorporate methodological and evaluation strategies favoring competencies and particularly proposals related to service-learning pedagogy. Secondly, designing and implementation of new technologies applied to teaching. Thirdly, implementing innovative actions and proposals leading to integrating knowledge and interdisciplinary efforts in degree and post-degree programs.

Actions targeting institutional support to generating solutions facing the DFSA phenomenon went beyond the local sphere of the University of Alcalá. In this sense, a third application was submitted to National Drugs Plan, an entity belonging to the Ministry of Health, Social Services, and Equality of the Spanish Government, under the umbrella of the open call to financial support for developing research projects about addictions in 2018, published on August 31st 2018, in the Spanish Official State Bulletin [7]. The call valued proposals fitting priority lines defined by the National Strategy on Addictions 2017 – 2024 [8], especially projects including a gender-based perspective in research politics about addictions. The project's thematic line, focused on the DFSA problem, excellently fitted this priority. In this way, the proposal entitled "Evaluation and educational intervention for preventing drug use and sexual violence in leisure nightlife contexts" was approved through the resolution published on December 11th 2018 [9]. The project identification's code was MSCBS-PNSD-2018/032, receiving total financial support reaching 92,000 euros. The institutions composing the research team comprised the University of Alcalá and the INTCF, belonging to the Justice Ministry of the Spanish Government.

2. Projects studying forensic casuistry.

The initial institutional support to the generation of solutions facing the DFSA phenomenon also involved two other research projects studying forensic casuistry. The University Institute of Research in Police Sciences supported both of them. This is a teaching and research center under the University of Alcalá and the Secretariat State for Security belonging to the Spanish government's Ministry of Interior [10]. The first project, identified with the code IUICP/PI2016/002 and entitled "General screening of toxics by LC-Q-TRAP-MS in total, plasma and serum blood", was supported with a total grant of 6,000 euros. This project encompassed the INTCF, the General Scientific Police's Commissariat, and the University of Alcalá. On the

other hand, the second project, identified with the code IUICP/PI2019/006 and entitled “Identification of risk factors in cases of DFSA from forensic and police data”, was supported with 10000 euros. This second project encompassed the participation of the Guardia Civil’s Criminalistic Service, National Police and the University of Alcalá.

GRANT APPLICATIONS FOR RESEARCH-STAYS IN GOVERNMENT INSTITUTIONS

The first actions for generating support to solutions facing the DFSA phenomenon also involved grant application for research-stays in different government institutions. In this sense, on April 22nd, 2019, the University of Alcalá’s Vice-Director’s Office for Research and Transference approved a mobility grant for conducting a research stay in the United Nations system [11]. Concretely, in the Liaison and Partnership Office of the UNODC for Latin America and the Caribbean [12]. The stay involved two working areas: the Gender and Justice Project [13] and the CoE [14]. Both UNODC and the University of Alcalá supported this stay, expanding the institutional support to solutions to the DFSA phenomenon. Besides, in the framework of the two projects granted by the University Institute for Research in Police Sciences, two research-stays were developed in the INTCF [15]. As will be seen, these stays allowed the youth community to strengthen institutional support facing the DFSA phenomenon by working from inside government institutions.

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4.2. Development Cooperation from Strategic Positions within the Liaison and Partnership Office of UNODC for Latin America and the Caribbean.

This thesis started in the Agenda's dawn, only a few months after its publication by the United Nations General Assembly on September 25th, 2015 [1]. For this reason, from its beginning, this thesis walked hand in hand with the Agenda. This joint trip also involves current challenges regarding development cooperation defined by the Agenda. The SDGs and their targets become meeting points of strategies and politics from different countries, facilitating identifying common priorities [1]. In this sense, this thesis aligns with development cooperation from the Spanish arena, framed by the Master Plan for Development Cooperation 2018 – 2021 [2]. This Plan aims to contribute to implementing the 2030 Agenda as a new commitment and international strategy for achieving SDGs [2]. Spanish cooperation mission focuses on supporting the SDGs' achievement, which involves reducing inequalities, to uphold human rights and fundamental freedoms [2]. The Plan assumes the Agenda's critical importance areas, including People and Global Partnership, especially relevant in this thesis. Moreover, the Plan adopts the first sixteen SDGs as its strategic aims and establishes twenty-nine 2030 Agenda's targets as its specific aims. Likewise, the Spanish political cooperation shares the Agenda's statements about the critical role of the civilian society, young people, and academic community in achieving sustainable development and the need to pull together toward building a better world through strong partnerships between all stakeholders [2]. The Plan looks for promoting the building and strengthening of partnerships with different actors committed to the SDGs, including mobilizing the Spanish civilian society's support for achieving sustainable development [2]. At this point, considering the Spanish Plan's implementation period, between 2018 and 2021, we must highlight that this program runs during this doctoral thesis's conduction, developed from 2016 to 2021. Therefore, both documents overlap in time. In this sense, following the 2030 Agenda, the Master Plan for Development Cooperation includes a human rights-based approach, youth, and gender perspectives as Spanish cooperation's transversal elements [2]. These three first principles are also fundamental pillars in this thesis (see Sections 1 and 2). Likewise, the work developed aligns with some of the Spanish cooperation's main challenges. Concretely, achieving progress towards gender equality and respect for human rights by strengthening work focused on preventing violence. In this way, this thesis provides specific contributions to Spanish cooperation's work lines through the international volunteering stay in the Liaison and Partnership Office of UNODC for Latin America and the Caribbean, one of the priority regions for strategic action defined by the Spanish Plan for cooperation. During the research stay in the United Nations system, young university students' cooperative work within this thesis' frame adjusted to three action lines of the Spanish Plan for Development Cooperation. Firstly, the work fits the line 5.2.A., contributing to creating frameworks for protecting and ensuring the rights of women victims of gender-based violence. Line 5.2.A. of the Spanish Plan for cooperation

considers the development of awareness-raising strategies focused on gender-based violence [2]. This action line is included in the 2030 Agenda's Target 5.2, which aims to eliminate all forms of violence against all women and girls. Target 5.2 takes part in the SDG 5: Gender equality and women's empowerment. Secondly, the work fits the line 3.8.B., strengthening access to reproductive and sexual health. Line 3.8.B. focuses on ensuring support to women's specific needs by defending their sexual and reproductive rights [2]. This action line is included in the 2030 Agenda's Target 3.8, which aims to contribute to universal health coverage. Target 3.8 takes part in the SDG 3: Health and wellbeing. Third, the work fits line 16.1.B., which works for preventing violence through strengthening bodies operating in social field and security, by actions targeted to young people and based on peace culture, fomenting participatio [2]. This action line is included in the 2030 Agenda's Target 16.1, which aims to significantly reduce all forms of violence everywhere. Target 16.1 takes part in the SDG 16: Peace, justice and strong institutions.

On the other hand, it is essential to highlight that this collaboration between young students from the university context and the United Nations system constitutes a practical example of the spirit of global solidarity and partnership demanded by the 2030 Agenda as a crucial element for achieving sustainable development [1]. The implementation of all SDGs and targets requires a revitalized partnership and an intensive global engagement, bringing together different stakeholders, including civil society, the scientific and academic community and the United Nations system [1]. The latter plays a fundamental role in this labor because of its worldwide presence, which facilitates means for implementation and global partnership. In this sense, the Liaison and Partnership Office of UNODC for Latin America and the Caribbean, located in Mexico, plays a strategic role in the region. Following this thesis's connecting thread, working from this key position within the United Nations system constituted an exercise of strategic thinking for going even further in facing the DFSA phenomenon. This chapter describes efforts and works developed within this thesis framework during the participation of young university students as voluntary cooperators in the United Nation System. These efforts resulted from working at two specific positions in the Mexican UNODC office. On the one hand, the Gender and Justice Project [3]. On the other hand, the Victimization Laboratory [4] of the CoE [5]. Below, this chapter shows actions developed during this thesis within the collaboration's framework with the United Nations System. Figure 19 illustrates the actions developed in each strategic position within the Liaison and Partnership Office of UNODC in Latin America and the Caribbean and the corresponding action level.

Working from the Liaison and Partnership Office of UNODC for Latin America and the Caribbean	
Center of Excellence in Statistical Information on Government, Crime, Victimization and Justice	Action level
Proposal to consider the victim's state of vulnerability in the Latin America and the Caribbean Crime Victimization Survey Initiative	Latin America and the Caribbean (Regional Level)
Gender & Justice Project of the UNODC	
Proposal of a new model for preventing the DFSA phenomenon	United Mexican States (Mexico – National Level)
Proposal for including a more in-depth view on the DFSA phenomenon during the investigation of alleged rape cases	Nuevo León State (Mexico – Statal Level)

UNODC: United Nations Office on Drugs and Crime

Figure 19. Actions developed within the Liaison and Partnership Office of UNODC in Latin America and the Caribbean.

INTERNATIONAL STAY IN THE GENDER AND JUSTICE PROJECT OF UNODC

The Gender and Justice Project was one of the main components of the Penal Justice work area in the Office of UNODC for Latin America and the Caribbean [6]. Among other things, this area supported implementing the United Nations’ Rules and Regulations regarding Crime Prevention [6]. In this context, the Gender and Justice Project aimed to strengthen mechanisms for preventing, caring, punishing, and eradicating crimes against women. Its implementation period encompassed three years, from 2017 to 2020, being Mexican women and girls the beneficiary population [6]. In this thesis context, the cooperation with the Gender and Justice Project involved two main tasks. On the one hand, the first task involved working in the Nuevo León State context, one of the Mexican federal entities. This task targeted including a new approach about the legal investigation of alleged DFSA cases into the draft document of the protocol entitled “*Protocolo de investigación ministerial, policial y pericial con perspectiva de género y derechos humanos del delito de violación en el Estado de Nuevo León*” [7]. This Protocol guided prosecutors, police, and forensics during rape crimes. The review task resulted in a new proposal for including a more in-depth view on the DFSA phenomenon during the investigation of alleged rape cases. On the other hand, the cooperation with the Gender and Justice Project involved a second task. In this lien, as a result of reviewing the document entitled “*Modelo Integral para la*

Prevención de Conductas de Riesgo en Adolescentes a través del Fortalecimiento Familiar. Construyendo caminos" [8], a new innovative model was designed and proposed for preventing the DFSA phenomenon at the national level in the Mexican context. The proposed new model uses various pre-existing institutional structures for mobilizing young people's public participation and involvement in preventive actions facing drug use and sexual violence. Overcoming both social problems becomes the model's main aim. They constitute the two intersectional components of the DFSA phenomenon and seriously affect young people's lives. For that purpose, the proposal focuses on strengthening community cohesion and reach young women and men from different ages, contexts, and social realities. It is crucial to highlight that this first task significantly adjusts to the Spanish Plan for cooperation, which notes the need to implement new models for sustainable development to strengthen a higher social cohesion in countries from Latin America and the Caribbean. Indeed, based on its development level, the Spanish Plan classifies Mexico as one advanced cooperation country.

1. Approach to the DFSA phenomenon in the Nuevo León State.

Violence against women is a severe problem affecting Mexico. Around 66 % of Mexican women aged 15 or older declared in 2016 have suffered sometime in their lives from economic, psychological, sexual, or physical violence. Regarding sexual violence, 34 % of women stated they had suffered it in public or community spaces [9]. These data show that violence against women is a huge problem and a social practice widely extended across the country [10]. In this sense, actions described in this chapter focus on Nuevo León, one of the thirty-two states comprising the Federal Entities of Mexico. This northeast state is composed of fifty-one local governmental units or municipalities, being Monterrey the capital [10, 11]. According to the Mexican National Institute of Geography and Statistics, the total population was about 5,784,000 in 2020, with 50 % women [12]. Figure 20 shows the geographical location of Nuevo León State within the region of Latin America and the Caribbean.

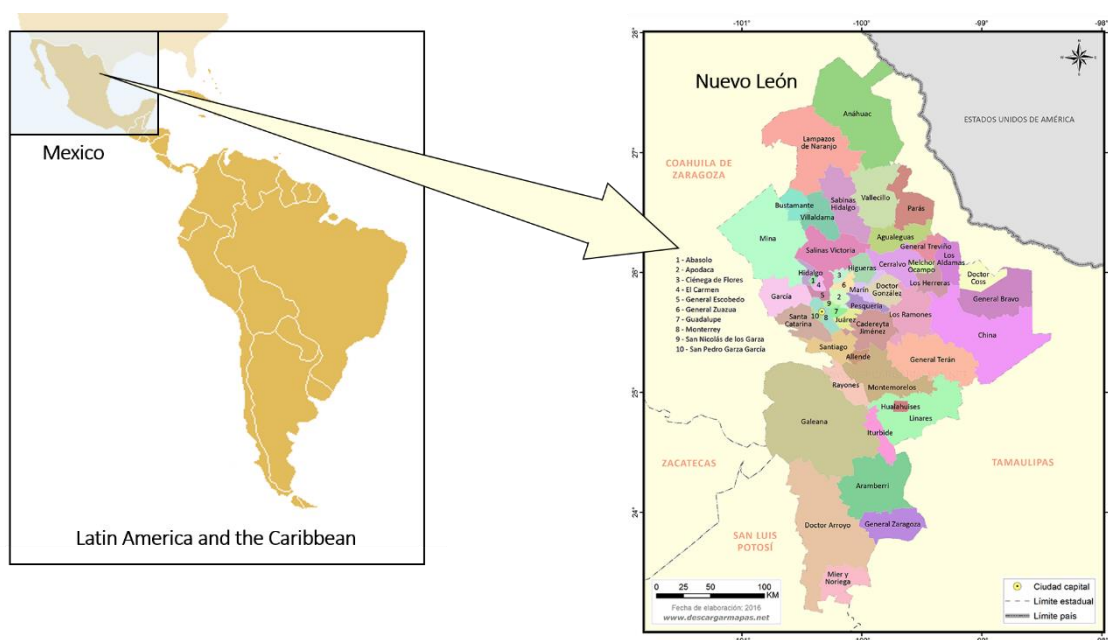


Figure 20. Geographical location of Nuevo León State.

Nuevo León is the Mexican state with the lowest level of poverty [13]. As such, the urban population reaches 95 %, while only 5 % living in rural areas [14]. However, around 20% of the population lives in poverty and 1 % in extreme poverty [15]. In this context, a dire situation of violence against women has affected Nuevo León during the last years. In 2016, around 59 % of women aged 15 or older declared have suffered from violence sometime in their lives, which corresponds to six out of ten women [9]. In this line, 44 % of women aged 18 or older living in Nuevo León in 2017 stated that their area or locality was unsafe. Around 61 % had this opinion about their municipality, and 78 % regarding their state. These values were between ten and thirteen times lower for men, which shows a higher women's insecurity perception regarding the environment where they live [16]. In this sense, 36 % of women from Nuevo León aged 15 or older declared have suffered from violence within the community setting, 23 % within the work environment, and 7 % within the family circle. Likewise, regarding violence perpetrated by other assailants different from the partner, sexual violence is the more frequent type. Within this category, 49 % of women from Nuevo León aged 15 or older declared have suffered from sexual violence by assailants who were not their partners [16]. On the other hand, based on Nuevo León State's Attorney General's Office data, family violence constitutes 86 % of total crimes reported by women in Nuevo León between 2008 and 2017 [17]. Regarding sexual violence, when considering crimes different from family violence, indecent assault, sex with minors, and sexual harassment represent 47 % of total crimes reported by women in Nuevo León during that period. In turn, rapes ascend to 32 % [17], although we should not forget the high dark figure associated with this crime [10]. According to this data source alternative to

official crime and victimization surveys, the trend of registered female victims of violence between 2011 and 2016, including rape crimes, shows steady year-to-year growth, with an almost 100 % increase between 2011 and 2016. Therefore, based on this joint look resulting from victimization surveys and State's Attorney General's Office data, it is possible to observe that sexual violence against women, including rapes, is a tangible reality in Nuevo León State [10].

Given the above background, on November 18th, 2016, the Ministry of the Interior, through the National Commission for Preventing and Eradicating Violence against Women, stated an Alert Declaration of Violence against Women in five Nuevo León's municipalities: Apodaca, Cadereyta Jiménez, Guadalupe, Juárez y Monterrey [18]. This measure resulted from the General Law for Women to Access to a Life Free of Violence [19], which establishes the possibility of declaring this type of alert as a mechanism targeting women's security, ending violence against women and eliminating inequalities violating their human rights. In order to face and eradicate violence in a specific territory, this official mechanism provides several emergency governmental measurements involving actions regarding security, prevention, and justice [20]. In this sense, justice efforts are especially interesting within this chapter's context as they include:

1. Taking necessary steps to ensure the diligent and exhaustive investigation and resolve all alleged crimes related to gender-based violence, access to justice, and damage repairing. Achieving this measure depends on developing protocols providing investigative authorities with action lines, as well as of training of public officials.

2. Strengthening the Prosecutor's Office for Women's Affairs, ensuring officials trained about women's human rights, and gender-based perspective investigation.

On the other hand, in 2017, Nuevo León state authority published its Statewide Program for Preventing, Caring, Sanctioning, and Eradicating Violence against Women 2017 – 2021 [21]. Among other things, this program aims to ensure comprehensive care of women victims of violence by accessing free, efficient, and quality services, as well as guarantying an efficient access to justice from a gender-based and human rights perspective [21]. Concurrently, the National System for Preventing, Caring, Sanctioning, and Eradicating Violence against Women highlighted the need for coordinating inter-institutional actions targeted to starting a strategy for preventing, caring, sanctioning, and eradicating violence against women. In this regard, the Nuevo León State's Women Institute and UNODC signed in 2018 a Collaboration Agreement Framework, encompassing the Nuevo León State's Attorney General's Office [22]. According to

this agreement, UNODC must provide technical support to the actions regarding justice planned by the Alert Declaration of Violence against Women in Nuevo León [22]. This technical support adjusts to the efforts previously highlighted as especially interesting within this chapter's context: ensure the diligent and exhaustive investigation of all alleged crimes related to gender-based violence, the development of investigation protocols and the proper training of public officials [22]. Within this collaboration framework, in 2018, the Gender and Justice Project belonging to the Liaison and Partnership Office of UNODC for Latin America and the Caribbean designed a new protocol to guide prosecutors, police, and forensics from Nuevo León during the legal investigation of rape crimes. The draft document, entitled "*Protocolo de investigación ministerial, policial y pericial con perspectiva de género y derechos humanos del delito de violación en el Estado de Nuevo León*" [7], aimed to become a useful tool for justice system workers while discharging their duties for investigating, establishing guidelines and methods for the efficient investigation of rape crimes. The manuscript provided investigative authorities with action lines for rape cases to contribute to applying a gender perspective and the full respect for human rights during the clarification of the facts [7].

In light of the above, a first task involving cooperation with the Gender and Justice Project consisted of reviewing the previously commented protocol draft from the DFSA phenomenon's perspective. The protocol focused mainly on guiding prosecutors' actuation as an essential component of the named "investigative trilogy", also integrated by police and forensics. In this sense, the manuscript established that after a report of alleged criminal facts consistent with a rape crime, prosecutors, in coordination with police and forensics, configured the "investigative trilogy", ordered, and implemented all useful and necessary legal proceedings to the clarification of facts [7]. According to the protocol, prosecutors led the process, exploring all possible investigation lines. They might elaborate an investigation plan and follow a strategy to formulate and build a solid case theory. For that purpose, the protocol focused on several basic intervention standards during the investigation of alleged rape cases. Two of these standards were especially relevant regarding reviewing the document draft from the DFSA phenomenon's viewpoint: investigating applying a gender-based perspective and a differentiated and intersectional focus. Below, a brief description of them based on the Protocol.

Gender-based perspective. The obligation of applying a gender-based perspective adjusts to the international standard protecting women's human rights [23]. Resulting from applying this approach in a working framework characterized by a general context of violence against women, the investigation acquires an additional scope when the victim of violence is a woman [24]. In this way, the study of the criminal facts from a gender-based perspective allows

identifying how the crime has a different impact on women and men. Among other factors, such as an in-depth analysis involves processing and carefully dissect the criminal facts based on their particularity, context, family relations, gender roles, and power balance or unbalance between women and men [7]. Within the Protocol, incorporating this gender-based perspective in actions developed by prosecutors focused on preventing discriminatory socio-cultural patterns from influencing the report process and investigation negatively [7].

Differentiated and intersectional focus. The protocol insisted on applying an intersectional focus as a study tool useful for differentiating how discrimination and violence against women depend on other intertwined factors. In this sense, rape victims have not a homogeneous profile. They can proceed from different contexts, environments and origins, and a wide range of vulnerability factors can affect their experiences [7]. The intersectional analysis helps us to understand the convergence of gender with other vulnerability factors contributing to increasing discrimination and creating oppression experiences. Among other aspects, it is necessary to consider specific features of each population group and the increased vulnerability because of attributes such as age, gender, sexual orientation, ethnicity, disability, geographic origin, relationship with the assailant, and psychological profile [7]. Everybody can suffer from sexual violence and, more specifically, become victims of rape. However, certain population groups present a higher vulnerability, so they are more susceptible to experience this type of violence—for example, women, children, teenagers, and people with disabilities. In this way, applying an intersectional focus aims to provide specialized care by authorities, adjusting to victims' particularities and vulnerabilities [7]. These additional vulnerability factors can result in specific circumstances affecting the investigative frame and needing special consideration. Below, three specific circumstances compiled by the Protocol that can difficult the investigation.

1. Victims do not want to declare. This situation can result from victims' traumas derived from the assault, shame, mistrust regarding institutions responsible for justice administration or to avoid the re-victimization resulting from the criminal proceeding [7].

2. Victims' reports not immediately after the assault. Obtaining pieces of evidence is a complicated task in rape cases because of different material and formal difficulties affecting the investigations, which significantly increase because of victims' delay in reporting the assault. A wide variety of reasons can explain this delay, such as minors' difficulties to report, increased when the assailant is someone known [7].

3. Victims who did not resist the assault. Criminal facts can result from a coercive environment created by the assailant, including a wide variety of factors contributing to

disabling the victim to resist the rape physically. In this sense, international standards establish the absence of free, voluntary, and unequivocal consent as the main element configuring the rape crime, so victim resistance is irrelevant for sexual violence [7].

These three circumstances included in the Protocol were extremely relevant when reviewing the draft document from the viewpoint of the DFSA phenomenon. Regarding points nº 1 and 2, as described in Chapter 4, female victims of DFSA face serious difficulties to acknowledge themselves as victims, seek adequate help, and report the assault to authorities [25]. In turn, regarding point nº 3, the absence of the victim's resistance to the assault is an essential feature of the DFSA phenomenon. Assailants take advantage of the victim's incapacity derived from psychoactive substances' effects to perpetrate the assault [26]. At this point, it is crucial to highlight the parallelism between violence suffered by people with disabilities according to the Protocol and victims of DFSA. Below, Protocol's description of the victimization of people with disabilities:

“People with disabilities are those with physical, mental, intellectual, or sensory impairments, permanent or temporary, limiting their capacity for realizing one or more essential activities of daily life. The economic and social environment can produce these disabilities or increase them [27]. Among other things, the main factors of their particularly vulnerable situation potentially contributing to victimization include lower least capacity to defend themselves, increased difficulty communicating, and the usual attribution of lesser credibility to their story of the facts [28]” [7].

From the viewpoint of the DFSA phenomenon, a careful reading of this description allows observing that the reality described within the Protocol for people with disabilities overlaps with the experience of victimization undergone women victims of DFSA. In this specific form of sexual violence, victims experience a temporary disability because of the effects of psychoactive substances, which reduce their capacity to defend themselves from potential assailants and communicate efficiently to provide free, voluntary, and unequivocal consent to sexual intercourse. Likewise, stories of women victims of DFSA receive lesser credibility because of the usual difficulties related to these cases, including amnesia and the lack of memories about the assault, the absence of physical injuries, and the social questioning regarding drug use and sexual interrelation [25]. Besides, the Protocol included other interesting considerations concerning rape cases in which victims did not resist the assault:

“Likewise, the violence inflicted by the assailant in rape cases not necessarily causes physical injuries. It can be observed through actions implying victims' material submission and

obliging them to sexual intercourse without consent. In this sense, psychological forensic tests can prove psychological or moral violence” [7].

Although the description of the above paragraph aligns with some difficulties usually faced by women victims of DFSA, like the absence of physical injuries, the Protocol did not include specific references to the influence of psychoactive effects of alcohol, illegal drugs, or pharmaceuticals in the context of victimization by rape. However, as a ubiquitous and socially widespread factor, authorities should specifically consider the influence of psychoactive substances during the investigation phase of alleged experiences of victimization by sexual violence, including rape. This observation is hugely reasonable, considering the psychoactive substances' high potential to affect the victims' capacity to consent to sexual intercourse. As a widespread social factor, the need for considering the influence of psychoactive substances during the investigation of rape cases adjusted to the Protocol's statements about the relevance of studying the violence context:

“Consideration of the context in which violence happens within the investigation's framework. For identifying investigation lines, it is important to analyse the victim's context and environment. (...) A social anthropology examination is useful for making visible contexts affecting victims and victimization practices inflicted on them and sociocultural factors, or any other allowing, encouraging or generating the crime [27]” [7].

To be faithful to this need for considering the context, the Protocol's review process from the DFSA phenomenon's perspective examined psychoactive substance use practices in Nuevo León. Concretely, the analytical view focused on alcohol's social presence, as a legal abuse drug quickly available and easily accessible. This exercise targeted making visible the need for incorporating within the Protocol a more in-depth view about the DFSA phenomenon and the influence of psychoactive substances when investigating alleged rape cases.

The consumption of alcoholic beverages is the main problem of psychoactive substance use in Mexico, significantly increasing since over a decade ago [30]. In this sense, the past month prevalence of alcohol use duplicated between 2002 and 2011, rising from 7 % to 14 % [30]. Furthermore, a notable increase in alcohol use also has been observed between 2011 and 2016 regarding excessive consumption during the last year, during the last month, and the consuetudinary and daily consumption. According to the National Survey about Drugs, Alcohol and Tobacco Use developed in 2017 by the National Commission Against Addictions [31], this increment affects both women and men, as well as adults (aged 18 - 65) and teenagers (aged 12 - 17). In this sense, the survey results highlight the particular increase in alcohol consumption

among women, especially adolescent girls [31]. This population group has experienced the proportional highest growth regarding alcohol use, nearing male prevalence [31]. In fact, risky alcohol use during the last month and the last year soared among women aged 12 to 17 between 2011 and 2016. Through that period, risky alcohol use during the last month increased more than three times, from 2.2 % rising to 7.7 % [31]. Similarly, consuetudinary alcohol use also augmented significantly. Male and female values raised to 4.4 % and 3.9 %, respectively. Likewise, daily alcohol consumption increased more than eight times between 2011 and 2016 [31]. On the other hand, regarding Nuevo León, the prevalence of alcohol use during the last month reaches 44.6 %, exceeding the national average. Moreover, compared with the whole country, this state has the highest prevalence of risky alcohol use during the last month, reaching 30.3% [31]. Data vary by gender. In this sense, the prevalence of risky alcohol use during the last month reaches 44.8 % among men, the country's highest rate, whose average value is 29.9 %. In turn, the prevalence of risky alcohol use among women from Nuevo León during the last month reaches 16.2 %. This is the second-highest value among women from all Mexican states and exceeds the national average of 10.3 % [31]. In conclusion, results from the National Commission against Addictions study show an increase in risky alcohol patterns involving both men and women at a national level and in the Nuevo León state. In fact, this northeast Mexican state has one of the highest prevalences of risky use of alcohol by women.

According to the study, these results make visible the need for strengthening preventive efforts applying a gender-based perspective mainly targeted to the female population, which has a more dynamic growth of risky alcohol use [31]. In turn, health authorities' worry regarding this problem also extends to the community, as reflected by various online journals and newspapers [32-34]. Notwithstanding, from the DFSA's phenomenon perspective applied to review the Protocol, described results about alcohol consumption in Mexico and Nuevo León corroborate that psychoactive substances use, mainly dangerous alcohol use, influences community life. Consequently, these risky alcohol use patterns can also influence victimization by sexual violence, including rape. At this point, it is particularly interesting to pay attention to news from Nuevo León informing during the last years about increments by reports related to crimes of pornography of people deprived of will [35]. Likewise, the own study developed by the National Commission Against Addictions points out that the observed increment of risky alcohol use by women occurs concurrently with the increase of female suicidal behavior and early pregnancy [31].

Taking into account all the factors mentioned above, the review of the Protocol resulted in a proposal to the Gender and Justice Project for including a more in-depth view about the DFSA

phenomenon during the investigation of alleged rape cases. Below, the submitted proposal and its specific location within the draft document at the final of Section 8.4.10, contributed by the PhD candidate:

8. Guía de investigación ministerial

8.4. El plan de investigación

8.4.10. Circunstancias específicas que pudiesen presentarse en el marco de la investigación y requieren especial consideración

Por otra parte, entre los factores que pueden afectar a la capacidad de la víctima para otorgar un consentimiento válido, se deben tener en cuenta los efectos desinhibidores o incapacitantes generados por el consumo de sustancias psicoactivas, tales como fármacos o drogas de abuso legales y/o ilegales. Cuando una persona que se encuentra bajo los efectos de una sustancia química carece de la capacidad para otorgar un consentimiento válido, por lo que la cópula bajo estas circunstancias transgrede su libertad y constituye una forma de violencia sexual castigada penalmente. Es importante tener en cuenta que la incapacidad para consentir no se materializa tan solo cuando la víctima se encuentra inconsciente, sino que también tiene lugar ante estados de semi-incoscienza y de desinhibición derivados del consumo. El término utilizado para referirse a este tipo de agresiones sexuales es Ataques Sexuales Facilitados por Drogas. Así mismo, se diferencian tres tipos de ataques en función de la naturaleza del consumo practicado por la víctima:

a) Ataques pro-activos. Ocurren cuando el efecto incapacitante y/o desinhibidor experimentado por la víctima deriva del consumo involuntario de sustancias psicoactivas. Este consumo en contra de su voluntad puede deberse a una administración encubierta por parte de la persona agresora, o bien a una administración forzada.

b) Ataques oportunistas. En estos casos, el efecto incapacitante y/o desinhibidor experimentado por la víctima deriva del consumo voluntario de sustancias psicoactivas. La persona agresora se aprovecha del estado de vulnerabilidad manifestado directa o indirectamente por la víctima para llevar a cabo el ataque.

c) Ataques mixtos. Ocurren cuando el estado de incapacidad y/o desinhibición derivan tanto del consumo involuntario, como del consumo voluntario.

Un enfoque investigador completo, diferenciado e interseccional, debe tener en cuenta el importante papel que el consumo de drogas de abuso, especialmente el alcohol, juega en el

día a día de nuestra sociedad. La Encuesta Nacional de Consumo de Drogas, Alcohol y Tabaco (ENCODAT) muestra como la prevalencia del consumo de alcohol en México se está incrementando durante los últimos años. Es muy importante no estigmatizar a las víctimas, ni culpabilizarlas por el ataque sufrido como consecuencia del consumo realizado de forma voluntaria.

Así mismo, el Ministerio Público debe tener en cuenta, para la construcción de la teoría del caso, el tipo de consumo y los efectos farmacológicos característicos de las sustancias involucradas en este tipo de ataques. Para ello, debe contar con el apoyo del personal pericial de medicina forense, quien ha de analizar matrices biológicas recogidas de la víctima e interpretar oportunamente los resultados de los análisis toxicológicos practicados, teniendo en cuenta el tiempo transcurrido entre los supuestos hechos, la denuncia y el momento de recolección de la muestra.

2. A new prevention model to the DFSA phenomenon in Mexico.

Social intervention models focused on preventing a particular phenomenon must adjust to the subject matter's complexity as an essential step to optimize preventive efforts and reach the target population adequately. In this sense, the proposed model, built within this thesis's framework, focuses on a complex and intersectional topic, the DFSA phenomenon, which results from the crossing between two other severe social problems severely affecting adolescents and young people worldwide. On the one hand, the violence against women and, more concretely, the sexual violence, principally suffered by young women. On the other hand, the misuse of psychoactive substances. Especially drug use and abuse, including alcohol. As such, sexual violence against women and drug use intersect in the DFSA phenomenon [26], so it consists of an excellent example of the multifaceted and complex reality shaping violence. Therefore, the proposed model becomes a rendezvous point for facing and preventing these two social issues shaping the DFSA phenomenon. In this sense, ironically, this overall view is an innovative viewpoint to approach some problems that have been affecting humanity since ancient times. Interestingly, this innovative and simplified overview allows a more in-depth vision of the complexity and intersectionality of social issues affecting the youth community. These two problems relate to violence, the transmission of sexually transmitted diseases or unplanned pregnancy, among other difficulties, situations that seriously affect human rights, life projects, and the sexual and reproductive experience of many adolescents and young people. In addition to the conception of the DFSA as an intersectional phenomenon, another crucial element in this model is that, through a cooperation exercise performed by this thesis's author, it comes from

the youth community for facing problems affecting the own youth community. Against difficulties affecting adolescents and young people, the proposed model is based on the absolute certainty and trust in the youth community's potential for facing challenges, their dynamism for change, their resilience, and their capacity to overcome problems. In this way, the presented model fits the need for youth empowerment indicated by the 2030 Agenda [1] and the United Nations Youth Strategy [36]. This model aims to face the DFSA phenomenon and its intersectional components by increasing social awareness about its severity among youth community and promoting its prevention. The target population encompasses a wide age range, comprising adolescents and young people ranging between ten to twenty-nine years old. The model focuses on Mexico, with a specific design for its implementation in this country. Mexico, officially the United States of Mexico, is a federal republic comprising thirty-two states. By a practical approach adapted to the country's government structure, the model proposes to use several pre-existing institutional channels at the federal level as mechanisms driving actions for increasing awareness and prevention led by the youth community. This ubiquitous approach looks for an equal and nationwide opportunity generation by using existing resources networks throughout the country. Likewise, Mexico is a country with 126 million people [37], involving a variety of ethnic groups and different social realities. With this in mind, the proposed model tries to be faithful to the 2030 Agenda's banner, consisting of "leave no one behind" [1] during efforts for achieving sustainable development. In this sense, the model proposes specific intervention strategies for reaching as much as possible to adolescents and young people composing the target population by articulating well-targeted actions both in the educational and community contexts. On the other hand, within the proposed model, beyond the specific thematic lines focused on the DFSA phenomenon and its intersectional components, it is crucial to pay attention to the strong spirit for youthful dynamism and proactivity that characterizes and permeates the entire model. This is the thread guiding preventive solutions proposed in this model, the engine mobilizing the human potential for facing the DFSA phenomenon and related problems (see in Introduction: Fig 2). It aligns with the critical role given to young people through the 2030 Agenda [1] and, more specifically, by the United Nations Youth Strategy [36]. The model encourages the participation and empowerment of young women and men within their own localities and closer influence areas by promoting community-based interaction. Beyond fighting the DFSA as a specific phenomenon, this approach contributes to building a more responsible civil society, more solitary and committed to sustainable development. In this way, the proposed model also favors strengthening community cohesion and shaping adolescents and young people as future community leaders. This model acknowledges and

trusts the youth community's potential as strategic stakeholders with the innovative capacity to change and positively influence their surroundings.

i. Proposals from the new model.

From a practical viewpoint, to implement ubiquitous efforts targeted to preventing the DFSA phenomenon and related problems throughout the country, this model seizes two pre-existing initiatives of the Mexican federal government. On the one hand, the program "Groups of Adolescents Promoting Health" (GAPH) [38] coordinated by the National Center for Childhood and Adolescence Health. This institution is responsible for determining, spreading, and evaluating national politics, strategies, and procedures related to childhood and adolescence health care [39]. It is a work area of the Sub-Secretariat for Preventing and Promoting Health belonging to the Health Secretariat of the Mexican government. On the other hand, the program "Young people for changing, Community Brigades from North to South" (CBNS) [40], coordinated by the Mexican Youth Institute. This institution favors national politics focused on encouraging and promoting young people's development and provide them with necessary tools related to education, health, employment, and social participation [39]. The BCNS is framed within the program "Young People Building the Future" [41], under the Secretariat of Work and Social Security of the Mexican government. In this way, the GAPH and the BNCS programs allow dividing this model's target population into two age workgroups. The GAPH program focuses on the adolescent population aged ten to nineteen years old. In turn, the BCNS program focuses on young people aged from eighteen to twenty-nine. Likewise, within this model's framework, both initiatives focus on different work contexts or areas. The GAPH program involves actions targeted at the educational context, while the BCNS program focuses on the community context. On the other hand, besides these two federal programs, the model also proposes a third idea for providing the youth community with opportunities for facing the DFSA phenomenon and related problems in their surroundings. It focuses on interventions framed within the university context by using the network of student associations existing countrywide. Figure 21 shows the scope of the proposed model based on the range of ages and application contexts reached. Below, a brief explanation of how these three proposals work within this model.

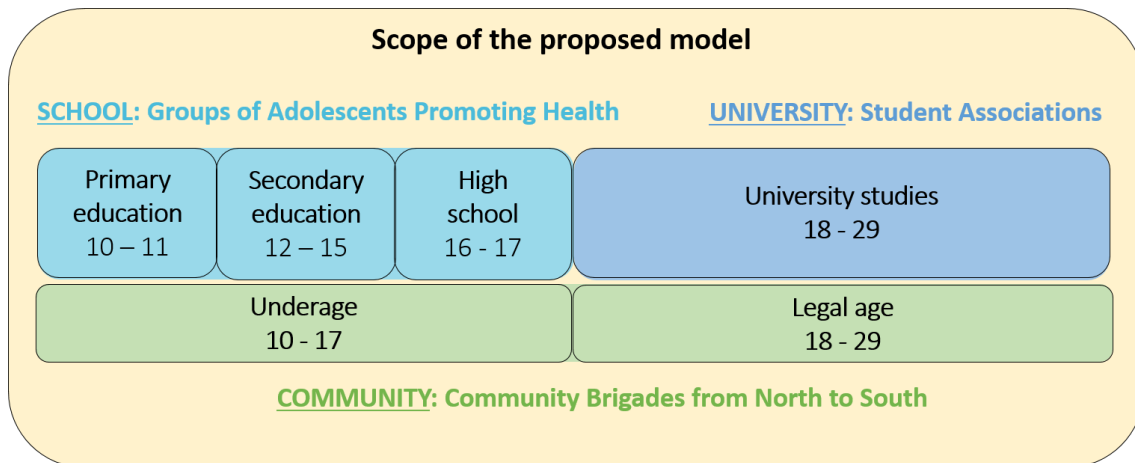


Figure 21. The ranges of ages and application contexts reached by the proposed model.

a) Groups of Adolescents Promoting Health (GAPH).

The GAPH program aims to encouraging adolescent participation in health care and building healthy lifestyles within the family, the school, and the community. For that purpose, work within GAPHs promotes the acquisition by teenagers of abilities and skills for reducing risk factors and encouraging protective factors [42]. Each GAPH consists of ten to twenty-five adolescents aged from ten to nineteen and one adult coordinator, who plans and moderates group activities and meetings. The latter is staff from the local Health Unit where the GAPH is embedded and can include social workers, psychologists, doctors, nurses, or health promoters [42]. The working dynamic consists of regular and direct interventions with the group members approaching topics related to morbidity and mortality problems affecting this age range. Group activities and meetings allow developing learning experiences targeted to generating and strengthen life skills and abilities [42]. Regarding the topics of interest for GAPHs, the program approaches six thematic areas. In this sense, most of these six areas fit the two problems intersecting within the DFSA phenomenon: sexual violence against women and psychoactive substance misuse. Concretely, themes involving unwanted pregnancy, drug use and addictions, violence among adolescents, and sexually transmitted diseases. As can be seen, the review of topics scheduled by the GAPH program shows the adjustment between the program’s interest lines and the social problems shaping DFSA as an intersectional phenomenon. In this sense, this model proposes complementing the GAPH program by incorporating a new thematic area approaching the DFSA phenomenon. This new thematic area would allow a view of the two dimensions intersecting in the DFSA phenomenon. Firstly, by focusing on each of them separately. Subsequently, by crossing them each other through a progressively more in-depth view until configuring the DFSA phenomenon. Sexual violence and drug use are two widespread problems affecting the lives of many adolescents. However, they are not isolated problems, but

they can find each other and configure intersectional nature experiences. A more complete and realistic overview adjusts better to the complexity characterizing the real-life. It prepares better adolescents for facing situations of real life. On the other hand, in addition to complement topics, this model proposes to project the activity developed by GAPHs outwards the Unit Health, to go beyond the limited number of people composing each group and try to reach more adolescents. In this sense, currently, GAPHs only targets adolescents composing groups in each local Health Unit, but not to their peers in the same area of influence who do not integrate a GAPH. However, groups can also work to impact the local Unit Health's influence area positively. The knowledge acquired by group members about the DFSA phenomenon and its intersectional components becomes an invaluable resource useful and shareable with other adolescents from the same community. People integrating GAPHs get vital empowerment by the rewarding experience shared within the groups. This experience strengthens their potential for sharing that useful knowledge through exercises of social service. In this way, the model opts for implementing the service-learning pedagogy [43] as an excellent tool for articulating this projection of the GAPHs labor. This is the same strategy described in Chapter 3, implemented in the University of Alcalá to successfully prevent the DFSA phenomenon among young university and high school students.

This service-learning methodology involves a simple two-step process. Firstly, a phase of learning about the intervention issue within the GAPHs coordinated by the adult responsible for the group. Secondly, the service phase, consisting of workshops or educational talks given by the previously empowered adolescents during the learning phase. At this point, within the proposed model, the GAPH program targets the educational context. As such, the model plans to develop this service phase in schools belonging to the Unit Health's influence area. Group members can provide their colleagues from local schools with useful knowledge about the DFSA phenomenon previously acquired within the GAPH. This second step, the service phase, involves designing and articulating the educational talk or workshop under the supervision of the group's coordinator. Likewise, the service phase also involves another essential element of the methodological strategy: the peer-to-peer communication technique [44]. This resource allows overcoming generational frontiers and contributes to assuring a more efficient transmission of educational messages. Therefore, this model seizes the GAPH program as a frame for building opportunities for public participation of adolescents targeted to preventing the DFSA phenomenon and related problems involving drug use and violence against women. Possible preventive interventions would reach all educational system levels, from primary education to high school, even first years of university studies. On the other hand, it is important to highlight

these proposals' relevance for the GAPH program. The new model's complementary view contributes to the program positively. In this sense, the GAPH program's monitoring guidelines include evaluating how adolescents exercise actions targeted to influence lifestyles in their surroundings [45]. The two-step process combining the service-learning pedagogy and the peer-to-peer communication technique would strengthen this aspect. Likewise, it would improve other GAPH program's indicators, such as recently acquired knowledge management. Moreover, it would encourage individual and social skills, like initiative, leadership, self-regulation, group work, and empathy. In addition, work in schools probably would encourage a call effect about the GAPH program within the community, attracting more interest and participation. Finally, it is crucial to highlight the wide distribution of the GAPH program throughout the Mexican geography as a key strategical aspect for ensuring the efficacy of preventive efforts against the DFSA phenomenon. This federal program consists of 2,213 groups countrywide, involving 26,246 adolescents [42]. Likewise, the GAPH program's scope depends on the affiliation to the social security system. In this sense, in 2015, associations were around 98 % of the adolescent population aged from ten to nineteen years old [46].

b) Community Brigades from North to South (BCNS).

The BCNS program aims to encourage public participation and empowerment of young people in their own localities by implementing interactive process within the community [40]. Brigades' mission is to contribute to building responsible citizenship, improving their environment, and strengthening their links with the state [40]. For that purpose, the program mobilizes young people as strategic stakeholders with innovative capacity, an essential step for changing their environment and achieve sustainable development. In this way, the BCNS program adjusts to the two 2030 Agenda's critical areas focused on *People* and *Global Partnerships*. For developing this labor, brigades are distributed throughout the country and act in zones classified as "priority attention regions", established based on analyzing risk factors for young people [40]. Each brigade consists of twenty-five young people aged from eighteen to twenty-nine and another person brigade responsible, who coordinates the group's actions and interventions in the community. Brigades work in the residential zone of members composing the group, performing endogenous community services, so brigades' members work as awareness-raising agents within their own community environment. These services include educational interventions targeted to provide useful information about health topics and raise awareness on social problems [40]. As with the GAPH program, brigades' social interventions concentrate on different thematic lines. This model proposal fits two of the six central themes. In this sense, the BCNS schedule focuses on topics about sexual and reproductive health, aligned with the

DFSA phenomenon. Moreover, crime prevention is another BCNS program's central theme [40]. For that reason, this model proposes to complement the brigades' intervention themes on public health, including the approach to the DFSA phenomenon as an intersectional form of sexual violence. Because of its intersectional nature, this phenomenon is an excellent frame for approaching other relevant topics seriously affecting youth, concretely, sexual violence against women and drug use. As such, educational talks and workshops performed by the brigades' members about the DFSA phenomenon would be proper preventive activities. As with this model's proposal for GAPH program, these educational actions would use the peer-to-peer communication technique as methodological strategy in an attempt for overcoming generational barriers and achieve a better transmission of preventive messages. However, while the proposal made for the GAPH program targeted the educational context, this model's recommendation for the BCNS program primarily focus on the community context, which is the brigades' original work field. Brigades' educational interventions about the DFSA phenomenon in the community must reach the largest possible number of young people within the brigade's influence area, raise awareness about the severity of this form of sexual violence, and provide useful information on how to prevent, report, and seek help. At this point, the proposed model includes preventive efforts alternative to talks and workshops. Such modalities are more feasible for interventions performed in schools, where the audience remains captive. However, this type of intervention with young people in the community context can receive an unfavorable answer if sufficient public interest is not generated. For that reason, the model also suggests leisure activities as alternatives to talks and workshops. These other possibilities involve sportive and cultural proposals, probably more attractive and interesting for young people. On the other hand, this model's complementary view contributes to the BCNS program positively. This topic's inclusion would significantly improve brigades' educational labor about sexual health and drug use in their influence area. It favors a more in-depth view of two of the BCNS program's central themes, focused on sexual and reproductive health and crime prevention. Likewise, it allows strengthening community cohesion and rebuilding the social fabric, another central theme of the BCNS program. Finally, regarding the scope of preventive actions against the DFSA phenomenon, it is crucial to highlight the countrywide distribution planned for the BCNS program. The original plan expects to generate 130 brigades, representing 3,250 young women and men [40].

c) University students associations.

Studies about the DFSA phenomenon worldwide usually associate this form of sexual violence with the leisure nightlife contexts typical from university campuses [26]. For that reason,

efficient preventive actions are also necessary at this level. Even more, taking into account that the university is an excellent source of the thread inspiring and guiding this model: the youth community's potential to influence society positively. In this regard, periodically, the university brings together many young people during a vital stage while experiencing an in-depth learning and personal maturing process. This stage encourages dynamism, innovative capacity, and creativity in young people, which involves a great potential for action and social intervention. Indeed, aware of the increased capacity resulting from the collective work, many students take part in university students associations. Although these groups encompass very different purposes, they share as a common thread the youth's potential for action. Likewise, university degrees usually have official student associations, focusing on topics related to their specific study plans. To prevent the DFSA phenomenon within the university context, this model proposes to optimize the potential for positive social influence from students' associations related to degrees in health, education and justice. Depending on the degree, some focus on health care and promoting healthy lifestyles, educating people, or fighting against inequalities and injustices, for example. Many university degrees approach topics directly or indirectly related to sexual violence against women and drug use, the two dimensions intersecting within the DFSA phenomenon. For this reason, students from these degrees, if coordinated and associated adequately, have the potential of facing these problems by contributing to the efficient transmission of educational and preventive messages. Official student associations related to health, education, and justice are excellent resources for facing social problems through educational efforts in the community. Better coordination of these organizations can achieve the effective mobilization of young people within the university context and seize their potential to face social problems, especially those mainly affecting the youth community. Even more when these official associations configure students' networks between universities at the national and international level. In this line, this model proposes to take advantage of this dynamic and youthful social fabric to encourage its capacity to act for the benefit of society. The proposed idea consists of generating a new federal system for providing official university student associations with institutional support. This proposal focuses on strengthening the associations' capacity for designing and articulating actions influencing the community positively. The model points to the Mexican Youth Institute as a suitable institution for articulating this system at the federal level in collaboration with the Higher Education Public Institutions. This new system would change the traditional orientation of the university students' associations, providing them with a more solidary and constructive view within their own communities. Moreover, it would provide university students with the material resources necessary for developing well-targeted actions. It is crucial to highlight the potential positive

contribution of this proposal to the university educational process. From an early stage, the proposed idea favors university students to be aware of their learning process's social relevance and the usefulness and the beneficial impact of the acquired knowledge. This notion would revitalize the educational process, attracting attention towards more solidary and lesser competitive learning. Likewise, it encourages an educational process more committed to sustainable development. Moreover, it contributes to recovering the sense of higher education at society's service, as demanded by the World Declaration on Higher Education for the XXI Century [47].

Finally, Figure 22 helps to visualize the educational and awareness potential of the new proposed model facing the DFSA phenomenon, encompassing the three described youth action lines revolving around GAPHS, BCNS, and university student associations.

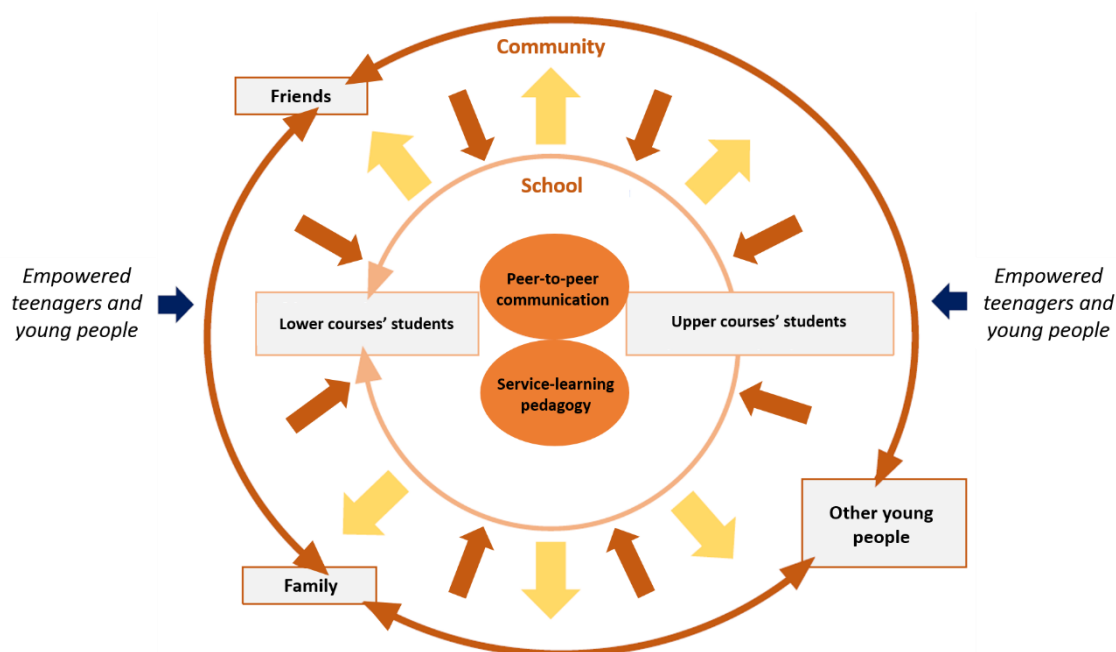


Figure 22. New model potential for spreading preventive and awareness messages facing the DFSA phenomenon within the community and the school environments.

In the light of the proposed model, the two concentric rings in Figure 22 illustrate as preventive efforts start from both the community setting and the school environment. In this sense, the community is mainly the work field of the BCNS, while GAPHS focus primarily on targeting educational efforts towards the school setting. In turn, university student associations approach both environments. As noted at the figure's central point, the peer-to-peer communication technique and the service-learning pedagogy become two crucial strategical resources for properly disseminating educational messages within society. Empowered teenagers and young

people participate as active agents for positive change within the society, working on prevention and raising awareness within the family setting, their groups of friends, and other youth groups.

INTERNATIONAL STAY IN THE CENTER OF EXCELLENCE FOR STATISTICAL INFORMATION ON GOVERNMENT, CRIME, VICTIMIZATION AND JUSTICE

Development cooperation works performed during the international volunteering stay in the Liaison and Partnership Office of UNODC for Latin America and the Caribbean went further beyond the Mexican's national sphere. Actions for encouraging institutional support against the DFSA phenomenon encompassed even further efforts, aiming for bigger positive influence in the international sphere. For that purpose, the Center of Excellence for Statistical Information on Government, Crime, Victimization and Justice (CoE) served as a key strategic position for conducting wider development cooperation efforts from inside the United Nations system. In this sense, this UNODC's Center of Excellence includes a Victimization Laboratory that serves as Technical Secretariat for the Latin America and the Caribbean Crime Victimization Survey Initiative (LACSI) [5]. Concretely, the CoE's Victimization Laboratory works towards developing a common and robust methodology for conducting victimization surveys in the region [5]. The information generated by crime victimization surveys contributes to monitoring the progress of the 2030 Agenda, which allows carrying out a more exhaustive analysis of the criminal phenomena [5]. In this way, the work from this strategic location at the CoE's Victimization Laboratory allowed articulating an innovation proposal to the Working Group of the LACSI Initiative to include a question about the victim's state of vulnerability when suffering from sexual violence. Down below, we introduce the LACSI Initiative and then explain the innovation proposal process.

1. The LACSI Initiative.

The LACSI Initiative emerged from the Regional Meeting on Crime Victimization Surveys gathered in Mexico City in October 2013 [48]. In this meeting, representatives from twenty countries discussed about the situation of victimization surveys developed until then in seventeen countries of Latin America and the Caribbean. In this sense, based on a joint analysis carried out by the CoE and the System of Standardized Indicators in Peaceful Coexistence and Citizen Security project, they became aware of the need for having a common questionnaire able to provide comparable regional data on experiences of victimization, perceived security and people appreciation of the criminal justice system. In this way, the meeting approved creating a new Working Group to develop a questionnaire and a common methodology for victimization surveys in Latin America and the Caribbean [49]. The resulting Working Group

operates the LACSI Initiative, led by UNODC through the CoE in Mexico City. Other authorities supporting the Initiative include the Inter-American Development Bank, the Organization of American States, and the United Nations Development Program. Until 2019, the Working Group comprised thirteen active member countries in Latin America and the Caribbean, namely, Argentina, Belize, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Panama, Peru, the Dominican Republic, and Haiti [49]. In this regard, under the LACSI Initiative, a regional questionnaire was available to these countries in English, Spanish, Portuguese, and French as an instrument collecting information about the crime prevalence and incidence, dark figure, and security perception [49]. The common methodology and questionnaire allow standardizing the measurement of victimization in the region and generating comparable data among countries. This valuable information contributes to monitoring the progress of the 2030 Agenda for Sustainable Development [5].

2. A proposal to consider sexual violence and the victim's state of vulnerability.

During the international volunteering stay in the Liaison and Partnership Office of UNODC for Latin America and the Caribbean, this thesis's work contributed to developing the standard questionnaire for conducting victimization surveys in the region. In this sense, despite the significant steps achieved since 2013, the Working Group acknowledges that much work remains to be done. Concretely, between the following steps, in 2018, the Working Group highlighted the need for integrating measurement of sexual crimes [50]. At the time of the stay development, the questionnaire included nineteen crimes, encompassing twelve core and seven optional crimes. However, despite their variability, sexual offenses were not on the list. Since its creation in 2013, the Working Group gathered in on five occasions between 2014 and 2017. The second Technical Meeting discussed the possibility of including sexual offenses, but finally, the participants agreed measuring only physical aggression for the moment. Consequently, considering the topic approached in this thesis, the lack of measurement of sexual violence by the LACSI Initiative motivated a proposal focused on including this type of offense, particularly considering the victim's state of vulnerability at the moment of suffering the assault. The need for considering such a proposal was sustained considering the International Classification of Crimes for Statistical Purposes (ICCS), adopted by the United Nations Statistical and by the Commission on Crime Prevention and Criminal Justice Commission in 2015 [51]. In this sense, the ICCS refers to the victimization by DFSA in section three about "Injurious acts of a sexual nature". Concretely, when defining sexual violence, the Classification considers the effects of psychoactive substances. It claims, "Unwanted sexual act, attempt to obtain a sexual act, or contact or communication with unwanted sexual attention without valid consent or with

consent as a result of intimidation, force, fraud, coercion, threat, deception, use of drugs or alcohol, or abuse of power or a position of vulnerability". Even more, the element 030112 from the ICCS, consisting of "Rape without force", includes "drug-facilitated rape" [51]. The proposal developed in this Thesis framework involved a two-phase process.

Firstly, the CoE's Victimization Laboratory staff was informed about the need for including new items focused on drug-facilitated crimes in the LACSI Initiative's questionnaire. In this sense, the emphasis was on introducing questions about the DFSA phenomenon. Arguments used for justifying this need included the epidemiological information previously discussed in this chapter, combining an increase of both female alcohol use and violence against women in the Mexican national context.

Secondly, the CoE's Victimization Laboratory staff included the topic in the agenda of the 7th Technical Meeting of the Working Group on the LACSI Initiative, gathered in Mexico City in October 2019 [52], only three months after the stay. The discussion about the topic was included within the first item on the agenda programmed for Wednesday, 23 October 2019, namely "*LACSI Initiative innovation proposals to the Working Group*". Concretely, the topic was, "*Condition of the victim of being under the influence of alcohol or drugs (higher vulnerability) in violent crimes (assault/injury and sexual violence)*" [52]. The proposal focused on three types of crimes, namely, "theft or robbery, assault, and sexual violence" [52]. In this line, the presentation of the topic by the CoE's staff included a specific question about the victim's state of vulnerability when the crime occurred [53]. Figure 23 shows two slides used by the CoE's staff during the presentation of this proposal to the 7th Technical Meeting of the Working Group on the LACSI Initiative. The whole presentation [53] and the meeting agenda [52] are online available on the CoE's Victimization Laboratory's web [4].

Propuesta | Proposal


<p style="color: #c00000;">Inclusión de una pregunta sobre el estado de vulnerabilidad de la víctima al momento del delito para:</p> <ul style="list-style-type: none"> • Hurto o robo • Agresiones y lesiones • Violencia sexual 	<p style="color: #0070c0;">Inclusion of a question about the state of vulnerability of the victim at the moment of occurrence of the crime for:</p> <ul style="list-style-type: none"> • Theft or robbery • Assault • Sexual violence
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Iniciativa para la Encuesta de Victimización Delictiva en América Latina y el Caribe (VICLAC) | 7ª Reunión Técnica del Grupo de Trabajo

Propuesta y discusión | Proposal and discussion

<p style="color: #c00000;">Propuesta de pregunta:</p> <p style="color: #000080;"><i>Entendemos que hay ocasiones en que la víctima pudiera estar en un estado de mayor vulnerabilidad al momento del delito por estar bajo el influjo del alcohol u otra droga. ¿Usted se encontraba en este estado de vulnerabilidad al momento del hecho?</i></p>	<p style="color: #000080;">Question proposal:</p> <p style="color: #000080;"><i>Sometimes, victims could be in a more vulnerable situation while being under the influence of alcohol or other substances. Were you in this vulnerable situation while experiencing this last incident?</i></p>
<p>1. Si</p> <p>2. No</p> <p>3. Se rehúsa a contestar</p>	<p>1. Yes</p> <p>2. No</p> <p>3. Refuses to answer</p>



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Figure 23. The proposal to the 7th Technical Meeting of the Working Group on the LACSI Initiative focusing on the inclusion of a new question about the victim’s vulnerability state into the Victimization Survey for Latin America and the Caribbean.

As a result of the proposal to the LACSI Initiative’s Working Group, the question about the victim’s state of vulnerability because of the psychoactive effects of alcohol or other drugs at the moment of the victimization experience was included in the more recent version of the VICLAC questionnaire, published in January 2021 [54]. Moreover, as a first approximation, the proposed question was included in the Saint Lucia National Crime Victimization Survey (SLNCVS) 2020, carried out between September and December 2019. The SLNCVS’s Section D about sexual harassment explored the most recent experiences during the previous 12 months (September

2018 – August 2019), including the question following question about the victim's vulnerability state because of drugs:

"Sometimes, victims could be in a more vulnerable situation while being under the influence of alcohol or other substances. Were you in this vulnerable situation while experiencing this last incident?" [55]

No specific data from the SLNCVS has been published to date about the victim's vulnerability during sexual victimization.

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4.3. Multi-Target Methodology for the Screening of Blood Specimens in DFSA Cases.

Main source:

P. **Prego-Meleiro**, O. Quintela-Jorge, G. Montalvo, C. García-Ruiz, Multi-target methodology for the screening of blood specimens in drug- facilitated sexual assault cases., *Microchem J.* 150 (2019) 104204. Online available at: <https://doi.org/10.1016/j.microc.2019.104204>

ABSTRACT

The forensic investigation of DFSA requires the toxicological examination of biological matrices to detect possible substances in victims. Whole blood is an important sample since it is the only one available for analysis in a considerable percentage of cases. A new screening methodology was developed for the detection of 96 compounds related to DFSA in blood. Sample treatment was based on a procedure combining protein precipitation and phospholipid removal before high-performance liquid chromatography coupled to tandem mass spectrometry (HPLC-MS/MS) analysis. The new method operates in scheduled multiple reaction monitoring (sMRM) mode and uses the hybrid operating of the third quadrupole as an ion trap. The blood samples preparation was studied comparing four different protein precipitation treatments and two widely used extraction techniques as solid phase extraction and liquid-liquid extraction. The analytical performance of the screening method was evaluated in terms of selectivity and limits of detection. Finally, successful results were obtained applying the new method to the analysis of fifteen samples from real cases of the INTCF.

INTRODUCTION

Over the last decades, several publications about drug-facilitated crimes have highlighted the seriousness of this criminal *modus operandi* in Western societies [1]. In Spain, this phenomenon is frequently referred to as "*sumisión química*", deriving from the older French term "*soumission chimique*" [2,3]. This involves the cover administration of psychoactive substances to other persons to override their will and subject them to different criminal purposes [4]. However, drug facilitated sexual assaults (DFSAs) have received special attention within drug-facilitated crimes. In this way, a classification of DFSA offenses based on the type of drugs use distinguishes between proactive and opportunistic assaults. Proactivity relates to the popular expression "drink spiking" and involves the covert or forced administration of incapacitating substances to victims. On the other hand, opportunism concerns intoxications because of the voluntary use of psychoactive substances by the victim [5].

Numerous substances are related to DFSA with a very variable typology differing between countries. International listings enumerate compounds most frequently associated with this type of sexual assault, including illicit, prescription and over-the-counter drugs. The Society of Forensic Toxicologists (SOFT) published a list including 50 drugs [6,7]. In the same way, the United Nation Office on Drugs and Crime (UNODC) made public a guide for the forensic analysis of DFSA with a list consisting of 90 compounds frequently related to this offense [8]. Despite of any psychoactive substance can be involved, popular denominations as "knock out drugs" and

"date-rape drugs" are used to refer some substances typically associated with DFSA in mass media [9], such as *burundanga* (scopolamine), ketamine, flunitrazepam (Rohypnol®) and GHB. Specifically, this last compound has received significant attention because of its frequent implication in DFSA cases [10]. GHB is a precursor of the inhibitory neurotransmitter gamma-aminobutyric acid (GABA), causing both euphoric and sedation effects [10] and being used as recreational drug of abuse and to enhance sexuality [11].

The early collection of biological samples is a key factor to carry out suitable analytical procedures [12]. Studies agree the potentially underestimated implication of fast-metabolising substances in DFSA casuistry. Because of high elimination rates of some compounds from the body of victims, samples collected > 12 h after alleged assaults may lead to negative analytical results, underrating prevalence about implication of certain compounds [13-15]. On the other hand, moreover a proper collection time, types of biological samples collected are another significant feature to carry out toxicological tests. Urine and blood are preferred options [16]. Urine has a detection window up to 7 days, while detection probability in blood samples significantly decrease after 48 h [8]. In this way, the interest of analysing blood samples decreases when collection delay overcomes 24h from the alleged assault [17]. However, according to the largest case study conducted in Spain, blood was the only available biological sample in 28.9 % of alleged DFSA cases, urine was available in 15.8 %, and both blood and urine samples were forward to forensic laboratories in 53.9 % [18]. Therefore, availability of blood samples is significant in a sizeable percentage of cases, and thus require a specific analytical approach. Regarding blood, proteins and phospholipids are important analytical interferences. The later come mainly from erythrocyte walls and cause an important matrix effect.

Concerning to the analytical technique, nowadays immunoassays remain as a frequently used tool for the toxicological screening of drugs in biological matrices. However, immunochemical methods are not a good option for the screening in alleged DFSA cases. These tests do not cover all drug classes and comprise only a small number of the psychoactive substances frequently related to DFSA, so cannot detect all compounds potentially present in a sample. Moreover, these techniques have too high detection limits of and they are little selective. Furthermore, false positives occur more easily using immunochemical methods, due to cross-reactivity with compounds presenting similar structures to those included in the immunoassay. In addition, most kits are for urine analyses, not for blood. Therefore, confirmatory analyses must be realized after a positive result, using more specific and selective techniques, such as gas or liquid chromatography coupled to tandem mass spectrometry (LC-MS/MS).

During the last years, several publications focused the search of effective analytical alternatives based in LC-MS/MS for the general screening of toxicants in biological samples. Recently, a new LC-MS/MS screening method was developed and validated for the simultaneous analysis of 100 analytes related to DFSA in urine samples [19]. Another methodology used a multi-target screening for the detection and identification of 700 drugs and metabolites in biological fluids, employing a hybrid triple-quadrupole linear ion trap mass spectrometer in a single analytical run [20]. Similarly, a screening LC-MS/MS methodology for the analysis of ante- and post- mortem urine and whole blood samples was lately published [21]. In the same way, other studies using ultra high performance liquid chromatography coupled with tandem mass spectrometry (UHPLC-MS/MS) addressed the analytical research of specific compounds frequently related DFSA, such as GHB [22,23]. These analytical strategies, based on multi-target screening, needs mass-spectral libraries for the identification of analytes in biological samples, being detectable only a selected group of compounds.

Furthermore, a general unknown screening is possible by analytical strategies using high-resolution mass spectrometers, like time-of-flight (TOF) instruments. Recently, an analytical method employing ultra-performance liquid chromatography time-of-flight mass spectrometry (UPLC-TOF-MS) was developed for the screening of > 150 drugs and metabolites, including pharmaceuticals and different drugs of abuse. This method was successfully tested on real samples [24]. Similarly, another study developed a UPLC-TOF-MS method for the screening of 46 analytes in whole blood from cases of alleged sexual assault [25]. Whereas the use of high-resolution mass systems is not extended, LC-MS/MS remains one of the most specific and selective widely used analytical techniques in toxicology laboratories. The proposed methodology in this work employs the LC-MS/MS technique making use of the ion trap quadrupole (Q-Trap) potential of the analytical equipment. This particularity enables the hybrid functioning of the third quadrupole as an ion trap, allowing obtaining much more sensitive analytical results. Despite the fact that Q-Trap is a useful tool, actually its availability is not very extended in LC-MS/MS equipment, probably because of the increased cost. On the other hand, the pre-treatment of complex matrices such as blood needs selective sample preparation procedures. In this sense, solid phase extraction and liquid-liquid extraction are among the processes generally used. However, other less selective procedures such as protein precipitation may also be of interest when preparing complex samples, especially when screening analysis run at low concentrations. In these cases, less selective procedures allow a best passage of both polar and nonpolar compounds in approximately equivalent proportions. Taking this idea in mind and the potential of LC-MS/MS systems in forensic laboratories, this work focused the

development of a sensitive and selective analytical LC-MS/MS methodology for the multi-target screening of 96 compounds related to DFSA in whole blood samples, in order to achieve a useful approach for the forensic investigation of alleged DFSA cases.

EXPERIMENTAL

Chemicals.

All drug standards and deuterated analogues (used as internal standards (ISs)) were from Cerilliant® (Round Rock, USA). All solvents were of high-performance liquid chromatography (HPLC) grade. Methanol for LC-MS, water for gradient elution (HPLC), ammonium hydroxide solution ca. 25 % (v/v) NH₃ and di-chloromethane for HPLC, were from Sigma-Aldrich (St. Louis, USA). Acetonitrile (LC-MS grade), 2-propanol for LC-MS and solutions of formic acid 0.1% (v/v) in water and 0.1% (v/v) in acetonitrile were purchased from Thermofisher (Waltham, USA). Panreac Quimica S.A. (Barcelona, Spain) provided 1-chlorobutane and n-hexane 95 % (v/v) for analysis. Orto-phosphoric acid 85 % (v/v) pure was from Lab-Scan analytical science (Sowinskiego, Poland). Formic acid and ammonium acetate, eluent additives for LC-MS, were obtained from Scharlau (Barcelona, Spain). Deionized water was prepared using a Millipore system (Q-POD®) with a 0.22 µm deionizer cartridge from Millipak® (Darmstadt, Deutschland). Sorensen buffer (0.133 M Na₂HPO₄ and 0.133 M KH₂PO₄) was prepared by technical staff of the INTCF. TRIS buffer was prepared with tris(hydroxymethyl)aminomethane at 0.61 % (m/v) in water. A solution of 5 % (m/v) ZnSO₄ was also prepared.

Biological material.

The Department of Chemistry of the INTCF-Madrid provided whole blood for the development of the new analytical methodology. Blood samples were from healthy voluntary donors with no history of drugs consumption. Moreover, fifteen blood samples from real DFSA cases provided by the same institution were analyzed in order to test the applicability of the developed methodology.

Preparation of stock and work solutions.

Stock solutions of the analytes included in the new methodology were prepared by dilution in acetonitrile of the commercial solutions, reaching the concentration level at 1 µg/mL. In order to facilitate the experimental work, five stock solutions were prepared to divide all the compounds by groups. From each of these stock solutions, other three work solutions were obtained at 1, 10 and 100 ng/mL. By other hand, another solution of ISs in acetonitrile was prepared at 500 ng/mL.

Blood sample preparation.

Three different procedures for the sample preparation were tested, based in solid phase extraction, liquid-liquid extraction and protein precipitation. The blood volume used was 200 μ L for the three tested procedures. Following are the characteristics of each procedure:

Solid phase extraction.

The blood sample was preprocessed before the extraction, by cell lysis and protein precipitation. For that, 3 mL of Sorensen buffer were added to 200 μ L of blood sample and vortexing for 5 s. Then, 200 μ L of acetonitrile 0.1 % (v/v) acidified with formic acid was added and vortexing for 15 s for protein precipitation. After this preprocessing, the extraction was performed using Oasis[®] mixed-mode cation exchange (MCX) plates of 60 mg, from Waters[®] (Milford, USA). For a good conditioning and equilibrating, 1.7 mL of MeOH and 1.7 mL of water were passed through the plates, respectively. Sample loading needed two consecutive steps adding 1.5 mL in each one of them. For the first wash, 1.7 mL of methanol in water at 5 % (v/v) with 2 % (v/v) of formic acid was used. Second wash was with 1.7 mL of hexane. After washing, for the drying a nitrogen at 3-6 psi for 5 min was passed. The elution step used a solution of acetonitrile and isopropanol (60:40) with 5 % (m/v) of ammonium hydroxide. For that purpose, 800 μ L of this solution was passed twice, consecutively. For drying extracts, a stream of nitrogen (lower than 5 psi) was applied to avoid the evaporation of the more volatile compounds, as amphetamines. To reconstitute the extracts, 200 μ L of the mobile phase were added to them and solution was vortex for 5 s. The final extract solutions showed a clean appearance.

Liquid-liquid extraction.

In 10 mL pirex glass tubes, 200 μ L of blood and 400 μ L of TRIS buffer were introduced. After a brief vortexing, 3.2 mL of 1-chlor-obutane were introduced and the tubes were vortexed again for 5 s. The tubes were rotated for 30 min and then centrifuged for 5 min at 4000 rpm. For the evaporation of the recovered supernatants to dryness, a stream of nitrogen (lower than 5 psi) was used until total evaporation. The extracts were reconstituted with 200 μ L of the mobile phase and vortexing for 5 s [26].

Protein precipitation with and without phospholipid removal.

Four extraction procedures based in protein precipitation were compared. Three combined both protein precipitation and phospholipid removal stages using Phree[®] or Ostro Plates[®], meanwhile one used only protein precipitation. Referred procedures are described following:

i. Protein precipitation and phospholipid removal using Phree[®]. Phospholipid Removal Plates, from Phenomenex[®] (Torrance, USA). First, cell lysis of 200 μL blood in an Eppendorf tube by vortexing for 5 s with 50 μL of 5 % (m/v) ZnSO_4 was made. Then, protein precipitation by vortexing for 5 s (14,000 rpm; 10 min) with a $-20\text{ }^\circ\text{C}$ chilled mixture of acetonitrile and methanol (95:5) was prepared. Following, the addition of the recovered supernatant to the well containing 25 μL of 1.0 % (v/v) formic acid in acetonitrile, and application of positive pressure for 5 min at 60 psi was carried out. Evaporation to dryness of the recovered volume using a stream of nitrogen (lower than 5 psi) was made previously the reconstitution of the extract by adding 200 μL of the mobile phase and vortexing for 5 s [27].

ii. Sonication cell lysis and phospholipid removal using Phree[®]. Phospholipid Removal Plates, from Phenomenex[®] (Torrance, USA). First, cell lysis of 100 μL blood in Eppendorf tube by sonication for 10 min and water addition (100 μL) and vortexing for 5 s was made. Then, protein precipitation into the well through pipette mixing by aspiration/dispensing with 1.0 % (v/v) formic acid in acetonitrile (200 μL and 5 repetitions) was performed. Following, the application of positive pressure for 5 min at 60 psi was made. Evaporation to dryness of the recovered volume using a stream of nitrogen (lower than 5 psi) was made prior reconstitution of the extract by adding 200 μL of the mobile phase and vortexing for 5 s.

iii. Protein precipitation and phospholipid removal using Ostro[®] Sample Preparation Plates, from Waters[®] (Milford, USA). First, cell lysis into the well, using 150 μL of 0.1M aqueous ammonium acetate was made. Then, protein precipitation into the well through pipette mixing by aspiration/dispensing with acetonitrile (200 μL and 5 repetitions), and vortexing for 3 min was performed. Following, the application of positive pressure for 5 min at 60 psi was carried out. Evaporation to dryness of the recovered volume using a stream of nitrogen (lower than 5 psi) was made prior the reconstitution of the extract by adding 200 μL of the mobile phase and vortexing for 5 s.

iv. Simple protein precipitation. First, vortexing 50 μL blood for 5 s with 40 mM ZnSO_4 in 66 % (v/v) aqueous methanol was performed. Following refrigeration for 20 min at $-18\text{ }^\circ\text{C}$ and centrifugation (14,000 rpm, 10 min). Then, evaporation to dryness of the recovered volume

using a stream of nitrogen (lower than 5 psi) was made prior the reconstitution of the extract by adding 200 μ L of the mobile phase and vortexing for 5 s.

Instrumentation and analytical method.

High performance liquid chromatography method.

The samples were analyzed using a LC-MS/MS system consisted of a AB Sciex 4000 Q TRAP[®] triple-quadrupole ion trap mass spectrometer coupled to a Turbo spray interface used as ion source. This was fitted with an Ekspert UltraLC 110-XL instrument. The liquid chromatography system includes a degasser, autosampler, a column oven and two binary pumps. The Software Analyst 1.6.2. was used for the control of the system and data processing. Ionization was performed using an ion source Turbo spray and an Integrated Valco Valve Method. Nitrogen was used as collision gas, and dried and cleaned air was used as curtain gas. The MS conditions were as follows: curtain gas, 25.0 psi; collision gas, high; ion spray voltage, 5500.0 V; source temperature, 600 °C; ion source gas 50 psi; ion source gas 2.6 psi and interface heater, on. The method works for the detection of all the analytes by a positive ionization mode.

Separation was performed with a Kinetex[®] 2.6 μ m Biphenyl 100 Å (100 x 2.1 mm) column, provided by Phenomenex (Torrance, USA). The mobile phase was a mixture of 2 mM ammonium formate in water with 0.2 % (v/v) formic acid (eluent A) and 2 mM ammonium formate in acetonitrile with 0.2 % (v/v) formic acid (eluent B). Gradient conditions started with 10 % (v/v) of eluent B during the first 0.5 min at a flow rate of 0.3 mL/min. The level of eluent B increased linearly for 13.5 min to 90 % (v/v) and was kept at this concentration for 2 min. Initial conditions were restored at 16.5 min. The injection volume was 5 μ L. The column oven was set to 30 °C and the autosampler temperature was 12 °C. Column equilibration was performed with starting conditions for 1 min. The flow rate keep constant at 0.3 mL/min throughout the run. For column washing, a mixture of methanol, acetonitrile and water (40:40:20) was used.

Mass spectrometry method.

The mass spectrometry (MS) method conducted a survey scan to monitor the ionic fragmentation reactions of the 96 targeted basic compounds, working in positive ionization mode. The QTRAP 4000 Mass Spectrometry System (AB Sciex, Toronto, Canada) operated in sMRM mode, with a detection window of ± 60 s for the analysis of each MRM transition. The sMRM mode enabled the inclusion of a high number of target analytes in the screening method. This type of approach increases the selectivity of the MRM due to a greater dwell time is available for each transition, as already noted Ferreiros et al. [20]. Dwell time is the time the

MRM transitions are monitored in one cycle. In addition, the sMRM mode minimizes the signals originating from matrix components, capable of inhibiting the acquisition of enhanced product ion (EPI) spectra of coeluted analytes. In this sense, interference will not occur if the matrix component elutes out of the retention time window of the analyte [25].

A second scan started when the intensity of the spectral signal reached in the third quadrupole (Q3) exceeded a threshold pre-set at 2000 counts per second (cps). At that moment, the third quadrupole started working as an ion trap. This triggered an information dependent acquisition (IDA) scan.

The target scan time was 1.29 s, which supposes 402 cycles per run. The compounds included in the MS method comprised several groups of substances. All MRM transitions, analyte-specific settings and retention times for the 96 analytes included in the new methodology are summarized in the Table 7. The MRM mode includes a pause time between the MRM transitions of 2 ms. Q1 and Q3 were used at unit resolution. The monitored transitions and their particular settings, declustering potential, entrance potential, collision energy, and collision exit potential were established for each analyte from pre-existing methodologies in the INTCF laboratory.

The two most intense MRM transitions per cycle exceeding the threshold of 2000 cps, were considered for the generation of the dependent EPI scan. For further improvement of the identification of co-eluted compounds, the MRM transitions triggering the dependent scan were excluded for EPI scans for 20 s after two consecutive occurrences. The EPI scans were performed at a scan range of 50 to 700 amu after a dynamic fill time with a scan rate of 30 amu/s applying a declustering potential (DP) of 60 eV, a collision energy (CE) of 35 eV and a collision energy spread (CES) of 15 eV.

Data processing was necessary for the comparison of the acquired EPI spectra from the sample with those present in the library of the analysis software. Authors built their own library for the 96 compounds. The Analyst® Software 1.6.2. (AB Sciex, Toronto, Canada) was used for data analysis. This comparison provided reports indicating the possible identified compounds, as well as their respective inter-spectral coincidence values, known as purity and expressed as a percentage to characterize the spectral similarity. The purity is a combination of fit and reverse fit values. The first indicates the similarity between the library spectrum and the unknown spectrum, meanwhile the second provides information about the coincidence of an unknown spectrum with a library spectrum.

Criteria for positive identification.

To establish a positive identification of the analytes, different analytical requirements based on the positive identification criteria were selected [28]. Specifically, the monitored transition was required to be present with a signal-to-noise ratio (S/N) ≥ 3 . The acquired spectra matched with the library spectra with a purity $> 70\%$. The peak height ≥ 2000 cps was required, and no compound had to be present in the blank on the same run. At the same time, the internal standard had to be present.

Table 7. Analytes of the new method, drug class, multi reaction monitoring (MRM) transitions with declustering potential (DP), collision energy (CE), collision cell exit potential (CXP), retention time (tR), and numbering assigned in chromatograms.

Drug class	Analyte (number)	tR (min)	Q1 Mass (Da)	Q3 Mass (Da)	DP (V)	CE (V)	CXP (V)
BZDs	7-aminoclonazepam (24)	6.08	286.10	121.11	100	41	8
	alpha-OH-Alprazolam (61)	10.67	325.14	297.2	66	37	16
	Alprazolam (76)	11.77	309.1	281.1	101	37	16
	Bromazepam (43)	8.87	315.09	209.1	91	37	16
	Citalopram (54)	10.24	324.9	109.1	61	41	6
	Clobazam (90)	13.05	301.07	259.18	13	60	35
	Clonazepam (83)	12.03	315.9	270	126	35	14
	Chlordiazepoxide (39)	8.01	300.16	282.1	36	31	4
	Clotiazepam (94)	13.31	319.1	154.1	60	50	10
	Diazepam (95)	13.49	284.99	154	106	39	10
	Flunitrazepam (91)	13.01	314	268.1	111	37	22
	Loprazolam (50)	9.93	465.2	252.1	68	57	10
	Flurazepam (51)	9.99	387.99	315.1	80	31	8
	Lorazepam (65)	11.25	320.95	274.98	66	33	20
	Lormetazepam (92)	12.93	334.97	288.97	81	33	16
	Medazepam (58)	10.50	270.98	225	81	41	12
	Midazolam (48)	9.74	325.98	291.1	106	39	16
	Nitrazepam (66)	11.26	282.1	236.2	5	35	4
	Nordiazepam (69)	11.32	270.98	140	106	41	10
	Oxazepam (63)	11.00	287.02	241.11	46	33	10
Prazepam (98)	14.79	325.06	271.13	46	33	10	
Temazepam (89)	12.64	301.2	255.2	36	33	4	
Tetrazepam (68)	11.30	288.93	225	61	41	12	
Triazolam (82)	11.95	343.1	239.2	61	55	10	
BZDs an.	Zolpidem (41)	8.34	308.1	235.2	98	47	10
	Zopiclone (31)	7.03	389.04	245.05	51	23	20
Opiates	6-MAM (16)	5.12	328.4	165.3	80	61	10
	EDDP (80)	11.9	278.2	234.2	60	35	10
	Buprenorphine (56)	10.28	468.3	414.3	60	50	10

Table 7. Continuation.

Drug class	Analyte (number)	tR (min)	Q1 Mass (Da)	Q3 Mass (Da)	DP (V)	CE (V)	CXP (V)
Opiates	Codeine (10)	4.34	300.3	215.2	86	35	18
	Oxycodone (15)	5.02	316.15	241.2	60	50	10
	Dextropropoxyphene (73)	11.70	340.2	58	60	35	10
	Dihydrocodeine (6)	4.09	302.2	199.2	60	35	10
	Fentanyl (52)	9.99	337.2	188.2	60	35	10
	Hydrocodone (18)	5.33	300.2	199.1	60	50	10
	Hydromorphone (2)	3.28	286.1	185.1	60	50	10
	Oxymorphone (5)	4.08	302.1	198.1	60	35	10
	Meperidine (34)	7.60	248	220.2	66	31	16
	Methadone (86)	12.38	310.17	265.1	56	21	20
	Morphine (1)	2.67	286.3	201.2	86	33,00	10
	Tilidine (40)	8.19	274	155	36	27	12
	Tramadol (28)	6.63	264.2	57.9	60	31	4
	Tapentadol (29)	6.73	222	107	41	35	10
AD	Amitriptyline (84)	12.08	278.12	91.14	36	31	6
	Clomipramine (93)	13.16	315.2	86	60	35	10
	Desipramine (77)	11.79	276.18	72.07	60	35	10
	Desmethylvenlafaxine (20)	5.63	264.2	107	60	35	10
	Doxepine (59)	10.61	280	107	71	27	0
	Fluoxetine (74)	11.70	310	44	56	39	0
	Imipramine (71)	11.69	281.2	86.1	60	35	10
	Mirtazapine (30)	6.92	266.1	195.1	60	35	10
	Nortriptyline (75)	11.71	264.17	191.16	60	35	10
	Paroxetine (67)	11.28	330.17	192.1	76	25	10
	Sertraline (87)	12.51	306	159	60	35	10
	Trazodone (44)	9.17	372.08	176.13	81	35	14
	Trimipramine (88)	12.53	295.2	100.1	60	35	10
Venlafaxine (37)	7.95	278	260.3	60	35	10	
AH	Alimemazine (81)	11,90	299.09	100.2	71	25	8
	Cetirizine (72)	11.69	389.16	201	60	35	10
	Chlorpheniramine (33)	7.35	275.1	230.1	60	35	10
	Brompheniramine (35)	7.93	319	274.1	60	35	10
	Cyproheptadine (79)	11.82	288.2	191.2	127	53	10
	Diphenhydramine (53)	10.07	256.2	165.1	60	35	10
	Doxylamine (14)	4.77	271.2	167.2	60	35	10
	Hidroxizine (70)	11.52	375.18	201.12	60	35	10
Promethazina (64)	11.04	285.08	86.3	51	27	6	
AMP	Amphetamine (7)	4.09	135.89	91.11	66	23	14
	MDA (12)	4.67	180.25	105.1	51	30	6
	MDEA (26)	6.14	208.03	163.13	56	19	10
	MDMA (17)	5.23	193.74	162.97	51	19	10
	Metamphetamine (13)	4.71	150.071	119.16	46	17,00	8

Table 7. Continuation.

Drug class	Analyte (number)	tR (min)	Q1 Mass (Da)	Q3 Mass (Da)	DP (V)	CE (V)	CXP (V)
APD	Aripiprazole (85)	12.17	448.1	285.2	100	35	15
	<i>Clotiapine*</i>	11.8	344	287	60	35	10
	Clozapine (38)	8.00	327.1	270.1	60	30	10
	Haloperidol (62)	10,89	376.14	165.11	46	33	10
	Quetiapine (46)	9.38	384.13	253.06	81	37	30
	Ziprasidone (55)	10.25	413	194	91	41	14
DID	Ketamine (25)	6.08	238	125	71	39	8
	Phencyclidine (49)	9.8	244.2	91.07	60	35	10
	Norketamine (19)	5.47	224.10	125.04	31	35	28
HALL	Mescaline (8)	4.21	212.3	180.3	60	35	10
	LSD (42)	8.34	324.2	223.2	60	35	10
CO	Benzoyllecgonine (22)	5.80	289.9	168.2	76	27	10
	Cocaine (36)	7.93	304	82.1	71	47	4
	Ethylbenzoilecgonine (45)	9.21	318	198.15	71	25	10
CAT	Mephedrone (23)	5.8	78	160.2	60	35	10
	4-MEC (27)	6.27	192	144	60	35	10
AED	Phenitoin (60)	10.62	253.1	104.1	60	50	10
	Pregabalin (3)	3.61	160.1	55.1	46	41	8
	Gabapentin (4)	3.98	172.2	137	60	35	10
ASD	Atropine (21)	5.70	290	124.1	111	35	20
	Scopolamine (11)	4.61	304.13	138.1	76	33	8
MR	Cyclobenzaprine (78)	11.79	276	215	51	57	16
	Carisoprodol (57)	10.48	261	62	51	13	12
ANX	Meprobamate (32)	7.17	219	158	46	13	12
AHT	Clonidine (9)	4.29	230	160	81	41	10
AN	<i>Metoclopramide*</i>	6.5	300	227	60	35	10
ATU	Dextrometorphan (47)	9.62	272.2	171.2	60	35	10
ISs	Morphine-d ₃ (Is-1)	2.67	289.1	209.1	83	33	10
	Pregabalin-d ₆ (Is-2)	3.30	166.1	148.1	46	17	10
	Metamphetamine-d ₅ (Is-3)	4.71	155.1	121.1	46	17	8
	Ketamine-d ₄ (Is-4)	6.08	241.9	129.1	56	37	8
	Oxazepam-d ₅ (Is-5)	11.00	292.1	246.1	51	31	16
	Zolpidem-d ₆ (Is-6)	8.34	314.3	235.2	61	47	4
	Diazepam-d ₅ (Is-7)	13.49	290.1	198.2	56	43	10

BDZs: benzodiazepines; BDZs an.: benzodiazepines analogous; AD: antidepressive drugs; AH: antihistaminic drugs; AMP: amphetamines; APD: antipsychotic drugs; DID: dissociative drugs; HALL: hallucinogens; CO: cocaine; CAT: cathinone; AED: antiepileptic drugs; ASD: antispasmodic drugs; MR: muscle relaxant; AHT: antihypertensive drugs; ANX: anxiolytic; AN: antinausea; ATU: antitussive; ISs: Internal Standards. 6-MAM: 6-monoacetylmorphine; EDDP: 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine; MDA: 3,4-methylenedioxyamphetamine; MDEA: 3,4-methylenedioxymethamphetamine; MDMA: 3,4-methylenedioxymethamphetamine; LSD: lysergic acid diethylamide; 4-MEC: 4-methylethcathinone. Not included in chromatograms*.

Assay performance.

The proposed methodology was tested with regard to matrix effect, process efficiency and recovery (RE). Furthermore, the identification of all analytes was tested for spiked blank samples at three different levels of concentration (1, 10 and 100 ng/mL) and a mixture of seven deuterated substances (morphine-d₃, pregabalin-d₆, metamphetamin-d₅, ketamin-d₄, zolpidem-d₆, oxazepam-d₅ and diazepam-d₅) was used to include internal standard along the chromatogram.

First, the influence of the matrix on the detection and identification of the selected analytes in whole blood samples was studied. For that, the parameters of matrix effect, process efficiency and recovery were addressed according to the simplified approach described by Matuszewski [29]. This procedure implied the preparation of three sets samples and six replications for each set.

For the preparation of the set sample 1, 50 µL, of each working solution at 100 ng/mL were evaporated at dryness and reconstituted with 200 µL of mobile phase, reaching a concentration of 250 ng/mL. A stream of nitrogen (lower than 5 psi) was applied to avoid the evaporation of the more volatile compounds.

For set sample 2, blank blood specimens were extracted. Then, prior to evaporation, 50 µL of each working solution at 100 ng/mL were added. After evaporating, the extract was reconstituted with 200 µL of mobile phase.

For set sample 3, blank blood specimens were spiked with 50 µL of the respective spiking solution. Thereafter, the samples were extracted following the steps established for the three tested procedures.

Furthermore, limits of detection (LODs) were also calculated for the analytes included in this study. S/N ratios for each peak of chromatograms registered at 10 ng/mL were used for the calculation of LODs. LOD was calculated as $3S/N$.

Finally, the applicability of the proposed methodology was evaluated by the analysis of blood samples from fifteen real DFSA cases previously analyzed in the Department of Chemistry of the INTCF. Previous analyses in official forensic laboratories had provided positive results to compounds frequently related to DFSA offenses. These samples were analyzed again using the proposed methodology to compare results. Blood samples from real cases were prepared following the procedure combining PP and phospholipid removal.

RESULTS AND DISCUSSION**Screening method for the main DFSA analytes.**

Compounds frequently related to DFSA cases listed by SOFT [6] and UNODC [7] were included in the proposed methodology. The suitable forensic investigation of alleged DFSA cases highly requires the search of analytes listed by these international authorities in biological samples from victims.

Included compounds were classified into several pharmacologic groups indicated in Table 7. Benzodiazepines are the largest group. Likewise, two analogous of benzodiazepines were also included. Antidepressants are the second largest group, followed by antihistamines. Rest of pharmaceuticals includes antipsychotic, antispasmodic, anti-epileptic, antihypertensive, anti-nausea and antitussive drugs, as well as muscle relaxants. Abused drugs as amphetamines and cocaine were also included, along with cathinones, dissociative and hallucinogenic substances.

New chromatographic conditions were opportunely established to achieve the correct separation of included compounds at their corresponding retention times. The MS detector operated in SMRM mode, increasing selectivity and allowing the correct detection and identification of all the included compounds. Therefore, difficulties derived from peaks overlapping between detection windows of different compounds could be overcome. In addition, the third quadrupole operation mode of the mass spectrometer was programmed to work as an ion trap, achieving a greater sensitivity.

All compounds included in the new screening methodology were successfully separated, as Fig. 24 shows. Analyses were carried out grouping all compounds in 5 different groups and at 100 ng/mL. Numbers in Table 7 identify each peak. Morphine was the first detected analyte (1). Detection windows overlapped for some compounds, but this did not prevent the correct observation of their chromatographic peaks. Thus, for chromatogram 1A, retention times of nitrazepam (63), tetrazepam (65) and nordiazepam (66) matched between 11.4 and 11.7 min. In the same way, retention times for triazolam (83) and clonazepam (84) matched between 11.95 and 12.03 min. Similarly, for chromatogram 1B, retention times of citalopram (55) and ziprasidone (56) matched between 10.24 and 10.25 min, as well as retention times of cetirizine (73), fluoxetine (76) and nortriptyline (78), at 11.69, 11.70 and 11.71 min. Nevertheless, despite of partially overlapped detection windows, all compounds were successfully detected and identified, showing the great selectivity of the proposed screening methodology.

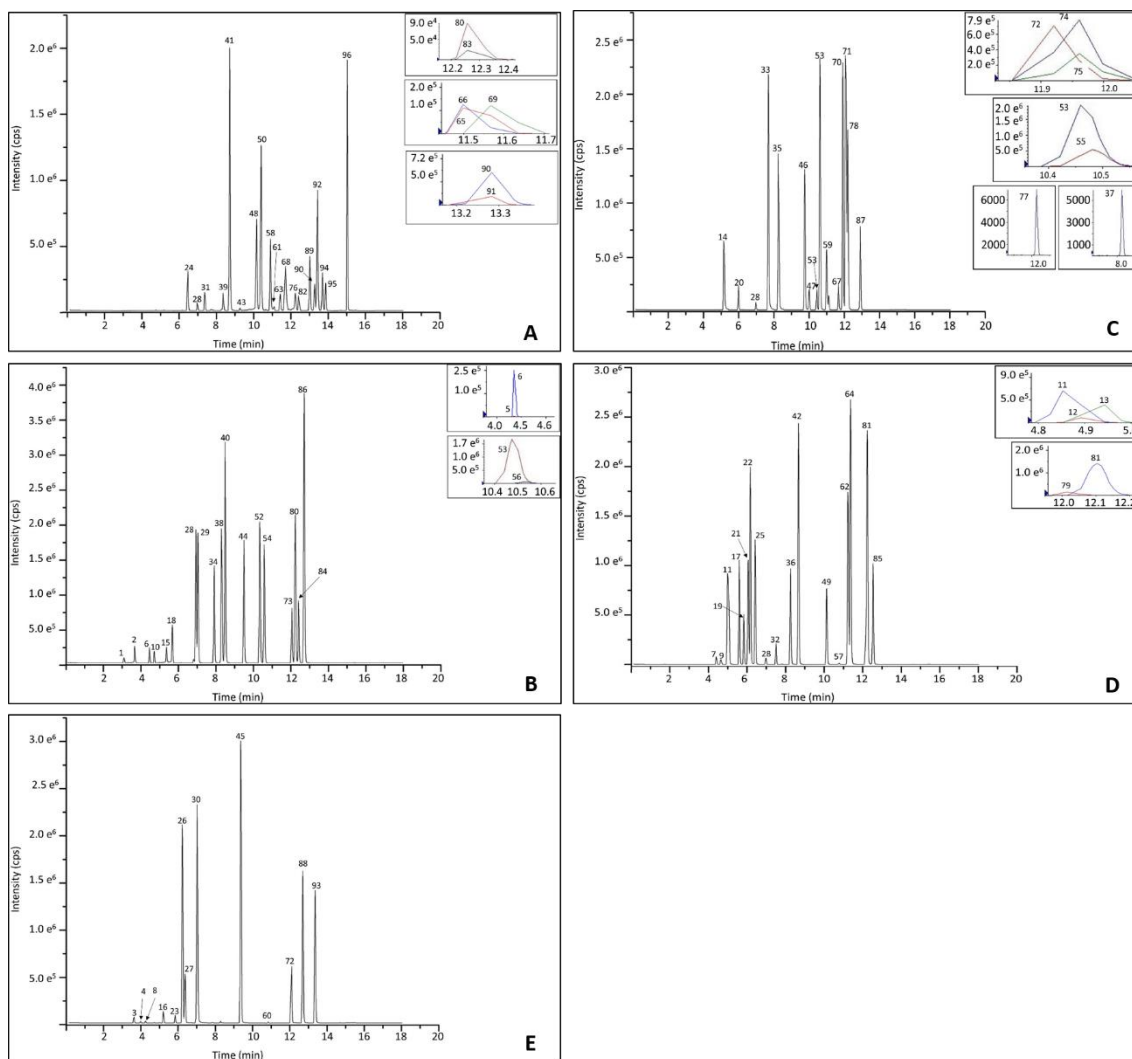


Fig. 24. Chromatograms of the 96 compounds (at 100 ng/mL) studied in the different groups. Table 7 includes some relevant characteristics and the name of the identified peaks.

Compounds of the internal standard mixture used to test the proper functioning of the proposed methodology were also correctly separated and identified, such as is showed in the Fig. 25, which illustrates the chromatogram recorded from the internal standard mixture used.

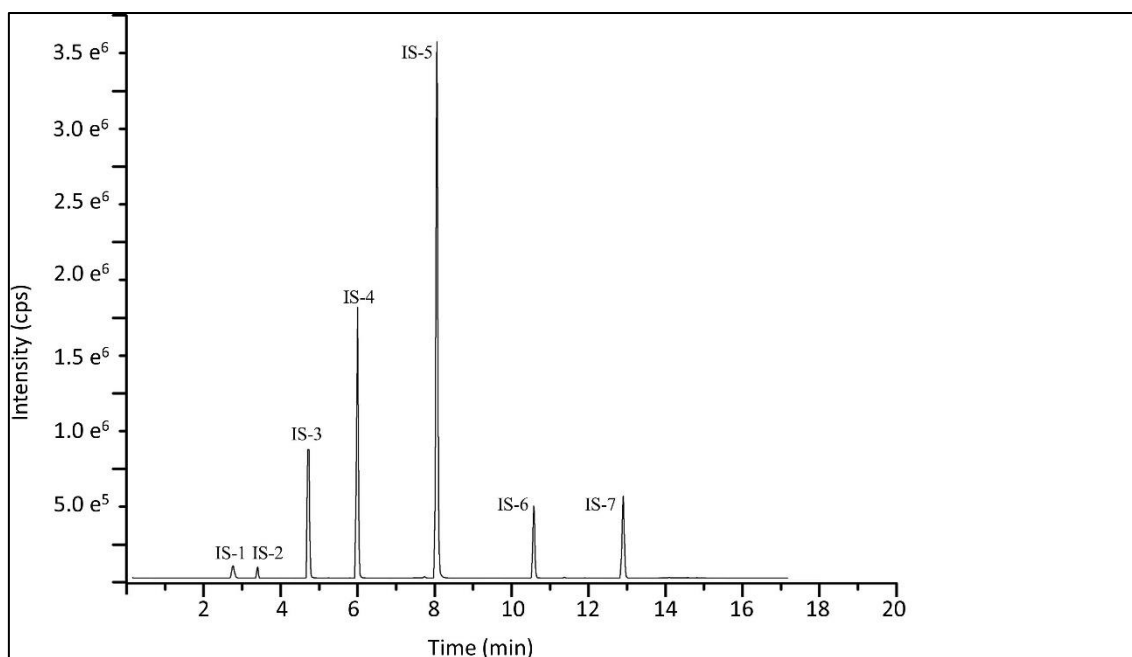


Fig. 25. Chromatogram of the internal standard mixture (at 100 ng/mL). Table 7 includes some relevant characteristics and the name of the identified peaks.

Blood samples preparation.

Blood samples have a significant role in the forensic investigation of alleged DFSA cases. This biological matrix is available in 53.9 % of cases, being the only one in > 28.9 % [13]. This led to the need of developing sensitive methods for the analysis of blood samples in order to detect any possible substance in the bloodstream of the victim at the time of sample collecting. However, complex composition of blood requires a suitable preparation treatment before the analysis to eliminate possible interferences from the matrix. The previous systematic toxicological analysis at the INTCF included solid phase extraction by a procedure using Bond Elut columns, as well as protein precipitation with acetone prior to CEDIA immunoassay. Nevertheless, phospholipids and proteins are the principal interfering substances, so treatments must focus in them or reducing their presence as much as possible. In this way, techniques of protein precipitation, solid phase extraction and liquid-liquid extraction were compared for blood treatment before the analysis. These sample treatment techniques involved six different procedures. Percentages of detected compounds were studied for the six sample preparations procedures at three different concentration levels (100, 10 and 1 ng/mL). Spiked blank blood samples were used. All compounds were analyzed twice (duplicate). Criteria for positivity were checked after analyses in order to verify correct detection and identification. Additionally, results from the six procedures were compared also for matrix effect, extraction recovery and process efficiency using a smaller group formed by 25 benzodiazepines and related Z-drugs.

Detection capacity according to the blood treatment.

First, because of proteins and phospholipids are the main interferences from blood, four procedures based in protein precipitation methods were compared. These focused protein precipitation and phospholipid removal as two significant stages in order to remove important analytical interferences. In this way, three procedures combined both stages using Phree® or Ostro Plates® for phospholipid removal, meanwhile one used only protein precipitation. Comparisons were based on detection capacity results shown in Fig. 26. At 100 ng/mL, the procedure combining protein precipitation and phospholipid removal using Ostro® plates reached 85.2 %, the highest percentage of detected compounds. However, detection capacity significantly decreased at lower concentrations (29.7 % compounds at 10 ng/mL and 15.9 % at 1 ng/mL) for this procedure using Ostro® plates. The procedure combining precipitation and phospholipid removal with Phree® plates reached 75.8 % at 100 ng/mL, the second higher detection percentage at the greatest concentration level. Interestingly, at lower concentrations it provided the highest results between all procedures based in protein precipitation, thus 60.9 % and 31.9 % of compounds were detected at 10 ng/mL and 1 ng/mL, respectively. Another alternative combining cell lysis sonication and phospholipid removal by Phree® plates provided poorer detection levels at the three concentration levels tested: 71.9 % at 100 ng/mL, 58.8 % at 10 ng/mL and 21.4 % at 1 ng/mL. Finally, the procedure based only in protein precipitation detected significantly less compounds at 100 ng/mL and 10 ng/mL, reaching 56.6 % and 21.9 %, respectively. However, this procedure provided a slightly higher result at 1 ng/mL, detecting 26.4 %. Therefore, among the four tested precipitation procedures, the combination using Phree® plates was selected because of provided the best results of detection capacity at high and low concentrations, being the most promising alternative for DFSA analytes usually found at low concentrations.

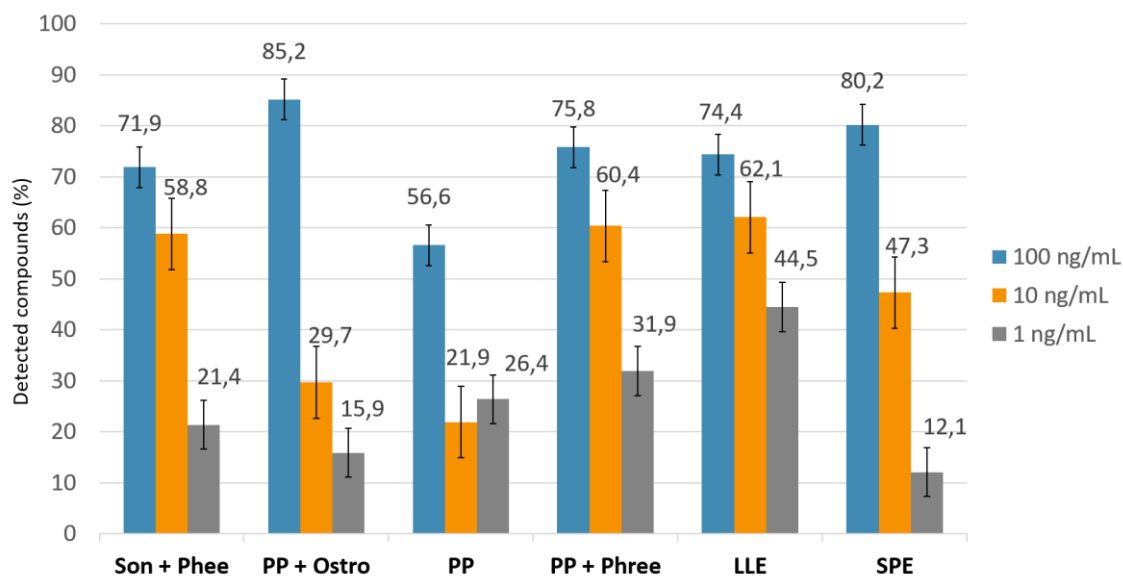


Fig. 26. Bar chart showing percentages of detected compounds by tested sample treatments at three concentration levels (100, 10 and 1 ng/mL). Son: sonication; Phree: Phree® Phospholipid Removal Plates; Ostro: Ostro® Sample Preparation Plates; LLE: liquid-liquid extraction; SPE: solid phase extraction; PP: protein precipitation only.

Then, the selected protein precipitation procedure was compared with other two widely used sample preparation techniques, as solid phase extraction and liquid-liquid extraction. Detectability results from both procedures are also included in Fig. 26. At 100 ng/mL, the three treatments detected similar percentages of compounds. Solid phase extraction reached the highest value, 80.2 %, meanwhile protein precipitation detected 75.8 % and liquid-liquid extraction 74.7 %. Once again, protein precipitation and liquid-liquid extraction reported very similar results at 10 ng/mL, detecting 60.4 % and 62.1 %, respectively. However, detection by solid phase extraction decreased to 47.2 %. In this line, solid phase extraction also provided the lowest detection at 1 ng/mL, reaching the 12.1 %. At the lowest concentration, the procedure using Phree® plates detected 31.8 %; meanwhile liquid-liquid extraction reached 44.5 %.

Despite differences in detection percentages observed at 1 ng/mL between procedures combining precipitation and phospholipid removal and that based on liquid-liquid extraction, the former was selected because of its especially favourable features for the investigation of blood in alleged DFSA cases. In this sense, some features of DFSA casuistry must be considered: toxicological investigation of alleged DFSA cases requires not selective extraction techniques because of both the number of involved substances and their physicochemical properties are unknown, that is why a screening methodology is necessary. Not selective techniques prevent loss of analytes potentially present in the sample. However, victims often delay seeking for help

and report to authorities, so biological matrices are collected when a notable time has passed from the alleged attack. Over time, metabolization and excretion processes decrease the detectability of substances in biological matrices. Concentration levels decrease faster in blood, whose detection window is smaller than for other matrices. Less selective extraction detectability levels. This facilitates the extraction of both polar and non-polar analytes regardless of their concentration in the collected samples from victims. The procedure combining protein precipitation and phospholipid removal is less selective in comparison to solid phase and liquid-liquid extraction techniques. Thus, whereas the first allows the extraction of polar and non-polar molecules, the other two only facilitate the extraction of non-polar compounds. Therefore, the procedure combining protein precipitation and phospholipid removal using Phree® plates was selected for the multi-target screening method developed.

Matrix effect; process efficiency and extraction recovery according to the blood treatment.

For this comparison study, a group formed by 23 benzodiazepines and 2 Z-drugs were used. Between procedures based in protein precipitation, the combination of precipitation and phospholipid removal with Phree® plates reached both highest extraction recovery and process efficiency results, 69 % and 103 % respectively, as is shown in Fig. 27. Moreover, this procedure provided a properly matrix effect, with a positive average value of 53 %. However, extraction recovery gradually decreased for procedures using Ostro® plates (66 %), sonication (45 %) and only precipitation (36 %). Regarding to process efficiency, results from these three procedures were significantly lower than that reached by precipitation combined with phospholipid removal by Phree® plates. In this way, the procedure with sonication reached 27 %, meanwhile that using Ostro® plates and only precipitation reached 2 % and 6 % respectively. Furthermore, these three methods showed significant negative matrix effect: - 97 % for the method with Ostro® plates, - 83 % using only precipitation and - 39 % for the procedure employing sonication cell lysis. Therefore, between tested procedures based in protein precipitation, results indicate again that the combination of protein precipitation and phospholipid removal using Phree® plates was the best alternative.

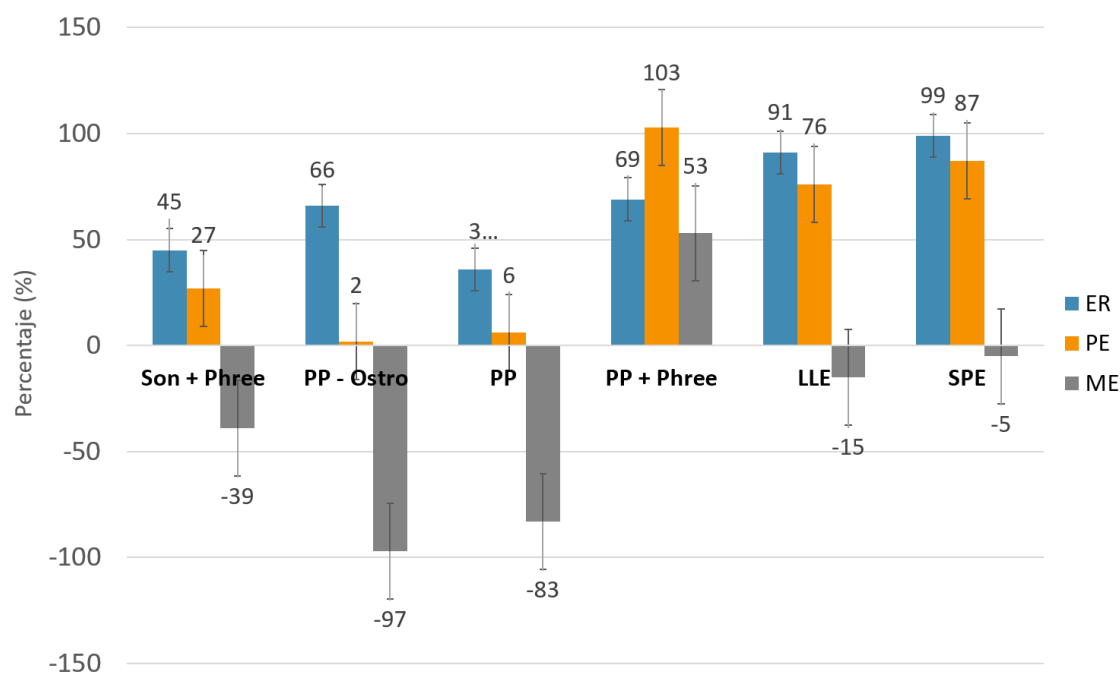


Fig. 27. Bar chart showing percentages of Extraction Recovery (ER), Process Efficiency (EP) and Matrix Effect (ME) tested for 25 compounds at 250 ng/mL). Son: sonication; Phree: Phree® Phospholipid Removal Plates; Ostro: Ostro® Sample Preparation Plates; LLE: liquid-liquid extraction; SPE: solid phase extraction; PP: protein precipitation only.

On the other hand, Fig. 27 also presents results from solid phase and liquid-liquid extraction. In this way, the comparison with these other two extraction techniques showed as the selected procedure based in protein precipitation produced the greatest increase of the analytical signal. Solid phase and liquid-liquid extraction provided negative matrix effect, reaching average values of - 5 % and - 15 %, respectively. These two procedures led to decrease of analytical signal intensity for most compounds. This coincides with expected results, since solid phase and liquid-liquid extraction are cleaner techniques.

Chlordiazepoxide signal intensity significantly decreased for the three compared techniques, meanwhile alpha-hydroxy-alprazolam provided the greatest increase by solid phase extraction and protein precipitation. Matrix effect for solid phase extraction was between 132 % for alpha-hydroxy-alprazolam and - 90 % for chlordiazepoxide. Concerning liquid-liquid extraction, matrix effect varied from 40 % for bromazepam to 86 % for chlordiazepoxide. For the procedure combining protein precipitation and phospholipid removal, matrix effect ranged from 314 % for alpha-hydroxy-alprazolam to - 88 % for chlordiazepoxide.

Regarding extraction recovery, liquid-liquid and solid phase extraction procedures provided the highest average results, reaching 99 % and 92 %, respectively. Protein precipitation reached an

average recovery value of 66 %. Extraction recovery for solid phase extraction ranged from 329 % for chlordiazepoxide to 60 % for 7-aminoclonazepam. For liquid-liquid extraction, it was between 117 % for tetrazepam and 56 % for alpha-hydroxy-alprazolam. Values for protein precipitation oscillated between 135 % for zolpidem and 27 % for chlordiazepoxide.

Furthermore, the procedure combining protein precipitation and phospholipid removal showed the highest process efficiency, reaching an average value of 103 %. Results for liquid-liquid and solid phase extraction was 76 % and 87 %, respectively. For solid phase extraction, PE was between 209 % for alpha-hydroxy-alprazolam and 32 % for chlordiazepoxide. Values for liquid-liquid extraction ranged between 115.1 % for nitrazepam and 12 % for chlordiazepoxide. Finally, the procedure combining protein precipitation and phospholipid removal showed a PE between 274 % for alpha-hydroxy-alprazolam and 3 % for chlordiazepoxide.

The matrix effect increased analytical signals when the sample preparation using protein precipitation was applied. Likewise, an important decrease in the analytical signal was observed for most compounds when applying the more selective solid phase and liquid-liquid extraction. However, matrix effect is not a serious problem in this study because of the screening methodology is qualitative. Moreover, even a slight increase of the analytical signal can facilitate a better qualitative observation of target analytes. Furthermore, the procedure combining protein precipitation and phospholipid removal using Phree® plates reached the highest average value for process efficiency. These results, as well as already referred suitable percentages of detected compounds in the previous section, led to the selection of this procedure in the multi-target screening method developed.

Analytical performance of the screening method.

The new developed methodology focuses to the multi-target screening of analytes related to DFSA casuistry in blood samples. As qualitative method, analytical performance was evaluated studying selectivity and LODs.

Selectivity.

Selectivity of the new methodology was confirmed by obtained results from blank blood samples analysis. Any relevant interference from the matrix was observed at the retention time of the 98 compounds included in the proposed methodology. The Fig. 28 shows the chromatogram resulting from the analysis of a blank blood sample. Minor signals from the matrix were observed around minutes 7.86 and 7.58, coinciding with the retention times of cocaine, chlordiazepoxide, dozapine, venlafaxine and brompheniramine. However, these signals had an intensity lower

than 2000 cps, so they did not interfere the analytical detection. Another interference from the matrix appeared at 15.08 min and reached 5580 cps, coinciding with the retention time of prazepam at 14.79 min. However, neither problem was observed for detection and identification of this compound. Therefore, results confirmed the good selectivity of the new methodology, as well as the suitability of the extraction procedure combining protein precipitation and phospholipid removal for the analyses of blood samples in alleged DFSA cases.

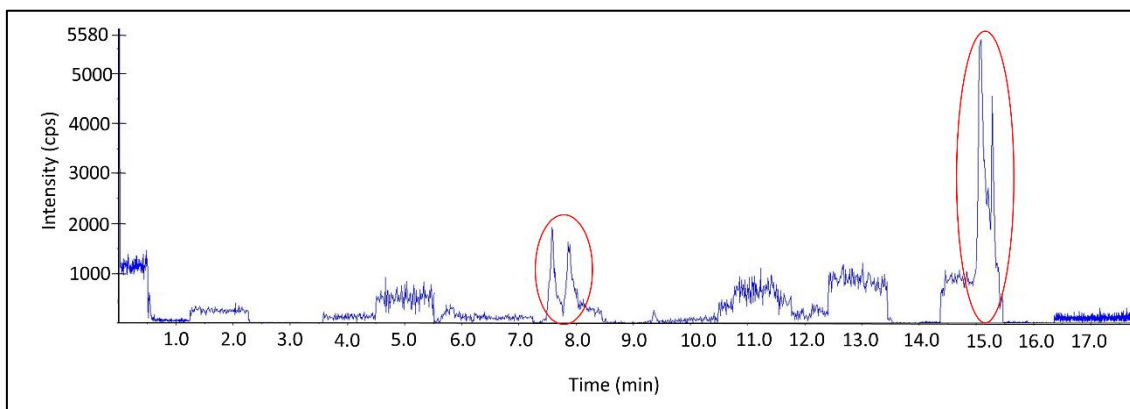


Fig. 28. Chromatogram of a blank blood sample treated by protein precipitation and phospholipid removal.

Limits of detection.

LODs were calculated using the S/N obtained for each compound from chromatograms at 10 ng/mL. In this way, as is shown in Fig. 29, most analytes provided LODs under 1 ng/mL, the lowest concentration level analyzed. Thus, for 59 substances LODs were between 0.1 and 0.4 ng/mL, meanwhile values for other 15 compounds ranged 0.5 to 0.9 ng/mL. Beyond 1 ng/mL, LODs for 9 compounds were between 1.0 and 1.4 ng/mL. Obtained values oscillated between 2.1 and 2.5 ng/mL for other 3 compounds, whereas 4 analytes had LODs ranged from 3.3 to 5.0 ng/mL. Finally, LODs for 7 compounds were higher than 5 ng/mL. Likewise, 6 substances were between 5.1 and 10 ng/mL, meanwhile there was one analyte with a LOD of 10.7 ng/mL. Table 8 shows names of compounds included in each LODs range.

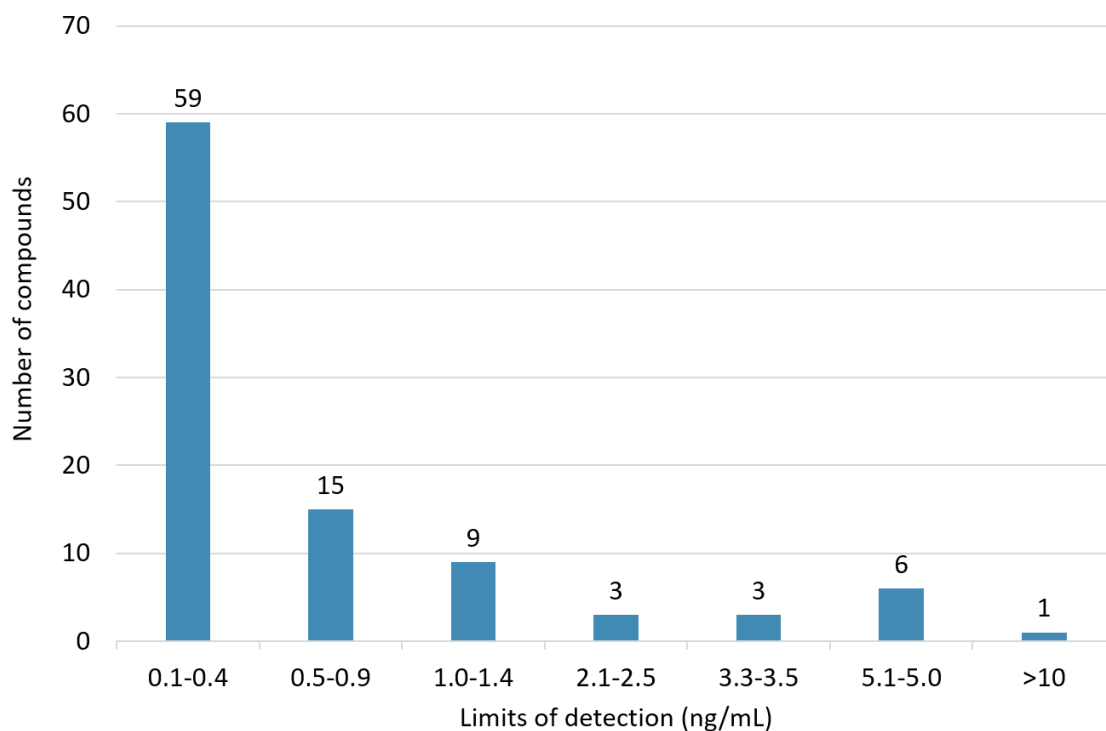


Fig 29. LODs for the compounds included in the screening methodology.

Table 8. LODs for the compounds included in the screening methodology.

LODs (ng/mL)	Compounds
0.1 – 0.4	Scopolamine, MDA, MA, doxylamine, oxycodone, hydrocodone, norketamine, atropine, benzoylecgonien, 7-amineclonazepam, ketamine, MDEA, 4-MEC, tapentadol, tramadol, mirtazapine, chlorpheniramine, meperidine, cocaine, clozapine, tilidine, zolpidem, LSD, trazodone, ethylbenzoilecgonine, quetiapine, midazolam, phencyclidine, loprazolam, flurazepam, fentanyl, citalopram, ziprasidone, buprenorphine, medazepam, haloperidol, promethazine, paroxetine, hydroxizine, imipramine, cetirizine, dextropropoxyphene, fluoxetine, nortriptyline, cyclobenzaprine, cyproheptadine, alimemazine, amytriptiline, aripiprazole, metahdone, trimipramine, temazepam, clobazam, flunitrazepam, clomipramine, clotiazepam, prazepam
0.5 – 0.9	Hydromorphone, oxymorphone, duhydrocodeine, codeine, MDMA, zopiclone, meprobamate, doxepine, lorazepam, tetrazepam, nordiazepam, alprazolam, desipramine, lormetazepam, diazepam
1.0 – 1.4	Morphine, 6-MAM, desmethylvenlafaxine, venlafaxine, chlordiazepoxide, oxazepam, diphenhydramine, triazolam, clonazepam
2.1 – 2.5	Amphetamine, mephedrona, dextrometorphan
3.3 – 5.0	Pregabalin, clonidine, sertraline
5.1 – 10.0	Gabapentine, mescaline, bromazepam, phentoine, alpha-OH-alprazolam, EDDP
>10	Carisiprodol

MDA: 3,4-methylenedioxyamphetamine; MA: methylamphetamine; MDEA: 3,4-methylenedioxymethamphetamine; 4-MEC: 4-methylethcathinone; LSD: lysergic acid diethylamide; MDMA: 3,4-methylenedioxymethamphetamine; 6-MAM: 6-monoacetylmorphine; EDDP: 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine.

Application to the analysis of real forensic samples.

The proposed methodology was applied to the analysis of fifteen blood samples from DFSA cases, using protein precipitation with phospholipid removal as sample preparation procedure. These samples had been previously analyzed in the INTCF by the analytical systematic of the official laboratory. Through this systematic, firstly proteins were removed by precipitation with acetone and shaking. Then, supernatant was mixed with hydrochloric acid, following an assay by CEDIA enzyme-linked immunosorbent. Moreover, the systematic includes solid phase extraction with BondElut and subsequent analysis by HPLC-MS/MS.

The Table 9 shows the obtained analytical results, observing as the proposed methodology confirmed initial results for eight cases. Specifically, those identified in Table 9 as number one, seven, eight, nine, eleven, twelve, fourteen and fifteen. In these cases, both official systematic and the proposed methodology provided exactly the same results. So, none substances were detected in cases number seven, nine, fourteen and fifteen. For case number one, both the two methodologies detected the previous consumption of ecstasy or MDMA. Similarly, in case number eight both match one more time, with the detection of cocaine, benzoilecgonine and ethylbenzoilecgonine. In the same way, lorazepam and sertraline were detected in cases number eleven and twelve, respectively. On the other hand, several false negatives were observed for different substances. So, in case number six, the proposed methodology detected the presence on mirtazapine, which had remained hidden to the official procedure. The same happened respectively in samples ten and thirteen, with the detection of nordiazepam and mirtazapine. However, the greatest differences between the both procedures were observed for cases identified as two, three, four and five. In these samples, analytical findings differed for the detection of two or more compounds. Curiously, in case number three, the official procedure identified a compound not detected by the proposed methodology.

Table 9. Comparison of the detected compounds after the analysis of fifteen blood samples from DFSA cases by the proposed methodology and by an analytical systematic previously used in official laboratories.

Case	Detected compounds	
	Previous analytical systematic	Proposed methodology
1	MDMA	MDMA
2	Diazepam, codeine	Diazepam, codeine, hydrocodone, nordiazepam, sertraline, temazepam
3	Clonazepam, mirtazapine	Clonazepam, 7-aminoclonazepam, zopiclone, lorazepam
4	Cocaine, benzoilecgonine	Cocaine, benzoilecgonine, MDMA, haloperidol
5	Lorazepam	Lorazepam, benzoilecgonine, 7-amineclonazepam, cocaine, alprazolam clonazepam
6	N.D.	Mirtazapine
7	N.D.	N.D.
8	Cocaine, benzoilecgonine, ethylbenzoilecgonine	Cocaine, benzoilecgonine, ethylbenzoilecgonine
9	N.D.	N.D.
10	Aripiprazole, fluoxetine, clotiapine	Aripiprazole, fluoxetine, clotiapine, nordiazepam
11	Lorazepam	Lorazepam
12	Sertraline	Sertraline
13	Citalopram	Citalopram, mirtazapine
14	N.D.	N.D.
15	N.D.	N.D.

N.D: no detection. Other abbreviations as defined in Table 1. Compounds detected only by the proposed methodology are highlighted in bold.

As observed through comparisons, in some cases the official systematic did not detect several substances. However, these analytes were detected by the new multi-target screening methodology. It should be noted that the official systematic also included the search of these substances not detected initially. These differences in results are due to the greater sensitivity of the proposed methodology. In this sense, to harness the capacity of the third quadrupole for operating as an ion trap was a key factor. EPI scans were generated when the spectral signal reaches a pre-set intensity, which contributed in a very important way to improve sensitivity. In addition, an extraction procedure of blood samples directly focused on the elimination of proteins and phospholipid helped to the improvement of the detected compounds in real DFSA cases.

CONCLUSION

The proposed analytical methodology was developed for the multi-target screening of 96 compounds related DFSA in whole blood samples from alleged victims of this type of sexual violence. Referral listings from recognized organizations compiling substances involved in DFSA were considered for the selection of all compounds. The proposed method uses a HPLC-MS/MS system operating in sMRM mode. A survey scan monitoring all ionic fragmentation reactions is complemented by the hybrid operating of the third quadrupole as an ion trap and provides EPI spectra. The high sensitivity of the new methodology allowed the correct separation, detection and identification of the 96 targeted compounds included. Furthermore, the whole blood is an important sample for the forensic investigation of alleged DFSA because this is usually submitted to the forensic laboratory in this type of cases and frequently the only one available biological matrix. Consequently, analytical methodologies specifically focused on blood treatment are necessary. However, these must consider the elimination of phospholipids and proteins as principal interfering substances in the analytical examination of blood samples. The proposed methodology combines a blood sample preparation treatment including these two necessary stages focused on protein precipitation and phospholipid removal. The implemented extraction technique is also advantageous considering the delay frequently characterizing report DFSA cases and subsequent sample collection. Blood concentration levels decrease as time goes by, so bit selective sample preparation techniques are especially required for the toxicological screening of these sexual assaults. Results from the capacity of detection and influence from the matrix were compared for extraction techniques based on protein precipitation, solid-phase extraction, and liquid-liquid extraction. The treatment combining protein precipitation and phospholipid removal increased the analytical signal for most compounds in comparison with liquid-liquid and solid phase extractions. However, no significant interferences from the matrix were observed, so detection and identification were not affected. Although blood treatment based on protein precipitation has shown lower detection capability than liquid-liquid extraction, was the selected sample preparation procedure because of its suitability to analytical particularities of blood analyses during the toxicological screening of alleged DFSA cases. To bear in mind these aspects is necessary to improve the forensic investigation of this form of sexual violence. Obtained results are good, but further investigations in blood preparation procedures based on protein precipitation can be focused to reduce the matrix influence and improve the capacity of detection. Due to the proposed methodology works in positive ionization mode only, so acidic compounds related DFSA are not included, such as GHB. In this line, the inclusion of pending substances must ever be accompanied by a periodical check of compounds to be

searched, those progressively appearing related to DFSA. Despite this, the proposed methodology comprises a significant number of compounds included in international listings. Moreover, successful results obtained through the analysis of fifteen blood samples from real cases demonstrated the potential of the proposed multi-target screening method for the forensic investigation of DFSA cases.

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4.4. Increasing Awareness of Government Institutions about the Severity of the DFSA Phenomenon.

Understanding the characteristics and nature of the DFSA phenomenon is crucial for increasing awareness about the problem and developing well-targeted actions focused on preventing it and accompanying victims [1]. This is a common observation both at an individual as a social level. Of course, also concerning decision-makers, authorities, and institutions with the power and responsibility for improving social conditions. In this sense, promoting a more significant institutional support against the DFSA phenomenon largely depends on increasing awareness of public authorities and institutions, focussing on its severity, main phenomenological features, and difficulties victims face. However, this labor requires adjusting awareness messages to communication channels that adequately reach target interlocutors. In this case, contacting public authorities and institutions involves using the available ways for civilian participation and expression. This section shows some efforts developed during this thesis to increase public institutions' awareness about the severity of the DFSA phenomenon and encourage institutional support against this form of sexual violence. These efforts consisted of seizing various opportunities for public participation, including the UN75 Initiative [2] of the United Nations, different open calls to prizes vested by public institutions at the local, national, and international levels [3-5], and the publication of awareness messages in mass media. Therefore, as in the case of research stays, these actions also encompassed different efforts, performed both in Spain and abroad, to reach authorities at the local, national, and international sphere. Consequently, this section starts explaining this thesis author's engagement in the UN75 Initiative named "Shaping our Future Together", a global dialogue celebrated by United Nations in 2020 [2]. Subsequently, this section compiles three experiences of participation in open calls to public prizes granted by public institutions at the local, national and international spheres [3-5]. Finally, it includes a list encompassing interventions performed in mass media focused on increased awareness of institutions and society as a whole about the severity of the DFSA phenomenon.

THE UN75 INITIATIVE: SHAPING OUR FUTURE TOGETHER

In January 2020, United Nations' Secretary-General launched the yearlong UN75 Initiative as an exercise for the United Nations to listen to the people worldwide, understand their priorities and expectations of international cooperation, and what issues they perceive as most pressing [6]. Under the legend "shaping our future together", the United Nations presented the UN75 Initiative as the long biggest conversation on building a better future for all, referring to it as "the UN75 conversation" [6]. This initiative is framed within the commemoration of the seventy-fifth anniversary of the United Nations in 2020. Between January and December 2020, this global opinion exercise implemented five data streams, consisting of dialogues,

an one-minute survey, media analysis, research mapping, and independent, scientific public opinion polling [7]. Through the UN75 conversation, people worldwide shared their hopes and fears for the future, and discussed how actors, including the UN, can innovate and work together better to address the global challenges we face [7]. In this sense, for participating in this global conversation and contribute with a new viewpoint about the severity of the DFSA phenomenon, this doctoral thesis adjusted to UN75 dialogues. These dialogues were opened to everyone as an opportunity for people to discuss in detail their concerns and priorities for the future, solutions to global challenges, and to foster partnerships and action [7]. The UN75 team, in partnership with the SDG Action Campaign, developed a toolkit to support dialogues and help people seize this opportunity for conversation [6]. The idea was to spark dialogues in all settings – from classrooms to boardrooms, parliaments to village halls – on priorities for the future, obstacles to achieving them, and the role of international cooperation in making progress [6]. Dialogues were held in-person or online using social media, and participants could submit dialogue summaries to the UN75 team [7]. This chapter analyzes the communicative strategy implemented to take active participation in the UN75 Initiative. Finally, it shows the main conclusions arising from the Initiative.

1. Communicative strategy.

In this context, the UN75 Initiative participation involved developing a communicative strategy consisting of two videos that adjusted to the initiative's priority thematic lines. Below, a brief description of each video:

Video nº 1: “The participation of young people in the global processes of the United Nations for building a better world.” It was 25:86 minutes long and focused on the alignment of the academic effort regularly realized by students, researchers, and professors from the university with the Sustainable Development Challenges acknowledged by the global community through the 2030 Agenda. This first video attracts attention to an alternative, more proactive view of the university educational process, aligned with the work lines defined by the 2030 Agenda. Figure 30 shows a screenshot from the first video, which is online available at: <https://www.youtube.com/watch?v=Cwvi-fSSLbE&t=402s> [18]. Likewise, it makes a call for involving young people as the United Nations' full-fledged partners in the efforts and processes focused on achieving global challenges and built a better world for 2050, when the United Nations will be 100 years old. In this sense, in addition to encouraging young people's active involvement, this first video is already a useful dialogue from the youth community. This

observation fits one of the UN75 Initiative's key points, which particularly wanted to hear from youth and engage their voices in global discussions [6].

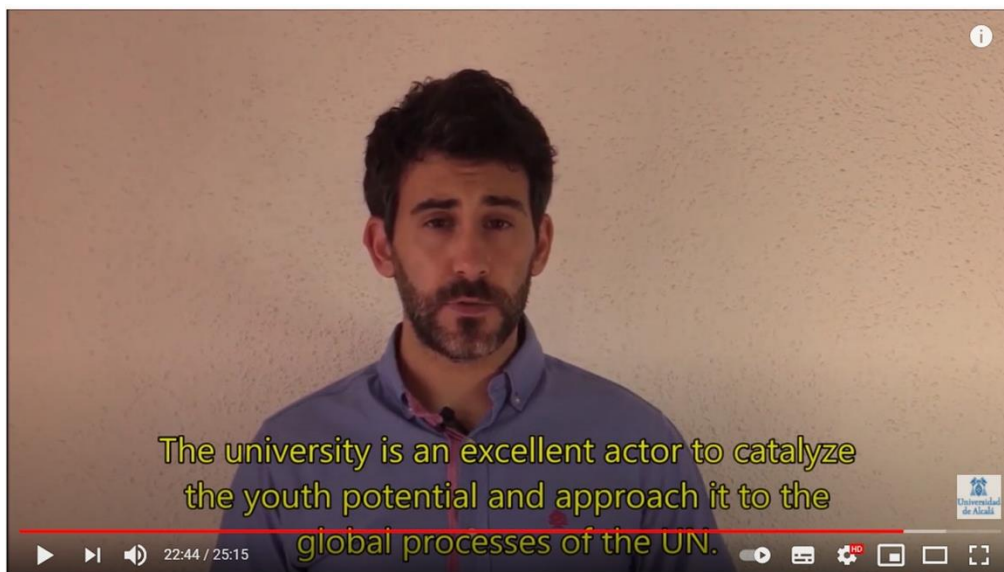


Figure 30. A screenshot from the video nº 1 integrating the developed communicative strategy for taking part in the UN75 Initiative. Video title: “The participation of young people in the global processes of the united nations for building a better world”.

Video nº 2: “Female victimization by opportunistic DFSA”. It was 17:52 minutes long, focused on another of the initiative's main topics: “*closing the gender gap between women and men*”. Figure 31 shows a screenshot from the second video, which is online available at: <https://www.youtube.com/watch?v=cJaVeAo2-iA&t=1s> [19]. Turning gender inequality around was a priority of the United Nations in 2020 [8], which also marked the 25th anniversary of the Beijing Declaration and Platform for Action [9]; the 20th anniversary of Security Council resolution 1325 on Women, Peace, and Security [10]; and the 5th anniversary of the SDGs [11]. In this sense, the second video adjusted to SDG 5, consisting of achieving gender equality and empower all women and girls. Concretely, Target 5.2, focused on eliminating all forms of violence against all women and girls [12]. At this point, since the female victimization by opportunistic DFSA in leisure nightlife contexts is a little visibility violent phenomenon, this second video also aligns with 2030 Agenda's banner “*leave no one behind*” [12].



Figure 31. A screenshot from the video nº 2 integrating the developed communicative strategy for taking part in the UN75 Initiative. Video title: “Female victimization by opportunistic DFSA”.

Therefore, both videos addressed topic lines of interest for the UN75 Initiative. However, it is crucial to highlight that both of them strength each other, forming a strong core that potentiates the communicative strategy’s scope. In this regard, the second video is a practical example of the youth’s potential for active involvement and participation in achieving the 2030 Agenda’s global challenges and building a better world, as highlighted in the first video. Therefore, the second video becomes a real example of young people’s potential for positive influence within the university context framework.

Other relevant aspects add to the strengthened core shaped by both videos, favoring, even more, the communicative strategy’s success to increase awareness about the DFSA phenomenon’s severity. In this sense, the first video’s structure followed the Toolkit’s guide questions for UN75 dialogues [6], and both videos included the official branding package provided by the UN75 team [13]. Accessible language was used to facilitate the understanding of a non-specialist audience. Likewise, both videos incorporated Spanish dialogues accompanied by English subtitles. The possibility for activating Spanish subtitles was also available. Furthermore, disclosure involved actions at three different levels:

1. A new YouTube channel named "Pablo Prego Meleiro - Universidad de Alcalá" [14] was created and used as a platform to centralize and coordinate both videos’ disclosure in

social media. Videos' link sharing involved various personal and official accounts on Twitter, Instagram, and Facebook using #UN75 and tagging @JoinUN75.

2. Using the UN75's website (<https://www.un.org/en/un75>), a dialogue's summary was sent to the UN75 team through the official dialogue feedback form (<https://www.research.net/r/VJ59YQ7>). This form included six predefined questions about the dialogue and collected information like the organizer's data and the topics covered, among other aspects. Another freestyle written summary with main conclusions accompanied it, together with links to the two videos and copies of two scientific articles recently published by the author about the DFSA phenomenon [1, 15]. This contact with the UN75 team was followed by an email sent to the official account (un75@un.org) to confirm the previously sent links and files' good reception. The same files and video links were attached to that email. This thesis's Annexe compiles the dialogue's summary sent to the UN75 team.
3. Within the university context, the University of Alcalá's News platform published an informative online note (<http://portalcomunicacion.uah.es/diario-digital/actualidad/un-alumno-e-investigador-de-la-uah-participa-en-la-iniciativa-un75?n=8>), contributing to increasing the visibility of the participation in the UN75 Initiative.

From a strategic perspective, communication efforts involved a specific time for action: mid-September 2020. This month was the UN75 Initiative's peak time. On September 21st it was celebrated the High-level Meeting to Commemorate the Seventy-fifth Anniversary of the United Nations [16]. World leaders in the General Assembly gathered in a virtual format to adopt the Declaration on the commemoration of the seventy-fifth anniversary of the United Nations [17]. Likewise, after the summer holidays, mid-September coincides with returning to work and regular activity by many public institutions and universities in Spain.

2. Conclusions from UN75 Initiative's dialogues.

According to the UN75 team, more than 1.5 million people from all 193 United Nations countries participated in the Initiative. In this sense, dialogues involved hundreds of thousands of people. Participants identified their priorities, ideas, and calls for a United Nations to respond to pressing global challenges [7]. The Concluding Report of the UN75 Office, published in January 2021, collects findings on the UN75 survey and dialogue results through November 3, 2020 [7]. This final report's main conclusions show the alignment between the UN75 dialogue presented in this thesis and results arising from the Initiative.

Regarding solutions proposed for “improving respect for human rights and social justice”, National governments are urged to ensure equal rights for women by banning all forms of harassment and discrimination [7]. This suggestion fits the UN75 dialogue previously transcribed and its motivation to stimulate institutional support against the DFSA phenomenon, which remains a little visible form of sexual violence mainly affecting young women. In fact, concerning UN75 discussions on "placing women and girls at the center", the UN75 Final Report enlists the fight against gender-based violence as a critical topic [7]. Participants around the world expressed broad concern about women's current marginalization. Again, in the line of this thesis, it is crucial to highlight that participants in these discussions called on national governments to strengthen mechanisms against gender-based crimes and the United Nations system to prioritize the eradication of gender-based violence [7].

On the other hand, concerning summaries of UN75 dialogues on “promoting peace and preventing conflicts”, the UN75 Final Report affirms that numerous conversations held with youth proposed strategies to involve civil society, national governments, and the United Nations system to build a more peaceful and secure world [7]. This is also a similarity with the dialogue included in this thesis. In this sense, as proposed by this thesis’s author, UN75 Final Report also encourages higher education to foster peaceful coexistence and engage in educational activities to raise awareness about conflicts and promote nonviolence [7]. This more proactive view of the academic sector aligns with another discussion line shared between the previously transcribed dialogue and the Final Report's conclusions. In this sense, as proposed by this thesis’s author, participants in UN75 conversations worldwide also recommended to boost partnerships and encourage higher cooperation with the university [7]. Other common recommendations include improving connections between the scientific community and decision-makers across all countries and encouraging higher education institutions to engage more with local communities. Finally, according to the UN75 Final Report, dialogues about listening to and working with young people showed that, more than any other group, the youngest believe in the human capacity to act with compassion and empathy for each other and to work together as a global family to build a world [7]. This optimistic view aligns with the confident spirit of the UN75 dialogue previously transcribed. Solutions proposed for the United Nations to listen to and work with youth include increasing their participation in decision-making processes and debates, particularly on issues that affect them. In this line, the DFSA phenomenon is a social issue mainly involving young people. Likewise, other solutions involve establishing youth participation mechanisms and creating platforms that allow young people to collaborate, share experiences, build ideas, and advocate as a global force [7]. At this point, as highlighted by this

thesis's author, education's crucial role emerges again. Concretely, engagement processes with educational institutions encouraging young people to participate in political and international processes.

3. A new "Sustainable Development Generation".

Besides previously commented aspects, it is worth noting a very significant product resulting from participating in the UN75 Initiative. In this sense, the participation process involved producing a new emblem, designed to helping conceptualization and graphic visualization of an important point discussed at Video nº 1. Figure 32 shows the new emblem.



Figure 32. The new emblem representing a generation committed to sustainable development from university higher education.

An important idea underlies this emblem, particularly aligned with the World Declaration on Higher Education for the XXI Century when claiming:

"Higher education should aim at the creation of a new non-violent society consisting of highly motivated individuals, inspired by the love for humanity and guided by wisdom" [20].

Video nº 1 includes this Declaration's text fragment when responding to the guiding question, "How can the United Nations better work with other actors?" From this statement, the video shows a careful reflection about the potential role that university higher education can play as a catalyzing agent of youth potential for participating in efforts focused on achieving the global challenges acknowledged by the 2030 Agenda. The video describes the Agenda as an action plan able to guide the university's effort capacity to contribute to sustainable development achievement. It insists on aligning the high intellectual effort periodically made from the university higher education with the global needs acknowledged by the Agenda in a historical

moment for sustainable development, claiming that SDGs and Targets can inspire young university students, researchers, and professors. On this basis, the video argues that this alignment between global challenges and the university context's academic effort would shape a new generation paying attention to social needs and challenges and act to face them. In this sense, the possibility of reaching, within the university context, a widespread commitment to efficient action for sustainable development is the idea underlying the new emblem. In this sense, the possibility of reaching, within the university context, a widespread commitment to efficient action for sustainable development is the idea underlying the new emblem. This logo evokes the result of realizing that vision by visualizing a “new generation” shaped by citizenship committed to sustainable development. In fact, it defines an “SD Generation” or “Gen SD”, in an analogy with usual terms referring to specific population groups, such as “Generation Z”, or “Generation Y”, for example. In this way, this new emblem seeks to become a banner for mobilizing the university higher education, especially young university students, in constructive action overcoming global challenges. Importantly, the idea underlying this new emblem fits one significant paragraph from the 2030 Agenda’s call for action to change our world:

“Today we are taking a historic decision. We resolve to build a better future for all people. We can be the first generation to succeed in ending poverty; just as we may be the last to have a chance of saving the planet” [12].

Finally, it is essential to highlight that this new emblem is in the process of being officially adopted by the University of Alcalá, as an authentic way of pursuing this thesis’s main objective, enhancing the university higher education's contribution to sustainable development. This thesis’s Annexe includes more information and the graphical description of the new emblem.

PARTICIPATION IN OPEN CALLS TO PUBLIC PRIZES

Beyond occasional consultations performed by institutions, such as the UN75 Initiative [2], civil participation opportunities also include open calls to prizes vested by public institutions. In this sense, as a way for participating in the public sphere, the civilian society can seize these competitive procedures as rightful opportunities to make its voice heard and express its ideas, thoughts, and worries. Open calls to prizes operate according to publicly available previously established rules, usually defining a jury composed of specialists and people near decision-maker spheres. In this way, these processes become a way to reach public authorities and institutions and share specific social interest subjects with them. Regardless of the outcome, both winner and loser proposals experience a comprehensive examination based on standard

criteria. Therefore, adjusting to previously established rules and participation guidelines ensures that submitted ideas reach or approach spheres of influence within the organizing entity. Likewise, winner proposals contribute to increasing the general visualization, recognition, and awareness of particular ideas, social needs, or issues. When official authorities and institutions acknowledge the value of specific actions through open calls to public prizes, they are not only recognizing a specific winning team. Most importantly, public institutions become themselves winning cause's upholders, the awarded idea, action, or concern, in the eyes of public perception, mass media, social media, and society. This thesis's efforts for strengthening institutional support to solutions facing the DFSA phenomenon aligned with this strategic thinking, seizing open calls to public prizes as paths useful for reaching authorities and institutions. In this sense, this thesis involved participating in three open calls to public prizes at local [3], national [4], and international [5] levels. Periods for submitting applications to these three calls overlapped from March to October 2020. Down below, some fundamental aspects of each one of these three contests.

Firstly, at the local level, efforts focused on the "Promotion and Scientific Dissemination Awards of the University of Alcalá" [3], convened by the Rector's delegate for institutional marketing and digital communication. This contest aims to encourage, recognize, and reward the university's members' effort to transmit the results of their scientific research to society [3]. In this way, this thesis targeted the "Special award for the most original and innovative formula to spread science among society". The participation in the UN75 Initiative was the central core of the proposal. The shipping period for submitting applications was from July 1 to October 2, 2020. The jury consisted of five components, encompassing different university authorities, including two academic vice-rectors [3].

Secondly, at the national level, efforts focused on "National Youth Awards for 2020" [4]. The National Institute of Youth, belonging to the Ministry of Social Rights and the 2030 Agenda of the Spanish Government, convened this public contest [4]. This contest aims to encourage and recognize the work done by young people, their effort, involvement, and commitment in different social areas [4]. In this occasion, the presented proposal targeted the Human Rights category, designed to recognize initiatives or actions developed in the field of Human Rights. The period for submitting applications was from August 21 to September 17, 2020. Again, the author's participation in the UN75 Initiative was a significant part of the submitted proposal. Additional efforts consisted of publishing various research and review articles about the DFSA phenomenon [1, 15] and fieldwork directly developed with young people and teenagers in

university and secondary and high school centers. In this case, the jury consisted of five components designated by the General Direction of the National Institute of Youth [4].

Third, at the international level, efforts focused on the SDG Action Awards [5], which depend on the United Nations' SDG Action Campaign. In this call, the targeted category was "Mobilize", which recognizes those actions mobilizing large numbers of individuals and organizations and build coalitions across communities and societies, ideally over the long term, to achieve the SDGs [5]. The shipping period for submitting applications covered from March to October 9, 2020. The sent proposal involved actions developed within the context of an Educational Innovation Project at the University of Alcalá, which mobilized numerous students and professors from several university degrees and secondary and high school centers (experience presented in Chapter 3). It consisted of a joint and transdisciplinary effort to enhance and improve preventive actions against the DFSA phenomenon. The actions included within the submitted proposal were framed under the umbrella of the educational and awareness projects described in this chapter with code references: UAH/EV951, UAH/EV1024, and MSCBS-PNSD-20181032. In this case, the jury included a panel of leaders across the globe [5].

Finally, the proposal at the national level, submitted to the "National Youth Awards" [4], was selected as the winner in the Human Rights category through Resolution 15,662 published by the Ministry of Social Rights and the 2030 Agenda of the Spanish Government [21]. This official recognition allowed expanding the awareness messages about the DFSA phenomenon as an excellent opportunity for targeting other institutions. Figure 33 shows the image used by the National Institute of Youth for publishing the final resolution of the National Youth Awards for 2020 regarding the Human Rights category. The jury's final decision is online available at the National Institute of Youth's web (<http://www.injuve.es/conocenos/noticia/premios-nacionales-de-juventud-2020>). This thesis's Annexe includes the prize's official resolution.



Figure 33. Publication of the final resolution of the National Youth Awards for 2020 regarding the Human Rights category.

INCREASING INSTITUTIONAL AWARENESS FROM MASS MEDIA

Efforts for attracting institutional and social attention on the severity of the DFSA phenomenon also involved dissemination activities performed under the media coverage at the local, regional and national levels, collaborating with radio, television, and written press. Down below, Table 10 enlists interventions performed in mass media in the frame of the educational and awareness projects coded as UAH/EV951, UAH/EV1024, and MSCBS-PNSD-20181032. Table 10 details the journalistic article's title, publication date, and the publishing medium name. Moreover, the references list within this chapter also includes the complete bibliographic sources of media interventions. Other concurrent dissemination efforts include participation in AULA (2019 and 2020 editions), UAH Open Day 2019, Semana de la Ciencia de la Universidad de Alcalá, and the European Researchers' Night (2019 and 2021 editions).

Table 10. Journalistic articles published by media at local, regional, or national levels to increase institutional awareness about the severity of the DFSA phenomenon.

Title	Medium	Date
<i>"Agresiones sexuales oportunistas"</i> [22]	Radio Euskadi: La Mecánica del Caracol	11/03/2020
<i>"Un decálogo sobre abusos sexuales por sumisión química al finalizar la campaña de la UAH"</i> [23]	Universidad de Alcalá. Portal de comunicación: Sala de Prensa	02/27/2019

Table 10. Continuation.

Title	Medium	Date
<i>"La UAH desarrolla un programa de aprendizaje-servicio para concienciar sobre los abusos sexuales mediante sumisión química con más de 600 estudiantes involucrados"</i> [24]	Universidad de Alcalá. Portal de comunicación: Uah.es Noticia	12/19/2018
<i>"Abusos sexuales mediante sumisión química"</i> [25]	Catalunya Vanguardista	12/13/2018
<i>"El programa de aprendizaje-servicio involucra a 600 estudiantes de la UAH para concienciar sobre los abusos sexuales mediante sumisión química"</i> [27]	Universidad de Alcalá. Portal de comunicación: Uah.es Noticia	10/31/2018
<i>"La Universidad de Alcalá, contra los abusos sexuales mediante sumisión química"</i> [28]	Dream! Alcalá	10/30/2018
<i>"Un programa de aprendizaje-servicio involucra a 600 estudiantes de la UAH para concienciar sobre los abusos sexuales mediante sumisión química"</i> [29]	Universidad de Alcalá. Portal de comunicación: Sala de Prensa	10/30/2018
<i>Sin especificar</i> [30]	RTVE	05/01/2018
<i>"Campaña contra la violencia sexual por sumisión química"</i> [31]	Portal Local	12/20/2017
<i>"Alcalá lucha contra la violencia sexual por fármacos o drogas"</i> [32]	Dream! Alcalá	12/20/2017
<i>"Estudiantes de la UAH lanzan una campaña para informar a los jóvenes sobre la sumisión química y cómo prevenirla"</i> [33]	Universidad de Alcalá. Portal de comunicación: Uah.es Noticia	12/19/2017
<i>"Alumnos de la UAH lanzan campaña contra abusos sexuales por sumisión química"</i> [34]	Alcalá Hoy	12/12/2017
<i>"Estudiantes de la UAH ponen en marcha una campaña para informar a los jóvenes sobre la sumisión química y cómo prevenirla"</i> [35]	El Digital Complutense	12/12/2017
<i>"Campaña divulgativa de los alumnos de la Universidad de Alcalá contra la sumisión química"</i> [36]	elDiario.es Castilla-La Mancha	12/11/2017
<i>"Alumnos de la UAH lanzan campaña contra abusos sexuales por sumisión química"</i> [37]	La Vanguardia	12/11/2017
<i>"Estudiantes de la UAH informan a los jóvenes sobre la sumisión química y cómo prevenirla"</i> [38]	yaq.es	12/11/2017
<i>"Alumnos de la UAH lanzan campaña contra abusos sexuales por sumisión química"</i> [39]	ABC.es	12/11/2017
<i>"Estudiantes de la UAH ponen en marcha una campaña para informar a los jóvenes sobre la sumisión química"</i> [40]	Portal Local	12/11/2017
<i>"Diversión sin preocupación. Sumisión química. ¿Mito o realidad?"</i> [41]	Dream! Alcalá	12/06/2017

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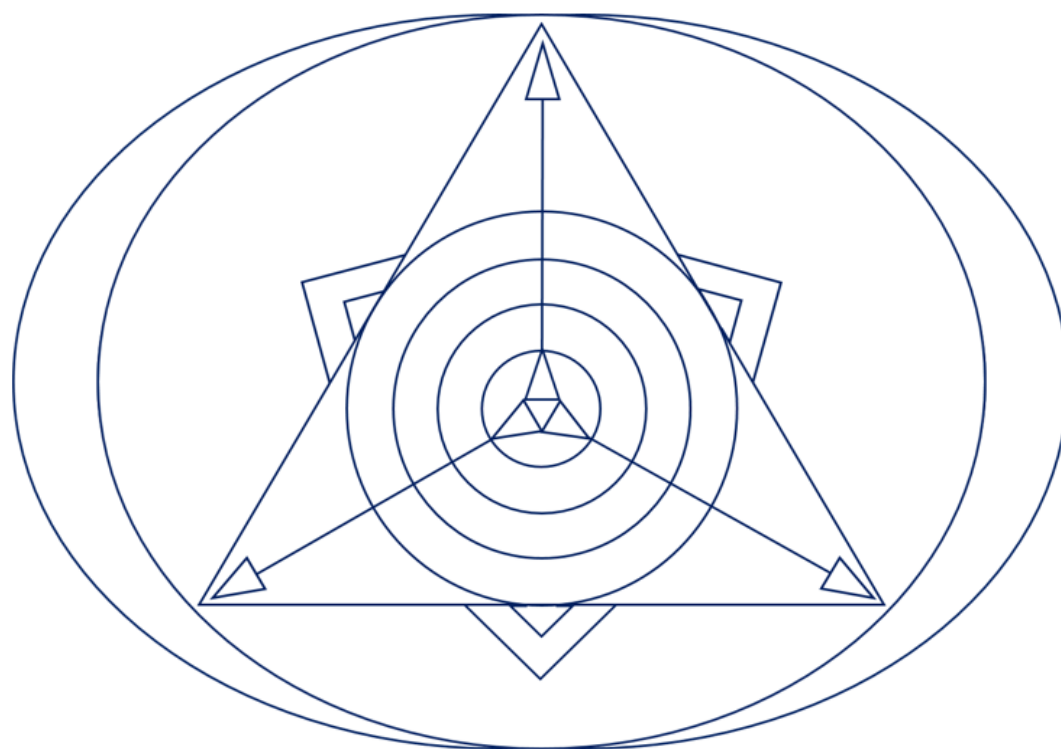
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CHAPTER 5

Leave No One Behind. Victimization by DFSA.



5.1. An approximation to the identification of contexts, experiences and profiles of victimization by DFSA.

Prego-Meleiro P, Montalvo G, García-Ruiz C, Bravo Serrano B, Ayuso-Tejedor S, Megía Morales C, Quintela-Jorge O. An approximation to the identification of contexts, experiences and profiles of victimization by DFSA. In publication process.

ABSTRACT

This study approach, for the first time, the current significant bias affecting the research of victimization by DFSA: a narrow focus of study, limited to the leisure contexts involving nightlife, party culture, and dating. For that purpose, a new working ecological framework recently proposed to improve the understanding of the victimization by DFSA was applied to the analysis of data from institutional sources. This innovative methodology allowed an efficient approach to know other contexts and profiles of victimization beyond the assaults suffered by young women in leisure settings. As such, working both at the microsystem and individual levels, various profiles and experiences of victimization have been described in diverse contexts, such as domestic cohabitation, labor, education, healthcare, women trafficking, and the daily life of people with intellectual disabilities. Therefore, this study confirms the applicability of the new ecological working framework as a guide for understanding the DFSA phenomenon, which contributes substantially to “leave no one behind” in the study and the prevention of violence, such as the 2030 Agenda for Sustainable Development pursues.

INTRODUCTION

Violence especially affects the most vulnerable people [1]. DFSA is a representative example of this uncomfortable truth since the victims of this form of sexual violence suffer assaults when experience the temporary disability derived from the use or abuse of psychoactive substances, the specific vulnerability factor defining DFSA. Assailants approach victims who are unable to consent due to the disability produced by the effects of psychoactive substances, used either voluntarily or involuntarily [1,2]. Regarding profiles and contexts of victimization by DFSA, most of the studies over the past three decades have focused on the assaults suffered by young women in leisure contexts involving nightlife, party culture and dating [3-11]. Probably, this situation results from the significant impact of DFSA in such settings, highlighted through media coverage [12-16]. DFSA is a phenomenon of intersectional nature, in which sexual violence against women and the misuse of psychoactive substances intersect [17]. These two intersecting dimensions easily find each other in leisure contexts shaped under the hegemonic recreational nightlife model, the typical leisure pattern in European societies [18]. However, DFSA is not only limited to recreational nightlife contexts, so there is a significant lack of studies concerning DFSA in other settings, as well as the affectation of different profiles [17]. Thus, further research is necessary focussing on other profiles and contexts in which vulnerabilities converge, thereby generating particularly unjust situations [17]. Other authors have pay also attention to the need to focus on the contextual information of alleged DFSA cases as a critical aspect to provide

further insight into the issue and to prevent it [13]. This need fits the global challenge of “leave no one behind”, pursued by the Agenda 2030 for Sustainable Development [19]. In this line, to leave no one behind during the research of DFSA as a specific form of sexual violence, it is necessary to study all the contexts and profiles of victimization. Moreover, this need is especially consistent with the target 5.2 of the Agenda, focusing on the elimination of all forms of violence against women and girls. Many studies about DFSA have focussed on data from institutional sources, such as sexual assault treatment centers [15,20-25] and judicial authorities [26-35]. The proper study of administrative data generated during interaction with victims is useful to get improved knowledge about casuistry [36]. However, this requires the implementation of adequate study tools. In this sense, a new ecological working framework has been recently developed for the in-depth understanding of victimization by DFSA [17]. This framework operates on multiple levels as a multidimensional structural frame, and allows the disaggregated study of the numerous factors involved in the victimization process in a tidy manner, through their classification into four levels of influence: individual, microsystem, exosystem and macrosystem (Fig. 34) [17].

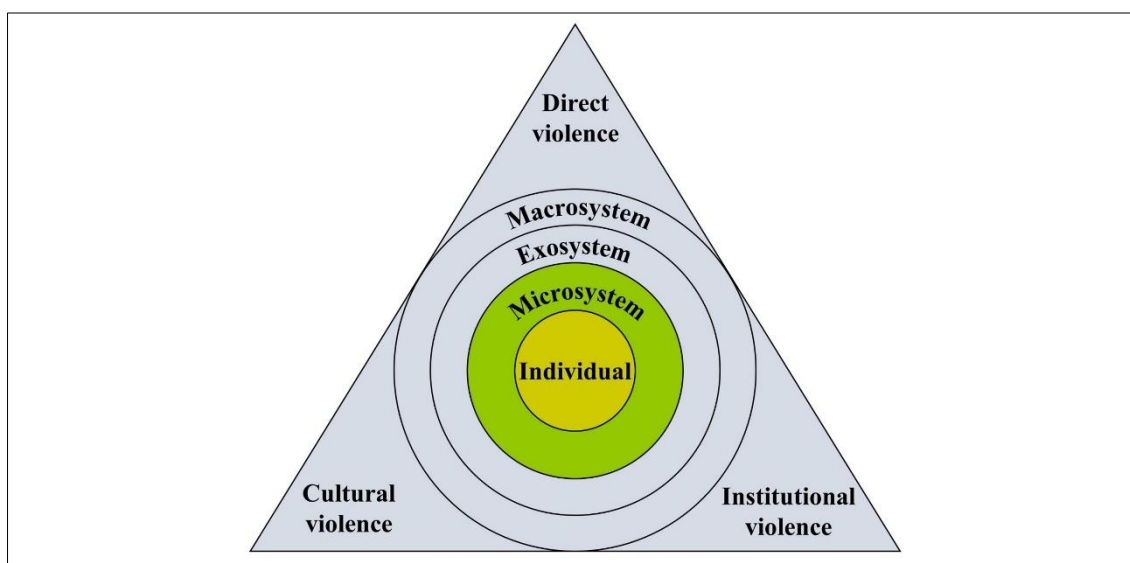


Figure 34. Ecological working framework recently proposed for understanding and preventing the victimization by DFSA [17]. The framework comprises four influences levels [the concentric circles, from the individual to the macrosystem levels] and three violence levels [at the vertices of the triangle].

The microsystem level encompasses the contextual or situational characteristics in which personal interactions happen [37], whereas the factors for studying profiles of victimization are classified at the individual level [17]. Furthermore, a proper search of other contexts and profiles of victimization must be adjusted to the reality of the phenomenon. As such, victims face several

circumstances that difficult the report of assault to authorities, such as amnesia, the lack of injuries, and the prevalence of various myths involving DFSA [38]. The delay in reporting the assault to authorities is a feature usually affecting the alleged DFSA cases [26,34,39,40]. Often the time elapsed between the moment of the alleged assault and the collection of biological samples for toxicological analyses is much too long, leading to a loss of usefulness of the most usual matrices like blood and urine. Consequently, hair samples are collected for analyses due to its longer detection window. In this sense, cases with requests for victim's hair analysis have two significant advantages as a study sample for identifying other contexts and profiles of victimization by DFSA. On the one hand, difficulties faced by victims to report are supposed to be higher for those profiles in which several vulnerabilities factors converge, thereby generating particularly unjust situations. Victims with more vulnerabilities face more difficulties to access to justice. In these cases, hair samples become particularly useful, because of the probable long periods elapsed between the alleged assaults and the complaints. On the second hand, victims in which several vulnerability factors converge are at higher risk of suffering repeated episodes of DFSA, especially children and people with physical or intellectual disabilities. During the prosecution of DFSA, the potential of hair samples as useful pieces of evidence increases in cases involving repeated assaults because of the higher likelihood of obtaining positive analytical results when victims have repeatedly consumed the analyzed substance. Therefore, this paper aims to further insight into the study of contexts and profiles of victimization by DFSA, paying particular attention to identify other profiles and settings different to those assaults suffered by young women in leisure contexts. Such purpose is consistent with the current global challenge of leaving no one behind in the fight against all forms of violence affecting women and girls [18]. For that purpose, the new study tool was applied for the first time to the analysis of data from institutional sources at the individual and microsystem levels.

MATERIALS AND METHODS

A new ecological working framework recently designed to improve the understanding of victimization by DFSA [17] was applied as a study tool to the qualitative analysis of a sample of alleged DFSA cases reported to the Spanish judicial authorities from January 1th 2012 to December 31th 2017. Concretely, those involving requests for analyses of victim's hair samples to the Madrid Department of the INTCF. Cases with requests for victims' hair analysis are proper for studying other contexts and profiles of victimization by DFSA, beyond the assaults suffered by young women in leisure settings. In this sense, the delay in reporting the assault to authorities is an aspect usually affecting the alleged DFSA cases, which is supposed to be higher for those profiles and contexts in which several vulnerabilities factors converge. For instance, when

victims live with their assailants, or when they are elderly persons, very young people or have a poor state of health. Hair samples become particularly useful in these cases because of the probable long periods elapsed between the alleged assaults and the complaints. Moreover, the convergence of several vulnerability factors in victims increases their risk for suffering repeated assaults, which potentiates the usefulness of hair samples as evidence during the prosecution of DFSA, due to the higher likelihood of obtaining positive analytical results. Furthermore, the ethics committee of the University of Alcalá approved the projects framing this study.

This study was developed at the INTCF, which centralized most of the requests for forensic analysis of hair samples nationally during the five-year study period. To avoid losing study cases, the sampling procedure focussed on all the judicial requests for the toxicological analyses of alleged victim's hair samples sent to the INTCF related to the investigation of complaints about crimes against sexual freedom. Once received at the center, a specific ID code was automatically assigned to each case within the Laboratory Information Management System [LIMS]. Such codes were used to attach all the related documentation and new reports generated during toxicological investigations. In turn, the casuistry related to crimes against sexual freedom was classified within a specific category named as sexual assault. In this way, the sampling procedure involved access to the LIMS and selecting cases with a judicial request for the toxicological analysis of alleged victims' hair samples received during the study period and classified as sexual assault. The documentation available for the group of selected alleged DFSA cases was reviewed in detail. Such documents included reports issued by coroners and other medical practitioners, police and forensic toxicologists. They contained data about the alleged assaults, including victim's statements, observations of professionals attending them, as well as results from toxicological analyses of available biological matrices. In this way, the original sample consisted of 85 alleged DFSA cases. However, the final study sample comprised 52 of them, only those for which available data included the elements necessary for a proper study of the context of victimization at a microsystem level. As such, cases whose documentation included data involving situational characteristics, as well as the temporal and spatial locations of the alleged assaults.

Once selected the final study sample, the methodology involved three other work phases, developed at both the microsystem level and the individual level of the structural frame used as a study tool [17]. Firstly, working at the microsystem level, the contexts of victimization were identified from available data. For that purpose, the situational characteristics in which alleged assaults happened were studied, including the social interrelation dynamics between victims and assailants around the moment of the assault, and the temporal and spatial location.

Secondly, once cases were classified in the identified contexts, remaining data from each case were studied through an analysis disaggregated by the interactive factors included at the microsystem level and the factors corresponding to the individual level. Thirdly, after the disaggregated analysis of available data, the profiles and experiences of victimization by DFSA were identified. For that purpose, we used only the cases classified for which data were known for all the study factors included at the levels microsystem and individual. In such cases, previously disaggregated data were articulated to configure experiences and profiles of victimization. Figure 35 shows the flow chart and phases of the study process.

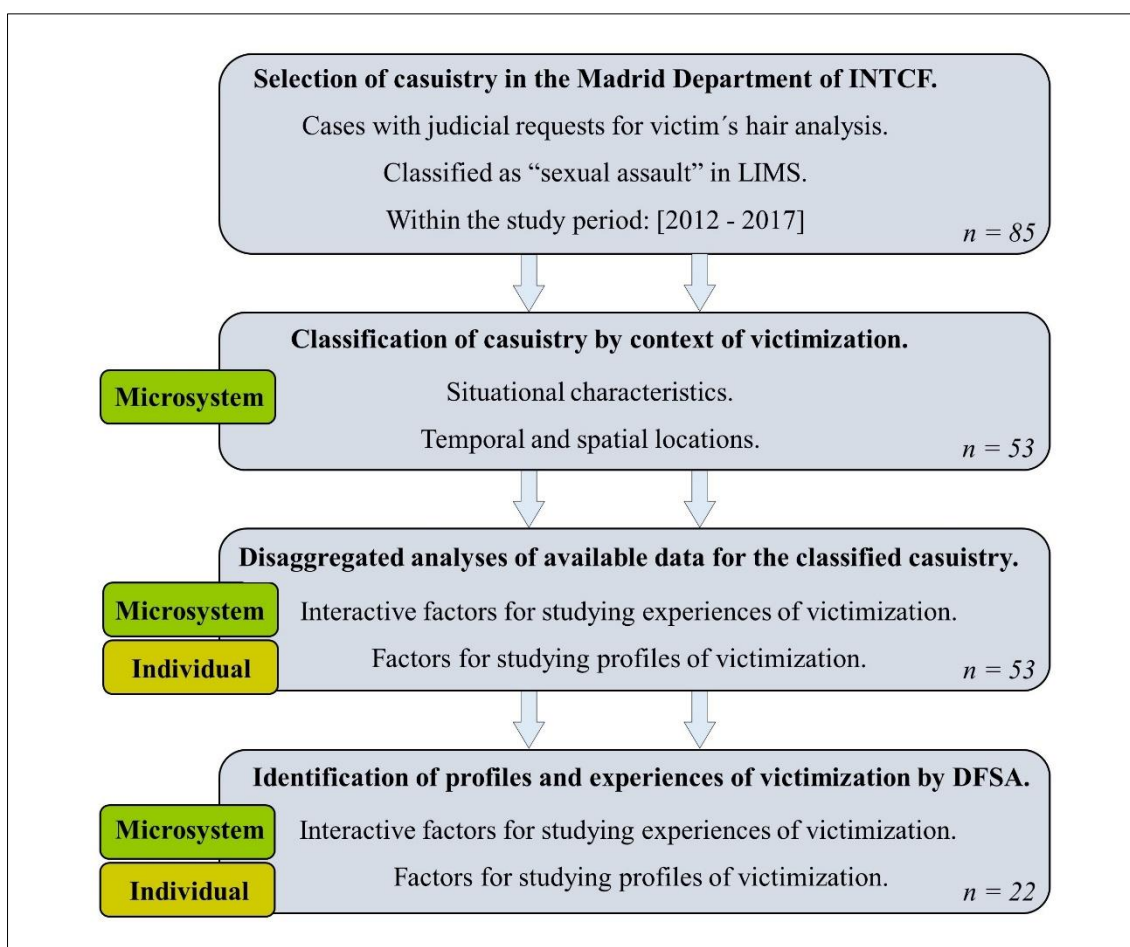


Figure 35. Flowchart of the different phases of the study process and the affected levels.

RESULTS

1. Application of a new ecological framework to DFSA casuistry.

Selected casuistry was in-depth studied using as a guide the new multi-level framework proposed for understanding the DFSA phenomenon [17]. As such, obtained results from fifty-three cases are structured in three sections. The first section focuses on the microsystem level. Firstly, victimization contexts are identified. Then, victimization experiences within each

context are studied by disaggregating data by the corresponding microsystem level’s study factors. In turn, the second section focuses on the individual level. Data are disaggregated by study factors at the individual level necessary for investigating victimization profiles. Finally, after the disaggregation phase, the third section identifies victimization experiences and profiles. For that purpose, we use only cases with data available for all the study factors from both the microsystem and the individual levels. Table 11 shows all the study factors at both the microsystem and individual level necessary for investigating contexts, experiences, and profiles of victimization by DFSA.

Table 11. Factors included at the microsystem and individual levels of ecological influence for studying contexts, experiences, and victimization profiles.

Microsystem level		
Study of contexts of victimization		Study of experiences of victimization
Situational characteristics	<i>Modus operandi</i> Involved substances	
Spatial location	Specific violations to sexual freedom	
Temporal location	Assailant data	Frequency of assaults
	Victims number	Relationship assailant-victim
Individual level		
Study of profiles of victimization		
Victim gender	Victim age	Geographical origin of victim
Other factors increasing vulnerability to violence:		
Physical or mental diseases	Belonging to minority or risky groups	
Intellectual disability	Chronic use of legal or illegal substances	

1.2. Microsystem level.

i. Study of contexts of victimization by DFSA.

Alleged DFSA cases were classified into three groups based on the context in which the assault happened. The first group corresponds to victimization in leisure nightlife contexts, observed for most cases. Secondly, the victimization in contexts of domestic cohabitation. The third group encompasses other varied contexts for which a lower number of cases were identified. This group includes labor, education, healthcare, women trafficking for forced prostitution, and the daily life of people with intellectual disabilities. The classification by context was based on the available data about the contextual features and human interrelationships in which the alleged assaults were framed. This involved studying dynamics of social interaction between

victims and assailants around the moment of the alleged assaults and the facts' temporary and spatial location.

As a result, in 56 % of studied cases, alleged assaults corresponded to the leisure nightlife context. Around the moment of the assault, cases classified in this context involved situational characteristics fitting social dynamics of the hegemonic recreational nightlife model. Especially, leisure activities combined with alcohol use. Binge drinking and the culture of self-intoxication are prevalent leisure patterns in European societies [18]. Regarding the alleged assaults' spatial location, attention was paid to events occurring in places related to leisure activities combining personal interrelation and drinking alcohol, such as pubs, bars, or nightclubs. In turn, the study of the temporary location considered events during the night or early morning and at the weekend. Table 12 shows observed results based on the factors analyzed within the microsystem level, used to classify the casuistry in the contexts of victimization identified. It includes situational characteristics and temporal and spatial locations.

Table 12. Factors analyzed at the microsystem level to classify the studied casuistry by contexts of victimization.

Microsystem level			
Identified context	Situational characteristics	Spatial location	Temporal location
Nightlife leisure (n= 30; 56%)	Dynamics of leisure and drinking alcohol consistent with the hegemonic recreational model.	Spaces linked to the nightlife leisure ¹ .	At night or early morning. At the weekend.
Domestic cohabitation (n= 16; 30%)	Child care by caregiver adults. Cohabitation of couples. Children kidnapping.	Victim and assailant cohabitation's domicile.	Nonspecific. Kidnapping period.
Labor (n= 2; 4%)	The victim's working day.	The victim's workplace.	Nonspecific.
Education (n= 2; 4%)	<i>n.d.</i>	Educational institutions.	Nonspecific.
Healthcare (n= 1; 2%)	Health counseling sessions to victim.	Clinic for health counseling.	Nonspecific.
Women trafficking (n= 1; 2%)	Women kidnapping and trafficking for forced prostitution.	House of prostitution.	Kidnapping period.
The daily life of people with ID (n= 1; 2%)	Community life.	Public space.	<i>n.d.</i>

¹bar, pub, nightclub. *ID*, intellectual disability. *n.d.*, no data. *n*, number of cases.

The alleged assaults were classified as happening in contexts of domestic cohabitation in sixteen cases [30 %]. The situational characteristics that allowed the classification in this group encompassed three different situations (Table 12): the cohabitation of people underage with caregiver adults; situations of couple cohabitation; and minors kidnapping resulting in forced cohabitation. In this group, the spatial location involved events allegedly happened in the

domicile where the victim and assailant cohabited. Regarding temporary location, available data were too variable, not showing such a clear trend as victimization in leisure nightlife context.

On the other hand, 14 % of cases corresponded to other contexts of victimization by DFSA, including labor, education, healthcare, women trafficking for forced prostitution, and the daily life of people with intellectual disability. Table 12 details these results, based on the factors analyzed within the microsystem level. Two alleged assaults during the victim's working day and located in their workplace were classified within a labor context. Two other assaults allegedly occurred in education institutions were classified within an educational context. In turn, another case that happened during sessions of health counselling was classified in a healthcare context. Another case involving the kidnapping and forced prostitution of the victim, allegedly happened in a house of prostitution was classified within a context of women trafficking for forced prostitution. Finally, the assault suffered by a person with intellectual disability during a situation of community life and located in the public space was classified within the context of the daily life of people with intellectual disabilities.

ii. Study of experiences of victimization by DFSA.

For studying victimization experiences, available data for cases classified by context were disaggregated based on interactive factors included at the microsystem level. In this sense, in addition to situational characteristics and temporal and spatial locations, factors previously studied to identify victimization contexts, the microsystem level also comprises human interrelationships that happen in these contexts, including violent or criminogenic interactions. Therefore, all available data about interaction were analyzed, especially the *modus operandi* used by the assailant. In this sense, DFSA involves two types of assaults according to the *modus operandi*: opportunistic and proactive. Opportunism involves assaults after the voluntary use of substances by victims, whereas involuntary intake happens in proactive assaults, in which assailants covertly or forcibly administer substances to victims [2]. Covert use refers to the surreptitious administration, whereas forced administration refers to involuntary consumption by coercion, threats or the use of physical force [17]. In turn, a third mixed option involves the combination of opportunism and proactivity. Other factors related to criminogenic interaction included the psychoactive substances allegedly involved in assaults, the specific violations to victim's sexual freedom, and assaults frequency. Moreover, other interactive factors analyzed also included the assailant's sex and age, the number of assailants, and the previous relationship between assailants and victims.

An adequate investigation of the assailants’ modus operandi in alleged DFSA cases needs to know the voluntary or involuntary use of psychoactive substances by victims around the moment of the assault. Among assaults classified in the leisure nightlife context, voluntary use was observed in twenty instances, while victims of eleven cases reported some suspicion of unintentional consumption through covert administration. Drug use was exclusively involuntary only in two cases. In this way, as shown in Table 13, alleged DFSA cases that occurred in the leisure nightlife context involved the three types of modus operandi: opportunistic, proactive, and mixed (opportunism and proactivity).

Table 13. Data from alleged DFSA cases classified in the leisure nightlife context disaggregated by the microsystem level’s interactive factors. The colored bars’ length shows the number of cases.

Context		Nightlife leisure (n= 30; 56%)						
Microsystem level	Modus operandi	Opportunism (n= 13; 43%)		Opportunism + Covert proactivity (n= 9; 30%)		n.d. (n= 6; 20%) CP (n= 2; 7%)		
	Involved substances	Alcohol only (n= 11; 37%)		n.d. (n= 6; 20%)		Un. Sub. (n= 4; 13%) Alcohol + Un. Sub. (n= 5; 17%) *1 *2 *3		
	†Specific events	n.d. (n= 27; 90%)				Va. Pen. (n= 3; 10%) *4 *5		
	Assailant data	One male assailant (n= 14; 47%)		n.d. (n= 11; 37%)		Various male assailants (n= 5; 17%)		
	Frequency of assaults	One isolated assault (n= 20; 67%)			n.d. (n= 10; 33%)			
	Victims number	One victim (n= 28; 93%)				Various (n= 2; 7%)		
	†Relationship assailant-victim	n.d. (n= 17; 57%)			New ac. (n= 6; 20%)		Friend (n= 5; 17%) Strange (n= 3; 10%)	

*1Alcohol + illegal drugs (n= 2; 7 %); *2Alcohol + pharmaceuticals (n= 1; 3 %); *3Illegal drugs + Unknown substances (n= 1; 3 %); *4Anal penetration (n= 1; 3 %), *5Oral penetration (n= 1; 3 %); †The total sum exceeds thirty because of the overlapping of categories in different cases; *n.d.*, no data; *CP*, covert proactivity; *Un. Sub.*, unknown substance; *Va. Pen.*, vaginal penetration; *New ac.*, new acquaintance; *n*, number of cases.

On the other hand, psychoactive substances allegedly involved in assaults included alcohol, both alone and in combination with pharmaceuticals and illegal drugs, and other unspecified substances. In this sense, alcohol was involved in twenty cases, while it was the only one observed substance in eleven of them. The term “unknown substance” refers to those cases in which victims testified voluntary or involuntary use of some unidentified substance neither detected by toxicological analysis. Regarding the specific violations to victim’s sexual freedom, data was only available in three cases. These assaults consisted of non-consensual acts of vaginal, anal, and oral penetration. Alleged assaults were isolated or not repeated in the twenty cases with available data about the attack frequency. Fourteen cases involved only one male assailant, but in five cases participated two or more. Only in four cases, data about assailants’ age was available, who were young men. Regarding cases with more than one victim, two cases

were observed affecting two victims. Likewise, in eleven cases, assailants and victims knew each other before the assault as friends or new acquaintances. However, assailants were stranger in three cases.

Table 14 shows the disaggregated analysis by microsystem level's factors of data from DFSA cases that happened in contexts of domestic cohabitation. Data about the voluntary or involuntary drug use by victims around the moment of the assault were available in thirteen cases. For all of them, the assailant's modus operandi fitted a proactive strategy. As such, all victims reported involuntary consumption of some substance, with no cases of voluntary use. This involuntary use happened through covert administration in the five cases involving couple life situations and two cases involving the cohabitation of people underage with caregiver adults. In turn, involuntary consumption involved forced administration in four cases of minors living caregiver adults and in the incident involving the kidnapping of children.

Table 14. Data from alleged DFSA cases classified in the domestic cohabitation context disaggregated by the microsystem level's interactive factors. The colored bars' length shows the number of cases.

		Domestic cohabitation (n= 16; 30%)											
Microsystem level	Context	Domestic cohabitation (n= 16; 30%)											
	Situation	Child care (n= 10; 63%)					Couple life (n= 5; 31%)			Kid. (n= 1; 6%)			
	Modus operandi	n.d. (n= 4; 25%)		Forced proactivity (n= 4; 25%)		CP (n= 2; 13%)		Covert proactivity (n= 5; 31%)			Forced proactivity		
	Involved substances	BZDs / BZDs analogues (n= 4; 25%)		(n= 2; 13%)		(n= 2; 13%)		*1 *2		Unknown substances (n= 3; 19%)	BZDs (n= 2; 13%)	Alcohol + Ab. D. + Un.	
	†Specific events	n.d. (n= 5; 31%)		Va. Pen. (n= 3; 19%)	An. Pen. (n= 3; 19%)	*3	*4	*5	*6	n.d. (n= 3; 19%)		Va. Pcn. (n= 2; 13%)	Vaginal penetration
	Assailant data	One male assailant (n= 9; 56%)			n.d. (n= 1; 6%)			One male assailant (n= 5; 31%)			One male assailant		
	Frequency of assaults	Repeated assaults (n= 7; 44%)			Iso. As. (n= 2; 13%)		n.d. (n= 1; 6%)		Rep. As. (n= 2; 13%)	Iso. As. (n= 2; 13%)	n.d. (1)		Repeated assaults
	Victims number	One victim (n= 1; 6%)				Various (2)		One victim (n= 5; 31%)			One victim		
	Relationship assailant-victim	Father or mother's partner (n= 6; 38%)		An. Rel. (n= 2; 13%)	n.d. (n= 1; 6%)		*7		Couple (n= 5; 31%)			Kidnapper	

*1Another pharmaceuticals-lidocaine (n= 1; 6 %); *2Illegal drugs-cocaine (n= 1; 6 %); *3Fondling (n= 2; 13 %); *4Showing porn to minors (n= 1; 6 %); *5Video recording (n= 1; 6 %); *6Fellatio (n= 1; 6 %); *7No-relative known person (n= 1; 6 %); †The total sum exceeds sixteen because of the overlapping of categories in different cases; Kid.: kidnapping; CP: covert proactivity; Ant.: antihistamines; Va. Pen.: vaginal penetration; An. Pen.: anal penetration; Iso. As.: isolated assault; Rep. As.: repeated assaults; n.d.: no data; Ab. D.: abuse drugs; Un. Sub.: unknown substances; BZDs: benzodiazepines; An. Rel.: another relative; n, number of cases.

Regarding allegedly involved substances, data were available for eleven cases, which mainly included pharmaceuticals. As such, benzodiazepines (BZDs) or analogues were involved in two cases of couple living and four cases involving the cohabitation of people underage with caregiver adults. Diphenhydramine was involved in two assaults affecting minors. Moreover, in

this group, two other assaults were related to lidocaine and cocaine, respectively. In turn, substances involved in minors' kidnapping included alcohol, cannabis, and other unknown drugs. On the other hand, studying specific events, data about violations of victims' sexual freedom were available in eight cases, consisting of non-consensual acts of vaginal and anal penetration, fellatio, showing porn to minors, and video recording of victims. Likewise, data about assaults frequency were available in fourteen cases, involving ten repeated and four isolated assaults. In this sense, repeated assaults prevailed among cases involving the cohabitation of people underage with caregiver adults. As such, seven minors allegedly suffered repeated assaults while two other experienced isolated assaults. The victim of kidnapping also suffered repeated assaults. In turn, victimization during couple cohabitation involved two cases of repeated assaults and two isolated assaults. Likewise, the assailant was a man in the fifteen cases where data about assailants were available. Regarding the number of victims, one case of cohabitation between minors and caregiver adults affected two victims, while the remaining domestic cohabitation cases involved only one victim. Data about the previous relationship between assailants and victims were available in fifteen cases. All assailants were people previously known by victims. In this sense, assailants were victims' relatives in all cases located during the cohabitation of people underage with caregiver adults. Victims' fathers, stepfathers, and victim's mothers' couples prevailed as assailant figures in this situation. In turn, regarding attacks that happened during couple life, assailants were the victims' couples. Likewise, the kidnapper perpetrated the assaults in the case involving minors kidnapping.

Table 15 shows the disaggregated analysis by microsystem level's factors of data from DFSA cases that happened in other contexts, including labor, education, healthcare, women trafficking for forced prostitution, and the daily life of people with intellectual disability. The use of psychoactive substances by the victims around the moment of the alleged assaults was involuntary in six of the seven cases classified in these other contexts, corresponding to a proactive *modus operandi* by assailants. Cases related to healthcare contexts and the daily life of people with intellectual disabilities involved the covert administration of substances to victims. In turn, one case in the labor context involved a mixed *modus operandi*, combining covert administration and voluntary consumption. However, data about covert or forced administration were not available for the remaining cases. Regarding allegedly involved substances, data were available in three cases. In the labor context, these included benzodiazepines (BZDs), brompheniramine, and alcohol, as well as cocaine in the forced prostitution context.

Table 15. Data from alleged DFSA cases classified in other contexts disaggregated by the microsystem level’s interactive factors. Other contexts include labor, education, healthcare, women trafficking for forced prostitution, and daily life of people with intellectual disability.

The colored bars’ length shows the number of cases.

Context	Educative (n= 2; 4%)		Laboral (n= 2; 4%)		Healthcare (n= 1; 2%)	Women tra. (n= 1; 2%)	Daily life of P. with ID (n= 1; 2%)
<i>Modus operandi</i>	Proactivity (n= 2; 4%)		Opp. + covert pro.	Covert proactivity	Covert proactivity	Proactivity	Covert proactivity
Involved substances	n.d. (n= 2; 4%)		Alcohol + antihist.	BZDs	Unknown substances	Cocaine + unknown substances	Unknown substances
Specific events	n.d. (n= 2; 4%)		Vaginal penetration	n.d.	Fondling + bestiality	Forced prostitution	n.d.
Assailant data	One male assailant	n.d.	One male assailant	n.d.	One male assailant	n.d.	n.d.
Frequency of assaults	n.d. (n= 2; 4%)		Isolated assault	Repeated assaults	Repeated assaults	Repeated assaults	Isolated assault
Victims number	One victim (n= 2; 4%)		One victim (n= 2; 4%)		One victim	One victim	One victim
Relationship assailant-victim	n.d. (n= 2; 4%)		Boss	n.d.	Health care provider	n.d.	n.d.

ID: intellectual disability; n.d.: no data; *Women tra.*: women trafficking; *Daily life of P. with ID*: daily life of people with intellectual disabilities; *Opp.*: opportunism; *n*, number of cases.

Concerning specific events or violations to the victims’ sexual freedom, according to available data, in one case involving the labor context, the victim suffered non-consensual vaginal penetration. In turn, the victim suffered from non-consensual fondling and bestiality in the case involving the healthcare setting. In the case contextualized in women trafficking, the victim was forced into prostitution. Victims suffered from repeated assaults in those cases classified within healthcare, forced prostitution, and labor contexts. In the three cases where data were available, only one male assailant perpetrated the alleged assaults. All cases of alleged assaults classified in these contexts involved only one victim. Data about the previous relationship between assailants and victims were only available in two cases. A co-worker assaulted one of the victims in the labor context, while in the healthcare setting, the assault was perpetrated by the victim’s health care provider.

1.3. Individual level.

Available data for cases classified by victimization context were disaggregated based on study factors included at the ecological working framework's individual level. As such, attention focused on gender, age, and the geographical origin of victims. Data about other factors increasing vulnerability to violence were also studied when available, including physical or mental diseases, intellectual disability, belonging to a minority or risky group, and the chronic use or abuse of legal or illegal psychoactive substances.

As shown in Table 16, all victims in leisure nightlife contexts were women except in one case. Victims' age ranged from 15 to 43. Most of them, concretely twenty-four, were 35 years old or younger, with an average of 26 years old. In turn, victims aged less than 18 in five cases. Likewise, five victims ranged from 37 to 43 years old. Data about the victims' geographical origin were known in twenty-two cases, with fifteen Spanish victims and seven foreign, mainly from Latin American countries. On the other hand, victims suffered from some disease or mental disability in five cases. Anxiety was the most frequent issue, often treated with anxiolytics. Other observed illnesses included depression, bipolar disorder, and chronic abuse of alcohol and other drugs. Finally, data about victims' belonging to minorities or risky groups were very scarce. However, it was noted that the unique case of male victimization by DFSA in leisure nightlife affected a gay man. Furthermore, four cases pointed out that the victims were students, a condition frequently related to victimization by DFSA [11,41].

Table 16. Data from alleged DFSA cases classified in the leisure nightlife context disaggregated by factors included at the individual level. The colored bars' length shows the number of cases.

Context		Nightlife leisure (n= 30; 58%)		
Individual level	Victim gender	Female (n= 29; 97%)		Male (n=1; 3%)
	Victim age	[26 - 36] (n= 13; 43%)	[15 - 25] (n= 11; 37%)	[37 - 45] (n= 5; 17%) <i>n.d.</i> (n=1)
	Victim origin	Spanish (n= 15; 50%)	<i>n.d.</i> (n= 8; 27%)	Foreign (n= 7; 23%)

n.d., no data.

Regarding the voluntary use of psychoactive substances by victims around the moment of the assault, alcohol was the most common. Victims reported voluntary alcohol consumption in twenty cases, of which eighteen pointed out a high intake. Statements about the voluntary use of other abuse drugs different from alcohol around the moment of the alleged assault were less frequent: cannabis was reported in two cases and cocaine in one. Likewise, according to data from medical history, victims of four cases were regular users of psychoactive pharmaceuticals and frequent users of abuse drugs in two cases. On the other hand, results from toxicological analyses were another relevant source of data about the consumption habits of psychoactive substances by victims. In this sense, hair analyses were carried out in twenty-nine cases, of which nine provided positive results. These analyses shown the regular use of psychoactive pharmaceuticals by victims in six cases. Hair analyses pointed the frequent consumption of illegal abuse drugs in five cases. Concretely, Detected pharmaceuticals included the antidepressants citalopram and trazodone; the anxiolytic diazepam and the benzodiazepine analogous zolpidem; and the antihistamines cetirizine, brompheniramine, and

chlorpheniramine. In turn, detected abuse drugs included cocaine, MDMA and methadone. In addition to hair, blood samples were also analyzed in thirteen cases, of which seven reported positive results. Psychoactives detected in blood samples included pharmaceuticals such as brompheniramine and abuse drugs like alcohol, cannabis, and cocaine. Similarly, urine was analyzed in twelve cases, of which six reported positive results. Substances detected in urine included antihistamines and alcohol.

Most victims in contexts of domestic cohabitation were women (Table 17). Concretely, the five assaults involving couple cohabitation, seven cases of cohabitation of people underage with caregiver adults, and the case involving the kidnapping of minors. Male victims were observed in three cases involving the cohabitation of people underage with caregiver adults. Concerning age, victims allegedly assaulted by their couples ranged between 33 to 40 years old in three cases, while two cases affected younger victims. In turn, victims of assaults during cohabitation of people underage with caregiver adults were children ranged between 2 to 8 years old in four cases, and teenagers from 13 to 15 in six cases. Similarly, the case of kidnapping affected to a teenager also aged from 13 to 15. Data about the victims’ geographical origin were available in twelve cases. Between victims assaulted by their couple, three were Spanish and two foreign. In turn, all minors assaulted during cohabitation with adults were Spanish, while in the kidnapping case, the victim was foreign.

Table 17. Data from alleged DFSA cases classified in domestic cohabitation contexts disaggregated by factors included at the individual level. The colored bars’ length shows the number of cases.

Context		Domestic cohabitation (n= 16; 31%)					
		Child care (n= 10; 63%)			Couple life (n= 5; 31%)		Kid. (n= 1; 6%)
Individual level	Victim gender	Female (n= 7; 70%)			Male (n= 3; 30%)		Female
	Victim age	[13 - 15] (n= 5; 50%)	[2 - 8] (n= 4; 40%)	n.d. (n= 1)	[33 - 40] (n= 3; 60%)	[16 - 25] (n= 2; 40%)	[13 - 15]
	Victim origin	Spanish (n= 6; 60%)			n.d. (n= 4; 40%)		Spanish (n= 3; 60%) Foreign (n= 2; 40%)

n.d., no data.

Concerning the use of psychoactive substances by victims, toxicological analyses provided interesting results. Analyses of hair samples from seventeen victims reported eight cases with positive results. As such, in five cases of repeated assaults suffered by minors during cohabitation with adults, hair analyses showed the regular use of pharmaceuticals or abuse drugs by victims during the period when assaults allegedly happened. The antihistamine diphenhydramine was detected in two cases, while in three cases substances detected included

zolpidem, cocaine, and lidocaine, respectively. Likewise, in two cases of assaults during couple cohabitation, hair analyses showed the regular consumption of psychoactive pharmaceuticals by victims during the period of the alleged assaults. Substances detected in hair were chlorpheniramine, in one case, and zolpidem and citalopram in another. In turn, in the case involving minors kidnapping, hair analyses showed the repeated use of metoclopramide during the time of the alleged assaults. Concerning blood analyses, only one case involving assaults during couple cohabitation reported a positive result, detecting the benzodiazepine lorazepam. Similarly, urine analyses also reported positive results for benzodiazepines in five cases, involving both assaults during cohabitation of minors and adults, and cases of couple cohabitation.

As shown in Table 18, all the victims of cases classified in these other contexts were women. Regarding age, within the educational context, victims were teenagers around 15 years old. A more significant age variation was observed in the labor context. In one case in which the victim’s job was related to leisure nightlife, the victim was 19 years old, while the victim aged 44 in the second case involving domestic service. However, in the cases classified in contexts of healthcare, forced prostitution, and the daily life of people with intellectual disability, a similar age was observed ranging from 40 to 44 years old. Victims of these three contexts also shared the characteristic of suffering from health problems involving chronic alcoholism, personality disorder, being on treatment with anxiolytics, or intellectual disability.

Table 18. Data from alleged DFSA cases classified in other contexts disaggregated by factors included at the individual level. Other contexts include labor, education, healthcare, women trafficking for forced prostitution, and daily life of people with intellectual disability. The colored bars’ length shows the number of cases.

		Context	Educative (n= 2; 4%)	Laboral (n= 2; 4%)	Healthcare (n= 1; 2%)	Women tra. (n= 1; 2%)	Daily life of P. with ID (n= 1; 2%)				
Individual level	Victim gender	Female	(n= 2; 100%)	Female	(n= 2; 100%)	Female	(n= 1; 100%)	Female	(n= 1; 100%)	Female	(n= 1; 100%)
	Victim age	[13 - 15]	(n= 2; 100%)	[15 - 20]	[40 - 45]	[40 - 45]	(n= 1; 100%)	[40 - 45]	(n= 1; 100%)	[40 - 45]	(n= 1; 100%)
	Victim origin	Spanish	(n= 2; 100%)	Spanish	Foreign	Spanish	(n= 1; 100%)	<i>n.d.</i>		<i>n.d.</i>	

The number of cases is shown in parentheses and correspond to the length of the coloured fragment. *ID*, intellectual disability; *n.d.*, no data; *Women tra.*, women trafficking; *Daily life if P. with ID*, daily life of people with intellectual disabilities; *n*, number of cases.

Regarding the voluntary consumption of psychoactive substances by victims around the moment of the assault, only the use of alcohol was known in the case involving labor context related to leisure nightlife. In turn, concerning toxicological analyses, four cases reported

positive results in hair. As such, in the case involving forced prostitution, hair analyses detected the regular use of trazodone, nordiazepam, lidocaine, metoclopramide, cocaine, and amphetamine, coinciding with the time of alleged assaults. Likewise, in the case classified in the healthcare context, hair analyses detected the frequent use of zolpidem coinciding with the time of assaults. Hair analysis also detected the regular consumption of chlorpheniramine and metoclopramide in one case classified within the educational context, as well as brompheniramine in another case classified in the labor context. Finally, blood and urine samples were only analyzed in the case related to the labor context in leisure nightlife, detecting the antihistamine brompheniramine in both matrices.

2. Confluence of model results: profiles and experiences of victimization by DFSA.

The process of violence leads to experiences suffered by different victims with specific profiles. As such, we propose here to discuss experiences and profiles of victimization. The study of data from alleged DFSA cases allowed us to identify several of these experiences and profiles within the specified contexts. The identification of experiences of victimization was proposed through the study of the five interactive factors at the microsystem level: frequency of assaults, number of assailants, assailants' gender, the previous relationship between assailant and victim, and the *modus operandi* used by assailants to approach victims. Likewise, profiles of victimization were identified by the study of two factors at the individual level: victims' gender and age. Experiences and profiles of victimization were studied for cases in which data were available for all factors considered both at the microsystem level and at the individual level. A study focused on this specific group within the casuistry allowed a more accurate approximation of the DFSA phenomenon's reality. Figure 36 shows the experiences and profiles identified within the contexts of leisure nightlife and domestic cohabitation, which encompassed most of the cases. As shown, the articulation of factors at the individual level allowed the configuration of specific profiles of victimization (yellow). Meanwhile, the articulation of interactive factors at the microsystem level allowed the configuration of experiences of victimization (light green). Lines linking factors included at each level represent this articulation.

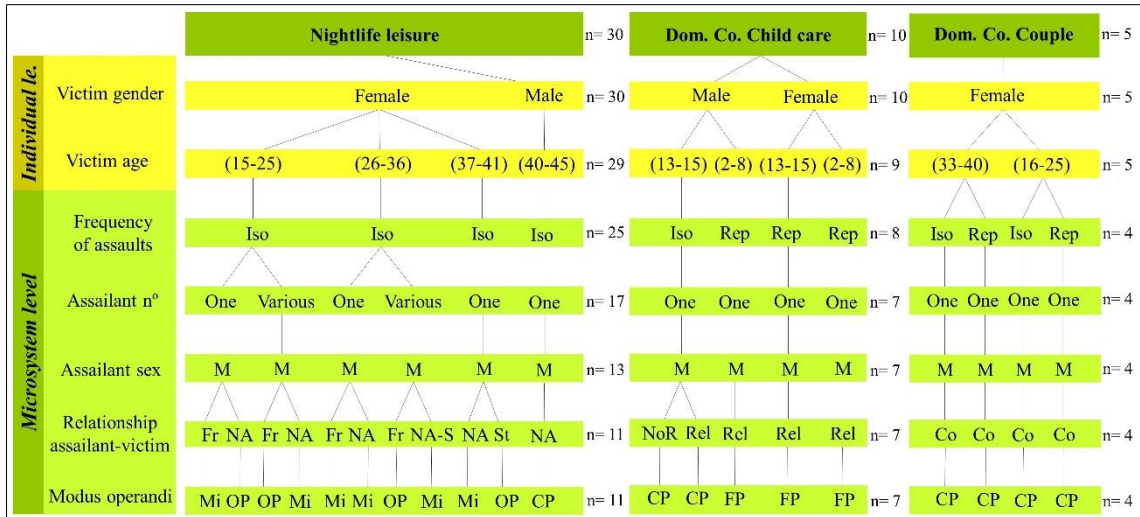


Figure 36. Experiences and profiles of victimization by DFSA identified in contexts of leisure nightlife and domestic cohabitation. *Dom. Co.:* Domestic Cohabitation; *Iso:* isolated; *Rep:* repeated; *M:* male; *R:* relative; *NoR:* no relative; *Co:* couple; *Fr:* friend; *NA:* new acquaintance; *St:* stranger; *CP:* covert proactivity; *FP:* forced proactivity; *Op:* opportunistic; *Mi:* mixed (opportunism + covert proactivity); *n:* number of cases.

2.1. Leisure nightlife contexts.

Data for all factors included at both the microsystem as the individual level were available for eleven of the alleged assaults that happened in the context of leisure nightlife. As shown in Figure 3, four profiles of victimization were identified based on victims’ gender and age. The first group comprises women aged from 15 to 25 years old, followed by a second group, including women ranging between 26 and 36 years old. The third group involves older women, aged from 37 to 41. In turn, the fourth profile of victims corresponds to man ranging from 40 to 45 years old. Regarding victimization experiences, each line at the bottom of Figure 3 corresponds to each of observed possibilities. Assaults affecting women share several characteristics. As such, they suffered one isolated assault perpetrated by one or various male assailants (M), who were mainly people known by victims, such as friends (Fr) and new acquaintances (NA), although strangers (S) were also observed. All they followed an opportunistic (OP) or mixed (Mi) *modus operandi*. In turn, male victimization involved one isolated assault perpetrated by one male assailant, who was a new acquaintance of the victim, through a proactive-covert *modus operandi*.

2.2. Domestic cohabitation contexts.

Data for all factors included at both the microsystem as the individual level were available for ten of the alleged assaults that happened in the context of domestic cohabitation. These cases

comprise five assaults during the cohabitation of people underage with caregiver adults, four cases of couple living, and the only one known case involving minors kidnapping. As shown in Figure 34, four profiles of victimization were identified during the cohabitation of people underage with caregiver adults: female and male children aged from 2 to 8 years old, and girls and boy teenagers aged from 13 to 15 years old. Similarly, the profile of victimization in the only one known case involving minors kidnapping also affected to a girl teenager aged from 13 to 15 years old. In turn, two profiles were identified during couple cohabitation: women aged from 33 to 40 years old and younger women ranging from 16 to 25 years old. Regarding the experiences of victimization, both female and male children, as well as girl teenagers suffered from repeated assaults (Rep) perpetrated by one male (M) assailant who was a relative of the victim through a proactive-forced *modus operandi* (FP). A similar experience was observed in the case involving minors kidnapping. The victim suffered repeated assaults perpetrated by one male assailant, the kidnapper, who was a known man by the victim, through a proactive-forced *modus operandi*. In turn, boy teenagers suffered one isolated assault (Iso) perpetrated by one male assailant being or not a relative (NoR) through a proactive-covert *modus operandi* (CP). Concerning couple living, victimization experiences consisted of both isolated as repeated assaults perpetrated by one male assailant, the victim's couple, through a proactive-covert *modus operandi*.

2.3. Other contexts.

Fewer data were available for other contexts because of the lower number of cases and to the limitations of data collection. However, interesting results were observed. Regarding cases that happened within the educational context, available data showed that victims were girl teenagers, who suffered victimization experiences consisted of proactive assaults perpetrated by male assailants. In turn, two different situations were observed within the labor context, which comprised two specific profiles of victimization. The first labor situation was linked to the leisure nightlife. Similarly, to the pattern previously observed in settings of leisure nightlife, the victim was a young woman aged between 15 to 25 years old. In this case, the victimization experience consisted of one isolated assault perpetrated by one male assailant, a victim's co-worker, through a mixed *modus operandi*. The second situation happened during domestic service. The victim was a woman aged between 40 to 45 years old, who suffered repeated proactive-covert assaults. Likewise, victims were also women aged from 40 to 45 years old in the remaining contexts involving healthcare, women trafficking for forced prostitution, and the daily life of people with intellectual disabilities. Furthermore, these victims also shared other characteristics that could seriously affect their ability to resist an assault. They were diagnosed with mental illnesses, chronic use of alcohol or intellectual disabilities. Experiences in healthcare

and forced prostitution consisted of repeated proactive assaults, while the victim with intellectual disability suffered one isolated assault through covert proactivity.

DISCUSSION

Research about victimization by DFSA has been focused up to date on the leisure contexts involving nightlife, party culture, and dating. Consequently, there is a limited study about the phenomenon in other contexts, resulting in a significant bias affecting the research of DFSA at a contextual level. Indeed, widespread names to refer to DFSA points towards the existence of this biased focus, for instance, "*date rape*", "*date rape drugs*", or "*club drugs*". Despite the specific setting implied by these terms, this form of violence is not limited to dates only [34]. The approach of this situation under the view promoted by a new ecological working framework developed for understanding DFSA [17] locates this biased focus at the microsystem level of ecological influence. According to this framework, the process of violence results from the configuration of factors classified at different influence levels. As such, the microsystem level encompasses the situational characteristics, the dynamics of the social interrelation of victims around the moment of the attack, and the spatial-temporal location of the assault. Likewise, other authors have also pointed out the importance of considering the contextual characteristics surrounding DFSA [13]. Therefore, the contexts of victimization were studied herein through the analysis of factors involved at the microsystem level in a sample of alleged DFSA cases. In turn, the analysis of factors involved at the individual level allowed the study of profiles of victimization by DFSA within each of the identified contexts. Factors used to study the victims' profiles included gender and age, and data about other specific vulnerability factors were also considered. Most of cases in our study involved alleged assaults happened in contexts of leisure nightlife. Social dynamics characterizing these cases comprise activities linked to the hegemonic recreational nightlife model, which has been pointed as the prevalent youth way of enjoying nightlife in European societies [18]. Such a recreational model is characterized by a culture of self-intoxication [42], which involves a pattern of binge-drinking [18,43,44]. Some authors have highlighted that this recreational model can carry more negative consequences for women than men [45], especially within communities in which prevails a violent cultural background against women, characterized by sexist perceptions regarding drug use by women and female sexual interrelationships [38]. One of these negative consequences is the especially high affectation of women by DFSA in leisure nightlife, an observation consistent with results from this study. As such, the main profile of victimization identified within this context corresponded to women aged from 15 to 41 years old, who suffered one isolated assault perpetrated by one or various male assailants, friends, new acquaintances, or strangers of the

victims, through an opportunistic or mixed *modus operandi*. Alcohol was the substance mainly involved in these cases, a result consistent with many other studies [21,28,29,46], so it is not unusual the high presence of opportunistic assaults. However, regarding mixed assaults, it should be noted that several factors may influence victims' statements about their drug use. Firstly, the widespread misconception according to DFSA only happens under proactivity or "drink-spiking" [13,38]. Secondly, victims may fear being blamed if they recognized that the assailant took advantage of their voluntary use of drugs, especially in societies with sexist perceptions regarding women's drug use [38]. Likewise, identified victimization profiles within the leisure nightlife context comprised also men aged from 40 to 45 years old, who experienced one isolated assault perpetrated by one male assailant, a victim's new acquaintance, through a covert proactive *modus operandi*. The only one observed case affected to a gay man and was combined with theft to the victim. Previous studies have observed the affectation of the gay community by DFSA related to the *chemsex* phenomenon [47,48].

Beyond to leisure nightlife, alternative contexts of victimization by DFSA were also identified. The second largest-group comprised domestic cohabitation, in which three situations were differentiated: living of people underage with caregiver adults, couple cohabitation, and minors kidnapping. Regarding assaults involving cohabitation of minors with caregiver adults, identified profiles included girl teenagers aged from 13 to 15 years old, as well as female and male children aged from 2 to 8 years old. These three profiles suffered repeated proactive-forced assaults perpetrated by one relative man, mainly the victims' father or stepfather, or the victim's mother's couple. In this situation, the fourth victimization profile involved boy teenagers, aged 13 to 15, who suffered one isolated assault perpetrated by one male victim's relative, or by a not relative male, through a covert-proactive *modus operandi*. Concerning couple cohabitation, two profiles were differentiated: women aged around their thirties and younger women, aged from 16 to 25 years old. Both groups suffered from similar experiences, consisting of isolated or repeated assaults perpetrated by their male couple through a covert-proactive *modus operandi*. At this point, attention must be paid to the fact that victims were healthcare professionals in three of the four assaults that allegedly happened during couple cohabitation. These victims' professional skills probably helped them suspect their victimization and self-identify as victims of DFSA. However, other women suffering from similar experiences, but without medical skills or knowledge, could suffer more significant difficulties in realizing their victimization. Probably, this condition is currently hiding greater female victimization by DFSA in domestic cohabitation situations. On the other hand, the third situation of victimization by DFSA in contexts of domestic cohabitation involved minors kidnapping. The victim's profile

corresponded to a teenage girl aged from 13 to 15 years old, who experienced repeated forced proactive assaults perpetrated by the kidnapper, a man previously known by the victim. In turn, psychoactive pharmaceuticals were main substances involved in these assaults. Concretely, benzodiazepines or analogues like lorazepam or zolpidem, and antihistamines, such as diphenhydramine. Other substances involved in cases of alleged DFSA affecting minors were cocaine and lidocaine. The latter has also been related to DFSA by previous studies [30,34].

Other victimization contexts identified within the analyzed sample were education, labor, healthcare, women trafficking for forced prostitution and the daily life of people with intellectual disabilities. These contexts comprised a lower number of cases in comparison with those that happened in settings of leisure nightlife and domestic cohabitation. Even so, the consideration of these contexts is significant for the qualitative identification pursued by this study. Likewise, it allows faithful to the 2030 Agenda's global challenge consisting of "*no one will be left behind*" [19]. Within the educational context, victimization involved proactive assaults allegedly happened in educational institutions and suffered by girl teenagers aged from 13 to 15 years old. In turn, cases classified within the labor context included assaults at the victims' workplace during their working day. In this sense, two different labor situations were observed. A labor situation related to leisure nightlife involved victimization profiles and experiences similar to those previously identified in the leisure context but perpetrated by co-workers. Another labor situation linked to domestic service consisted of the repeated victimization of women aged 40 to 45 years old through covert proactive assaults. Remaining contexts comprised healthcare, women trafficking for forced prostitution, and the daily life of people with intellectual disabilities. Victimization experiences and profiles for these three contexts involved also women aged 40 to 45 who suffered proactive assaults. Profiles corresponding to these contexts shared significant vulnerability factors. Intellectual disability was of over 50 % in the case affecting a victim with this limitation. In this line, victims assaulted both in healthcare and forced prostitution contexts were previously diagnosed with mental illness and chronic alcohol use.

Experiences of victimization by DFSA varied widely among the diverse contexts and profiles identified. Significant differences included assault frequency, involved substances, and *modus operandi* used by assailants to approach victims. As such, the experience of victimization in leisure nightlife contexts consisted of only one isolated assault in which alcohol was usually involved through an opportunistic or mixed *modus operandi*. However, most victims in domestic cohabitation suffered proactive assaults repeatedly. In this way, as more vulnerability factors join in the victims' profile and, consequently, their ability to resist the assaults decreases, increased assailants' active involvement is observed. At this point, it is necessary to take in mind

that violence has an intersectional nature, in which the vulnerability factors involved may simply add one form of disadvantage to another, or produce a multiplier effect [36]. In this sense, the assailants' *modus operandi* for approaching victims involves opportunism in assaults within leisure nightlife; covert proactivity in a couple living and assaults to male teenagers in domestic cohabitation contexts; and forced proactivity in assaults suffered by female teenagers and children's during domestic cohabitation with adult caregivers. The increasing active involvement of assailants as more vulnerability factors intersect in the victims' profiles is consistent with the hunting model, according to which sexual assailants select their victims based on their level of vulnerability or their ability to resist an assault (49-51). In this sense, it is widely recognised that violence particularly affects the most vulnerable people [1]. Finally, beyond the contexts, profiles, and experiences of victimization identified herein, probably there are many others yet unidentified. For instance, people in juvenile and foreign facilities, as well as any other profile and context in which vulnerabilities converge. Therefore, more research is necessary. In this sense, despite a significant lack of data, this study showed that administrative information generated during the institutional interaction with victims constitutes a useful source of information for improving knowledge about the DFSA phenomenon. As such, the proper registration and management of such data are very significant tasks [36], since proper knowledge about the DFSA phenomenon is essential to develop well-targeted prevention efforts [17].

Limitations.

The contexts, profiles, and experiences of victimization observed in this study result from the analysis of a sample formed by cases reported to authorities. Some victims may report more than others because they have a higher capacity to seek help. Consequently, the lower presence of specific contexts, profiles, or experiences of victimization in the analyzed sample not necessarily means a lower affectation. Victimization surveys are recommended to get a complementary knowledge of the prevalence of assaults.

CONCLUSIONS

This work opens up new study lines at the research of the DFSA phenomenon since it faces a bias importantly affecting this issue: the limited study of DFSA in contexts different from the leisure nightlife. This advance was possible by the application of a new working ecological framework recently proposed to improve the understanding of the victimization by DFSA [17]. Within this framework, the bias currently affecting the research of DFSA was located at the microsystem level. In this way, an in-depth study of this level allowed improving the knowledge

of the contextual diversity of the DFSA phenomenon. Several contexts of victimization were identified beyond leisure nightlife, including domestic cohabitation, education, labor, healthcare, trafficking of women for forced prostitution, and the daily life of people with intellectual disabilities. Victimization within domestic cohabitation involved three different situations, consisting of minors living with caregiver adults, couple cohabitation, and kidnaping of minors. In turn, various experiences and profiles of victimization were observed within each of the identified contexts. The experiences of victimization varied widely among contexts, especially regarding the frequency of assaults and *modus operandi*. Isolated assaults perpetrated through opportunistic or mixed *modus operandi* prevails in leisure nightlife, while repeated proactive attacks mainly characterize victimization experiences in domestic cohabitation and other contexts. In this sense, increasing active involvement of assailants was observed as more vulnerability factors intersect in the victims' profile, reducing their ability to resist the assaults. This observation is consistent with the hunting model according to sexual assailants select their victims based on their level of vulnerability. Furthermore, it reminds us that violence particularly affects the most vulnerable people. On the other hand, cases whose judicial inquiry involved requests for toxicological analysis of victim's hair samples were a suitable group of casuistry to achieve an approximation to the victimization by DFSA in other contexts different from the leisure nightlife. In this line, this study is faithful to the global challenge of "leave no one behind" pursued by the Agenda 2030 [19], applying this demand to the research of the DFSA phenomenon. Likewise, since DFSA is a specific form of sexual violence that affects especially women, the work done is consistent with the target 5.2, focusing on the elimination of all forms of violence against women and girls. Better knowledge about the experiences and profiles of victimization improves the understanding of the variability and typology of DFSA. In this sense, results from this study highlight the potential of administrative data generated during the institutional interaction with victims to get a more in-depth knowledge of the experiences and profiles of victimization. Proper use of such a data source is an opportunity to learn from the previous victimizations and generate knowledge useful to guide the investigation of new cases, the treatment of victims, and the well-targeted prevention strategies. Finally, beyond the contexts and profiles of victimization by DFSA identified in this paper, there are probably many others still unknown. For instance, people in juvenile and foreign facilities. Since violence mainly affects the more vulnerable people, more research is necessary focussing on any profile and context in which vulnerabilities converge. In addition to the study of administrative data, victimization surveys are recommended to get a complementary knowledge of the prevalence of assaults and the affected contexts and profiles, because of the difficulties faced by victims to seek help and report assaults to the authorities.

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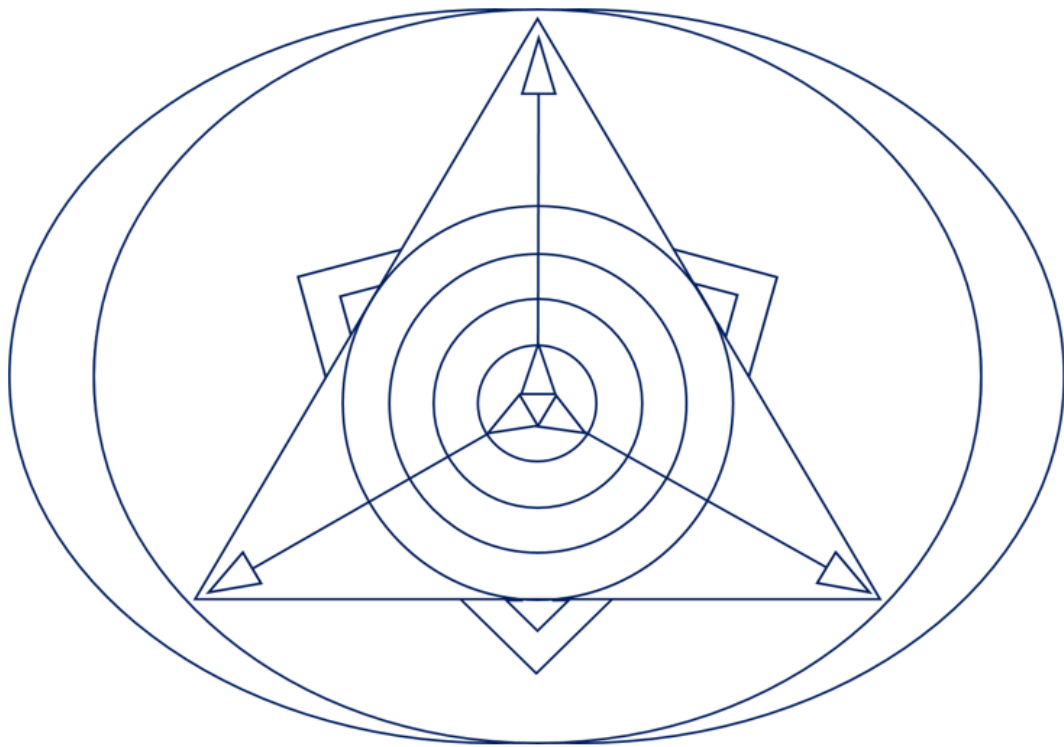
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CHAPTER 6

Thesis Contributions to Sustainable Development.



This Thesis within the Sustainable Development's Frame

By channelizing university higher education's positive influence potential, this thesis contributes to enhancing higher education's contribution to sustainable development. At this point, the famous Rudyard Kipling's poem "I Keep Six Honest Serving Men" [1] provides an excellent way for approaching this thesis's contribution to sustainable development's challenges.

*"I keep six honest serving-men
(They taught me all I knew);
Their names are What and Why and When
And How and Where and Who."*

A fragment of "I Keep Six Honest Serving Men", from Rudyard Kipling [1].

What this thesis is?

This thesis constitutes an answer to the 2030 Agenda for Sustainable Development's call for action to change our world and transform it for the better by 2030, a historical, extraordinary demand by the global community channelized through the United Nations system in September 2015 with the Resolution A/Res/70/1 [2]. Likewise, resulting from the first SDGs Summit in September 2019, the Resolution A/Res/74/4 reaffirmed this call for action [3]. Acknowledging the new decade from 2021 to 2030 as a decisive, crucial moment for current and future generations and all life on the planet, this second Resolution highlighted again the importance of a revitalized global partnership for sustainable development based on a spirit of solidarity. Accordingly, aligning with these necessities, this thesis becomes a robust response to the 2030 Agenda's call for action to change our world.

Why does this thesis respond to the 2030 Agenda's call for action?

Because of a strong desire to contribute to the achievement of sustainable development. Concretely, because of the need to mobilize and make available to this admirable purpose, two potentially valuable resources available at the higher education university context: high human creativity and scientific knowledge. Even more, because of the possibility to provide efficient solutions to three specific necessities acknowledged by the 2030 Agenda as fundamental steps for achieving sustainable development.

1. We will not achieve the Goals and targets without a revitalized Global Partnership [2].
2. There can be no sustainable development without peace [2].

3. The sustainable development is not possible if women continue to be denied its human rights. [2]

When does this thesis respond to the 2030 Agenda's call for action?

This thesis development elapses during the first five years of the life of the 2030 Agenda, that is, in the period between 2016 to 2021. In this way, this thesis started in 2016, the same year the Agenda came into effect. Likewise, it finishes in 2021, at the beginning of a crucial decade for the Agenda and consequently, at a critical moment for sustainable development. Based on these dates, since the Agenda defines itself as a “*historic decision*”, this thesis happens at a landmark time. Concretely, the Agenda claims, “*We may be the last to have a chance of saving the planet*” [2].

How does this thesis respond to the 2030 Agenda's call for action?

Through a two-step process involving the development and first application of a new valuable tool for generating efficient solutions to violence, understood as the destructive and disintegrative phenomenon underlying unsustainable human behaviours.

Where does this thesis respond to the 2030 Agenda's call for action?

The response arises from the higher education university context provided by the University of Alcalá, complemented by national and international government institutions. Concretely, the INTCF, belonging to the Spanish Government’s Ministry of Justice, and the UNODC.

Who does respond through this thesis to the 2030 Agenda's call for action?

A unique and cohesive human core consisting of two fundamental pieces working together: young students and professors cooperating from inside the higher education university context. The 2030 Agenda acknowledges young people and the scientific and academic community as two essential stakeholders for working on achieving sustainable development.

1. Contributions to sustainable development by facing the DFSA phenomenon.

Support generated to solutions to DFSA, at its cultural, institutional, and direct dimensions, enhanced the university higher education's contribution to sustainable development achievement. Concretely, through specific contributions to different SDGs and targets of the 2030 Agenda. Contributions adjusts to eight targets from three different SDGs. These multiple steps at different SDGs throw light on the goals' interconnection, their integrated and indivisible character, as an essential element for encouraging sustainable development achievement.

Moreover, it becomes an excellent example of the university higher education's ability to contribute to sustainable development challenges positively.

1. Firstly, regarding **SDG 5**, all efforts developed for studying the DFSA phenomenon and generating support and new solutions to this form of violence firmly adjusted to Target 5.1 and Target 5.2, focused on eliminating all forms of discrimination and all forms of violence against women and girls. In the same line, these actions also promoted Target 5.6, contributing to ensuring universal access to sexual and reproductive health and reproductive rights. Furthermore, it is worth noting that focussing on the DFSA phenomenon for the first application of the new ecological working framework, this thesis contributed to realizing gender equality and the empowerment of women and girls, crucial elements to progress across all the SDGs and Targets.
2. Secondly, concerning **SDG 3**, the implementation of an intersectional approach when seeking solutions and support generation to the DFSA phenomenon allowed strengthening substance abuse prevention, including narcotic drug abuse and especially harmful use of alcohol, as Target 3.5 pursues. Furthermore, increasing awareness of government institutions and authorities about the severity of the DFSA phenomenon contributed to boost Target 3.7, aimed to ensure universal access to sexual and reproductive health-care services, including for family planning, information and education
3. Third, regarding **SDG 16**, the second application of the new ecological working framework as a study tool contributed to make visible the victimization of people underage by DFSA, contributing to reach Target 16.2, which aims to end abuse and all forms of violence against children. Likewise, the efforts developed from inside government institutions at the national and international levels boosted Target 16.3, consisting of promoting the rule of law at the national and international levels and ensure equal access to justice for all. Contributions to this target result from recommendations to UNODC for including a specific approach to the DFSA phenomenon during the judicial investigation of rape crimes, and the innovation proposal to include a question about the victim's state of vulnerability when suffering from sexual violence within the Victimization Survey for Latin America and the Caribbean. Moreover, developing a new screening methodology and blood sample preparation at the INTCF also contributed to reaching Target 16.3. Finally, the new model developed for the

prevention of the DFSA phenomenon in Mexico boosted Target 16.a, aimed to strengthen institutions through international cooperation, particularly in developing countries, for building capacity to prevent violence and crime. In this sense, the research stay in the Liaison and Partnership Office of UNODC for Latin America and the Caribbean boosted several working lines of the Spanish Master Plan for Development Cooperation 2018 – 2021.

4. Fourth, the application of the new ecological working framework to overcome the biased, narrow focus of study limited to young women's victimization in leisure contexts allowed identifying alternative contexts and profiles of victimization. This effort adjusts to the fundamental promise of the 2030 Agenda, consisting of *“leave no one behind”*. In this sense, the Agenda highlights the crucial need to work in a spirit of strengthened solidarity particularly focused on the needs of the poorest and people in vulnerable situations. It encourages us to pay particular attention to the voices of the most vulnerable people, emphasising the need to endeavour to reach the furthest behind. At this point, focusing on the DFSA phenomenon aligns with this particular care towards the most vulnerable. This form of violence is a representative example of the disturbing reality of how violence mainly affects the most vulnerable people. Firstly, victims suffer assaults when they experience temporary disability derived from the use or abuse of psychoactive substances. Furthermore, after the assault, victims experience a range of situations that make it difficult for them to self-acknowledge themselves as such.
5. Finally, working on the DFSA phenomenon also contributed to the **United Nations Youth Strategy's fourth priority sphere**, strengthening focus on intersecting forms of discrimination and abuse suffering from young people and preventing widespread violations to their human rights.

2. Contributions to sustainable development by the new ecological working framework.

This thesis enhances the contribution of the university higher education to the advance towards the achievement of sustainable development. However, this contribution goes beyond the previously described benefits, reached through approaching the DFSA phenomenon as a specific problem. In this sense, the developed work through this thesis's response to the 2030 Agenda's call for action fulfils other specific needs acknowledged as crucial aspects for sustainable development. The proposal of the mechanism that incorporates the nonviolence approach to

channelling the positive influence potential is a significant advance for reaching sustainable development because:

1. **Firstly, it contributes to fulfilling the Agenda's demand for revitalizing a Global Partnership for Sustainable Development based on a spirit of strengthened solidarity.** As discussed in the Context grounding this thesis section, the spirit of solidarity demanded by the Agenda adjusts to the concept of love force under the nonviolence approach. In this sense, since the new mechanism operates under the nonviolence approach, channelizing the application of such a constructive and integrative force, this new ecological working framework becomes a hopeful tool at a decisive moment for sustainable development. In this line, the designed mechanism contributes to achieving **SDG 17**, aimed at revitalizing the Global Partnership for Sustainable Development. Concretely, Target 17.16, seeking to enhance this partnership and complement it with multi-stakeholder partnerships that mobilize and share knowledge.
2. **Secondly, it contributes to fulfilling the Agenda's demand to foster peaceful societies free from violence, thanks to channelizing nonviolence's constructive and integrative power.** The suitability of a mechanism of this nature for achieving sustainable development becomes evident when considering that the Agenda acknowledges, *"There can be no sustainable development without peace"* [2]. At this point, the designed mechanism contributes to achieving **SDG 16**, aimed to promote peaceful societies for sustainable development. It mainly contributes to Target 16.1, which looks to reduce all forms of violence significantly. Importantly, the new mechanism also boosts the realization of the Seville Statement on Violence's conclusion, *"War was invented in ancient times, and in the same way, we can invent peace in our time"* [4].
3. **Third, it contributes to fulfilling the Agenda's SDG 4, fundamentally Target 4.7, encouraging the acquisition of the knowledge and skills needed to promote sustainable development, including education for human rights, gender equality and promotion of a culture of peace and nonviolence, and global citizenship.** In the same line, the new channelling mechanism incorporating the nonviolence approach also contributes to fulfilling important needs from the World Declaration on Higher Education for the XXI Century [5]. Concretely, the need to renew higher education for contributing to building a better world and promoting a culture of peace and

nonviolence, and the need to reinforce higher education's role of service to society through transdisciplinary approaches to social problems.

4. **Fourth**, since the new tool targets the educational sector as the immediate context of implementation, **it contributes to fulfilling the Agenda's demand to empower youth and channelizing their infinite capacities for activism into the creation of a better world**. In this sense, this thesis becomes an example of leadership, a role model for taking action focused on achieving sustainable development, making visible for the university students their high positive influence potential and the possibility of mobilizing it to build a better world.

Prospects of the Ecological Working Framework to other forms of Violence

This thesis focussed on the DFSA phenomenon as a representative form of violence presents a new working framework that can help improving knowledge about other violence problems and designing and articulating actions focused on generating support to solutions facing their cultural, institutional, and direct dimensions. Therefore, beyond the particular focus on the DFSA phenomenon implemented in this thesis, their observations become helpful for overcoming any violence, providing the basis for future prospects in the framework of sustainable development.

1. The new ecological working framework: an engine for sustainable development.

We must remind that, as previously pointed, violence is an unsustainable human phenomenon [6]. Consequently, overcoming violence is a crucial step to achieve sustainable development. This important asseveration applies to the three dimensions, social, economic, and environmental, of sustainable development, since we, human beings, inflict violence both on social and economic structures of our communities, as well as on the environment. In this sense, the developed new tool in this thesis plays a crucial role in overcoming the violence phenomenon, since it allows channelizing our creative capacity to look for efficient, constructive solutions to violence problems and positively influence our surroundings (see in Context grounding this thesis: A three-phase process for applying nonviolence).

The possibility of configuring an inverse process to violence results from a powerful capacity for positive action in a constructive and integrative way. This opposite power to disintegrative violence is nonviolence, which involves a bidirectional approach focused on the human ability to provide efficient solutions to violence's disintegrative effect. In this sense, based on the nonviolence approach described in the context grounding this thesis, every person takes part equally in life's fabric, so any of us suffers the violence's destructive effect inflicted on another element of the biosphere [6]. The love force is crucial to comprehend this shared hurt, empathize and get motivation and positive determination to constructively overcoming problems. This love force allows us to overcome violence as the disintegrative human phenomenon lying behind unsustainable behaviours and, consequently, to contribute to sustainable development. In this sense, by efficiently channelizing our human potential to influence our surroundings positively and generate solutions to violence, the developed new working framework operates as an engine favourably contributing to sustainable development.

2. The operational process of the new engine encouraging sustainable development.

The UNESCO's constitution claims, "*The war begins in the mind of men and women*" [7]. However, not only violence, as a destructive, disintegrative power starts in our mind. Inside us, we also host the opposite, constructive, integrative power of nonviolence. Such a powerful capacity for action to influence our surroundings positively offers us the possibility of configuring an inverse process to violence. Since the new ecological working framework operates as a tool contributing to configure a process inverse to violence, it constitutes an innovative engine for encouraging sustainable development. We base on the three-phase scheme for nonviolence applying to explain how the new engine encourages sustainable development (see in Context grounding this thesis: A three-phase process for applying nonviolence). However, just in case, we must first clarify that the new instrument studied here is not a physical device. It is a conceptual tool built on multiple theoretical perspectives concerning sustainable development. As such, this engine operates in three phases within the human mind, energized by the love force coming from the nonviolence approach and combining as feedstock our creative capacity mobilized for constructively overcoming problems and information or knowledge about the problem targeted.

Phase nº 1. By the love force, we overcome ignorance and get the motivation to influence our surroundings positively. The process for generating efficient solutions to the violence phenomenon begins when, by the love force, we overcome the concept of ignorance understood under the nonviolence approach's umbrella. In other words, when we comprehend the subtle connectedness between all the elements of life's fabric [6]. The love force potentiates and significantly increases within ourselves, providing us with the motivation to influence our surroundings positively.

Phase nº 2. We choose to allow the love force to turn negativity into positive determination for overcoming problems. Through the determination to overcome the violence phenomenon inspired by the love force, we mobilize our creative capacity to put it at the disposal of the process focussed on generating efficient solutions to violence.

Phase nº 3. We use our creative capacity for implementing a transformation process consisting of constructive, integrative actions for overcoming problems and influencing our surroundings positively.

The new ecological working framework intervenes at this third phase. At this point, applying the new engine, we combine two elements composing the necessary feedstock:

a) **Our human creative capacity.** It is mobilized through our positive determination to overcome problems constructively.

b) **Intelligence,** understood as information or knowledge useful for guiding decision-making processes. It results from a two-step procedure using the new framework. Firstly, a load step for classifying accurate data and truthful information by the levels of ecological influence. Secondly, an assimilation step, through which acquiring understanding about the targeted problem and its features, based on the previously load data and information. This element's nature fits the in-depth forensic and criminological knowledge discussed in the Introduction (see Context grounding this thesis: Forensic Intelligence).

By combining these feedstocks through the multidimensional structural frame operating within the human mind, we obtain a first intermediate product resulting from the process for generating efficient solutions to the violence phenomenon. We build capacity to guide well-targeted and evidence-based decision-making processes inspired by constructive, integrative love force. In other words, this first product consists of **strategic thinking able to properly guiding well-targeted, evidence-based, and force love-inspired actions for generating efficient solutions to the violence phenomenon, considering its cultural, institutional, and direct dimensions.**

Finally, through this product, we can implement a transformation process consisting of constructive, integrative actions providing efficient solutions to the violence phenomenon. These adequate solutions allow finishing violence as an unsustainable phenomenon and replacing it with nonviolence. Consequently, through nonviolence, **the final product provided by the new ecological working framework is sustainable development.** Figure37 illustrates the operational process of the new engine encouraging sustainable development.

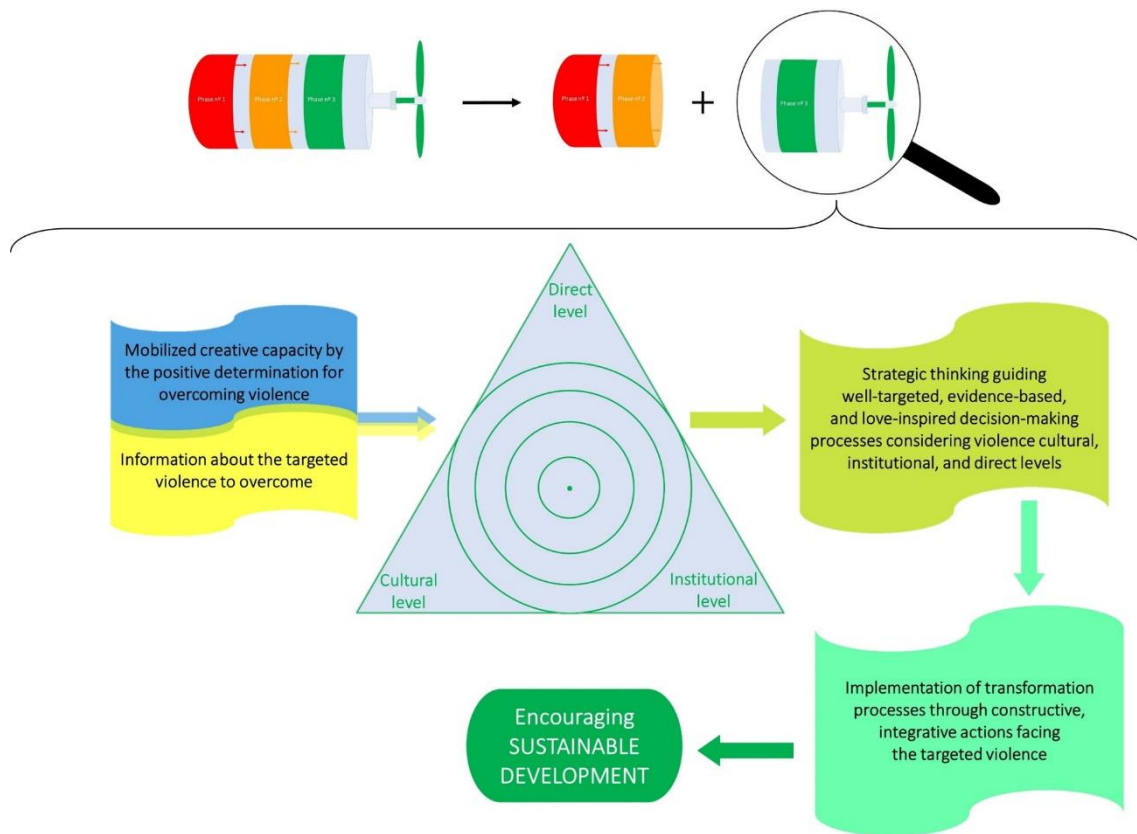


Figure 37. The operational process of the new engine encouraging sustainable development

3. The three essential elements to start running the engine.

The visualization of the new ecological working framework as an engine, a mechanically operated working tool for generating efficient solutions to the violence phenomenon, helps better understand its operating and application. Based on this mechanical comparison, this engine's activation process requires three elements to start running. Firstly, the activation requires an operator responsible for switching on the machine or driving the operating lever. Secondly, the activation process needs the energy necessary to generate movement, provided by a battery or a power source. Third, the feedstock for creating the final product. Below, an explanation of these three elements in light of the application to DFSA shown in this thesis. Figure 38 illustrates these three elements operating together.

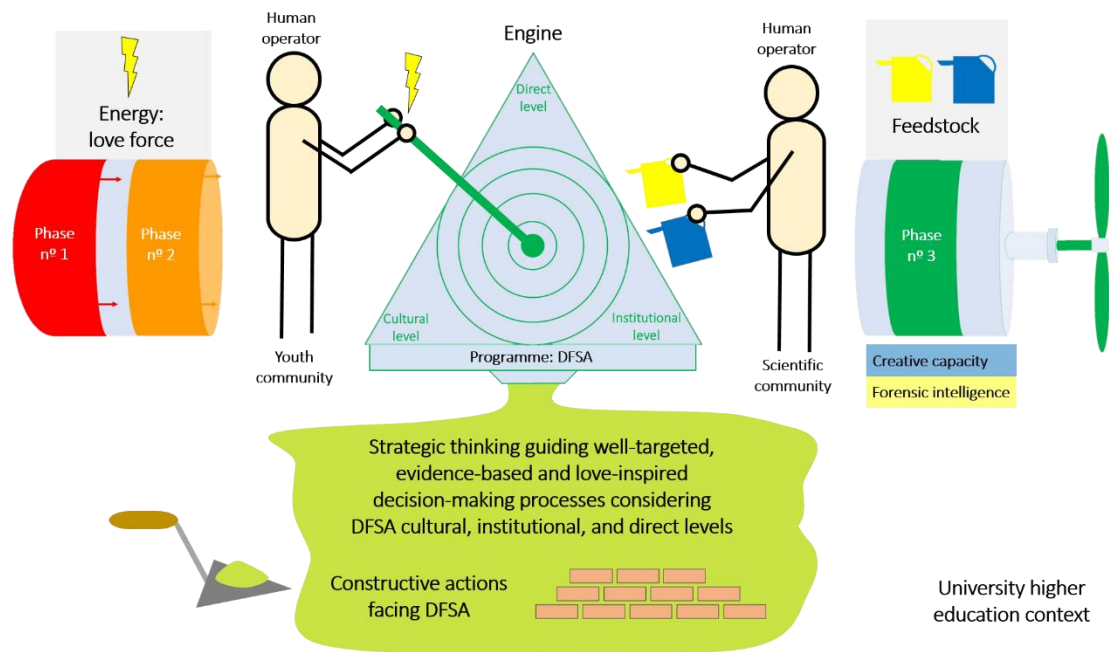


Figure 38. The three essential elements to start running the engine for sustainable development

a) An operator responsible for switching on the engine.

Regarding the operator responsible for switching on the engine, it is necessary to remember the scope from the 2030 Agenda’s call for action to change our world. It involves governments, the United Nations System, local authorities, civil society, the scientific and academic community and all people [2]. This last element, the *People*, plays a fundamental role within the Agenda, becoming an area of critical importance. However, within the *People* overall, the Agenda pays special attention to the *Young People*. The document explicitly acknowledges the involvement of today’s younger generations as critical agents of change for building a better world. This thesis has heartily adjusted to this statement. In this sense, young people constitute one of the two stakeholders composing the operator responsible for switching on the engine. They worked hand in hand with another key stakeholder recognized by the Agenda: the scientific and academic community. Both elements met and merged, shaping a unique and cohesive human core within the university higher education, which served as an invaluable meeting point within the civil society. Therefore, using the mechanical comparison, the operator responsible for switching on the new framework consisted of two fundamental human pieces acting together from the university higher education: young students and university professors/researchers.

b) The energy moving the engine.

The necessary energy for starting running the new ecological working framework as an engine for encouraging sustainable development is the love force, coming from the first two phases of the three-phase process designed in this thesis for applying nonviolence. In this way, when we overcome “ignorance” and comprehend the subtle connectedness between all the elements of life’s fabric, the love force potentiates and significantly increases within ourselves. This increased spirit of solidarity gives us the motivation to influence our surroundings positively. The love force is the power source energizing the engine for overcoming violence, turning negative emotions/feelings into positive determination focused on generating efficient solutions to violence.

c) The feedstock transformed by the engine into a useful product.

After studying the engine, the operator, and the energy, we must focus on the raw material. As previously commented, the feedstock encompasses two essential elements: human creative capacity and intelligence about the targeted problem. The new ecological working framework channelizes their combination. It provides well-targeted, evidence-based, and love-inspired strategic thinking guiding decision-making processes to implement efficient solutions to violence’s cultural, institutional, and direct dimensions. The application to the DFSA phenomenon performed in this thesis included intelligence about the DFSA phenomenon coming from the field of study of crime. Concretely, the specific, complete and accurate knowledge resulting from forensic intelligence from casuistry data and criminological knowledge about the DFSA phenomenon. Forensic science and criminology, two scientific disciplines harmonized in studying crime, are excellent sources of information about the DFSA phenomenon. Both of them have compiled a great deal of knowledge about this topic during the last decades. In this way, the feedstock for the first application of the new working framework to the DFSA phenomenon combines human creative capacity with intelligence about the topic resulting from the information provided by forensic and criminological studies.

Finally, under a future perspective focused on applying the new ecological working framework for overcoming violence and contributing to sustainable development, it is essential to highlight the great value of the product provided by the developed tool, that is, the strategic thinking guiding well-targeted, evidence-based and love-inspired decisions making processes considering violence’s cultural, direct and institutional dimensions. According to the Oxford dictionary, we can call it wisdom, defined as *“the ability to make sensible decisions and give good advice*

because of the experience and knowledge that you have” [8]. At this point, it is crucial to remind one of the statements adopted by the World Declaration on Higher Education:

*Article n° 6 (paragraph d): ultimately, higher education must aim at the creation of **a new non-violent society** consisting of highly motivated individuals, **inspired by love for humanity and guided by wisdom** [5].*

In the light of the Declaration, which remarks the need for promoting a culture of peace and nonviolence, wisdom is a highly needed resource to guide the creation of nonviolent societies. Consequently, the developed new working framework becomes a helpful tool for fulfilling the higher education demand for strengthening its contribution to nonviolence, becoming an invaluable working tool for enhancing sustainable development.

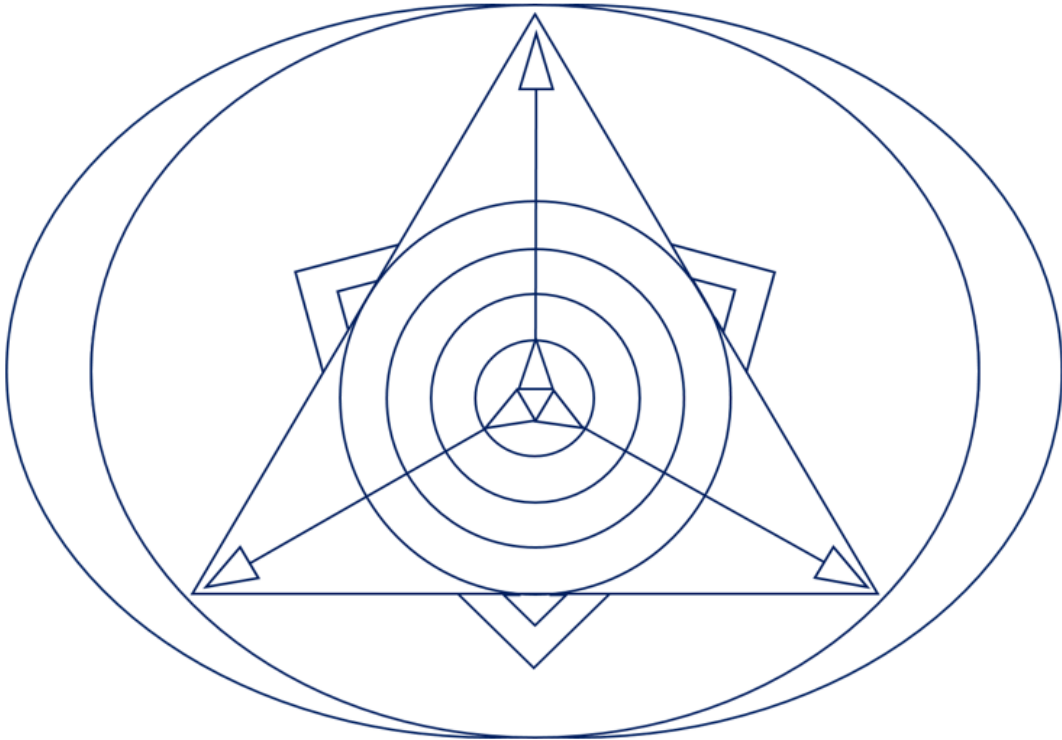
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Conclusions

Conclusiones



CONCLUSIONS

The developed new ecological working framework presented in chapter 1 was a valuable study tool for significantly improving the holistic, transdisciplinary understanding of the DFSA phenomenon and the intersection of the multiple vulnerability factors involved in female victimization by DFSA in leisure nightlife contexts.

For increasing the cultural support (chapter 2), it is important to consider the following main conclusions of this thesis. The dominant current leisure model in the nightlife context favours sexual interaction under the drug effects and opportunistic DFSA. Female victims experience diverse difficulties to self-acknowledged themselves as such because of the lack of support rooting on social questioning stemming from gender-based double standards regarding drug use and sexual interaction, the amnesia or difficulties for remembering the assault, the lack of injuries, the emotional or psychological harm and widespread myths conditioning social perception of DFSA. In this sense, four misconceptions affect thought about DFSA in leisure nightlife contexts, holding that (i) it prevails a proactive *modus operandi*; (ii) a high involvement of the so-called “date rape drugs”, (iii), that all victims of DFSA are sedated during the assault, and (iv) that assailants are usually people unknown to the victim. Altogether, difficulties victims experience negatively affect their decisions about reporting the assault and seek adequate help, favouring inadequate coping strategies like drug use, which can trigger incapacitating effects and increase their vulnerability to suffering new assaults. This process locks victims into spirals of cyclical re-victimization by opportunistic DFSA. Increasing social awareness of this form of sexual violence's severity is an urgent public health need to avoid its perpetuation. Within the Spanish context, young women are concerned by the risk of suffering sexual violence in leisure nightlife contexts, perceiving a lack of social support and victim-blaming. In turn, men believe more strongly that sexual assaults occur because of the victim's use of alcohol and are more willing to have sexual intercourse with someone unable to express consent because of drug effects.

The direct support approaches performed along this thesis (chapter 3) allowed concluding the need for a vertical preventive intervention within the educational system targeting the three personal elements of the routine activity theory (assailants, victims, and witnesses). This intervention was helpful for raising awareness of young students, from the university and pre-university levels, about the DFSA phenomenon in the youth leisure context. The application of the new ecological working framework as a knowledge source for designing this intervention and as a guide for articulating well-targeted actions showed its usefulness as a tool for preventive strategic thinking when facing the DFSA phenomenon. The new framework helped channel forensic science's potential role in preventive strategic thinking facing this form of

sexual violence. In this way, through the proactive view of forensic intelligence as a source essential for decision-making processes, forensic science can contribute to the civilian actions to crime prevention beyond the traditional retroactive focus limited to courtrooms and intelligence-led policing.

The institutional support initiatives (chapter 4) allowed concluding the helpfulness of analysing the situation of violence against women combined with the alcohol consumption rates, for making visible to authorities the need to incorporate a specific focus on female victimization by DFSA in official protocols designed to investigate alleged rape cases. Likewise, the development of a new educational model facing the DFSA phenomenon was a valuable preventive approach to avoiding both drug abuse and sexual violence, two problems severely affecting young people's quality of life. On the other hand, incorporating a new view on victimization by DFSA in official victimization surveys was a significant step for getting solid evidence about this form of violence, helpful for guiding decision-making processes targeting prevention. Furthermore, new analytical methodologies are required for improving the pre-treatment and forensic analysis of blood samples collected from alleged victims of DFSA. Likewise, it is important to empower young people to reach government authorities and institutions with awareness messages about the DFSA phenomenon using diverse communication channels.

The DFSA phenomenon's research horizons require to be expanded and overcoming the limited study focus centered on young women in leisure contexts. Novel studies (chapter 5) allowed showing the victimization of people underage during domestic cohabitation and alternative experience and contexts, such as labour, education, healthcare, women trafficking, and the daily life of people with intellectual disabilities.

The DFSA studies performed in this thesis contributed to sustainable development (chapter 6), responding to challenges from various 2030 Agenda's SDGs focused on achieving gender equality, human rights respect, and strong institutions.

As general conclusion, the developed new ecological working framework allowed channelizing the university higher education's positive influence potential and efficiently mobilizing it for generating support to solutions facing the DFSA phenomenon. Concretely, by helping guiding well-targeted, evidence-based decision-making processes facing the cultural, direct, and institutional dimensions of this form of sexual violence. Consequently, the new tool allowed enhancing university higher education's contribution to advancing towards achieving sustainable development challenges acknowledged by the 2030 Agenda.

El nuevo marco de trabajo ecológico presentado en el capítulo 1 constituyó una herramienta de estudio valiosa para mejorar significativamente la comprensión holística y transdisciplinar del fenómeno DFSA y de la intersección de los múltiples factores de vulnerabilidad involucrados en la victimización femenina mediante esta forma de violencia sexual en contextos de ocio nocturno.

Para aumentar el apoyo cultural (capítulo 2) es importante considerar las siguientes conclusiones principales de esta tesis. El modelo de ocio predominante actualmente en el contexto de la vida recreativa nocturna favorece la interacción sexual bajo los efectos de las drogas y las DFSA de tipo oportunista. Las mujeres víctimas de esta forma de violencia experimentan diversas dificultades para reconocerse a sí mismas como tal, debido a una falta de apoyo social anclada en el cuestionamiento derivado de la existencia de un doble juicio de género en relación al consumo de drogas y a la interacción sexual. A esto se suman la amnesia o la dificultad para recordar la agresión, la ausencia de lesiones, el daño emocional o psicológico y una serie de mitos generalizados que condicionan la percepción social sobre el fenómeno DFSA. En este sentido, cuatro mitos o conceptos erróneos afectan el pensamiento social sobre las DFSA en contextos de ocio nocturno, sosteniendo que (i) prevalece un *modus operandi* proactivo, (ii) una alta participación de las llamadas “drogas de violación en citas”, (iii), que todas las víctimas de DFSA están sedadas durante la agresión, y (iv) que los agresores suelen ser personas desconocidas para la víctima. En su conjunto, las dificultades experimentadas por las víctimas afectan negativamente a sus decisiones sobre denunciar la agresión y buscar ayuda, favoreciendo estrategias de afrontamiento inadecuadas, como el consumo de drogas, que puede desencadenar efectos incapacitantes y aumentar la vulnerabilidad de las víctimas a sufrir nuevas agresiones. Este proceso encierra a las víctimas en espirales de re-victimización cíclica mediante DFSA oportunista. De este modo, aumentar la sensibilización social sobre la gravedad de esta forma de violencia sexual constituye una necesidad urgente de salud pública para evitar su perpetuación. De hecho, en el contexto español, las mujeres jóvenes están preocupadas por el riesgo de sufrir violencia sexual en contextos de ocio nocturno, percibiendo una falta de apoyo social, así como la culpabilización de las víctimas por la violencia sexual sufrida. A su vez, los hombres creen que las agresiones sexuales ocurren debido al uso de alcohol por parte de la víctima y están más dispuestos a tener relaciones sexuales con alguien incapaz de expresar su consentimiento en la esfera sexual como consecuencia de los efectos producidos por las drogas.

Las aproximaciones a la generación de apoyo directo implementadas a lo largo de esta tesis (capítulo 3) permitieron concluir la necesidad de una intervención preventiva de carácter vertical dentro del sistema educativo y dirigida a los tres elementos personales de la teoría de

la actividad rutinaria (agresores, víctimas y testigos). Esta intervención constituyó una aproximación útil para sensibilizar al alumnado de los niveles universitario y preuniversitario sobre el fenómeno DFSA en el contexto de ocio juvenil. La aplicación del nuevo marco de trabajo ecológico como fuente de conocimiento para el diseño de la intervención y como guía para la articulación de acciones preventivas bien dirigidas mostró la utilidad de la nueva herramienta desarrollada en esta tesis como un instrumento para el pensamiento estratégico preventivo frente al fenómeno DFSA. Asimismo, el nuevo marco ayudó a canalizar el papel potencial de la ciencia forense en el pensamiento estratégico preventivo frente a esta forma de violencia sexual. De este modo, a través de la visión proactiva de la inteligencia forense como fuente esencial para los procesos de toma de decisiones, la ciencia forense puede contribuir a las acciones civiles para la prevención del delito, más allá del enfoque retroactivo tradicional limitado a los tribunales de justicia y a la vigilancia policial dirigida por inteligencia forense.

Las iniciativas de soporte institucional (capítulo 4) permitieron concluir la utilidad de analizar la situación de violencia contra las mujeres en combinación con las tasas de consumo de alcohol, para hacer visible, ante las autoridades, la necesidad de incorporar un enfoque específico sobre la victimización femenina mediante DFSA en los protocolos oficiales para la investigación del delito de violación. Asimismo, el desarrollo de un nuevo modelo educativo frente al fenómeno DFSA supuso un valioso enfoque preventivo para evitar tanto el abuso de drogas como la violencia sexual, dos problemas que afectan gravemente la calidad de vida del colectivo joven. Por otro lado, la incorporación de una nueva visión sobre la victimización mediante DFSA en las encuestas oficiales de victimización constituyó un paso significativo para obtener evidencia sólida sobre esta forma de violencia, un conocimiento fundamental para orientar los procesos de toma de decisiones dirigidos a la prevención. Además, son necesarias nuevas metodologías analíticas para mejorar el pretratamiento y análisis forense de muestras de sangre procedentes de presuntas víctimas de DFSA. Asimismo, es importante empoderar al colectivo joven para que haga llegar a las autoridades e instituciones gubernamentales mensajes de sensibilización frente al fenómeno DFSA a través del aprovechamiento de diversos canales de comunicación.

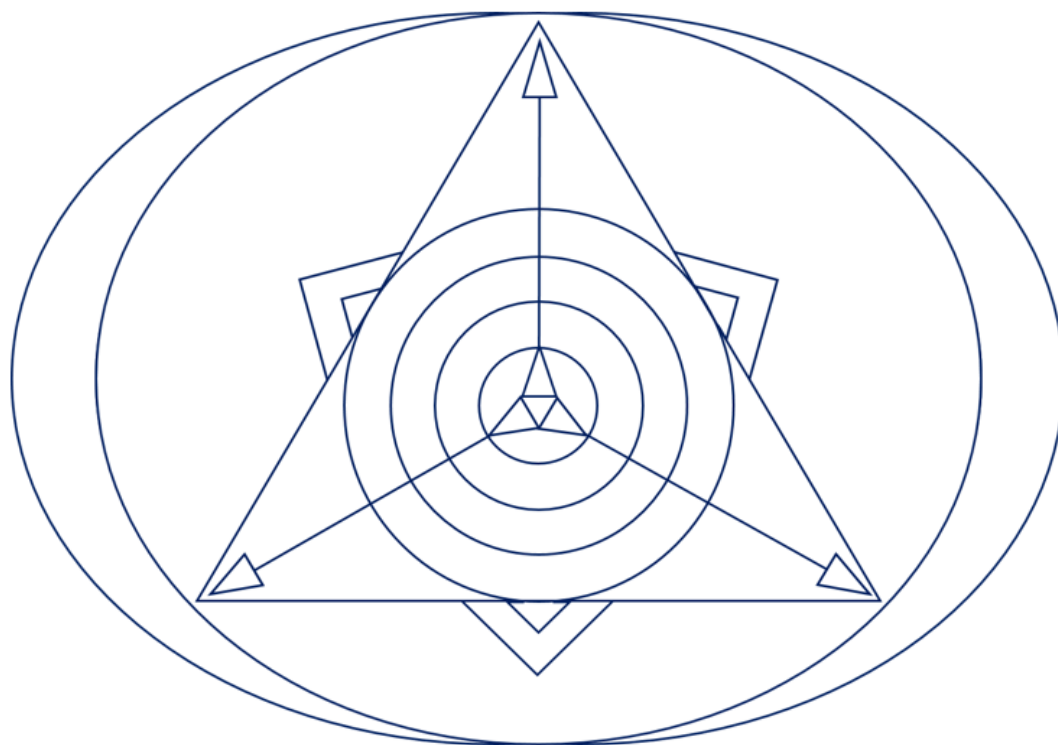
Es necesario expandir los horizontes de investigación del fenómeno DFSA y superar un enfoque de estudio limitado a la victimización de mujeres jóvenes en contextos de ocio. Los estudios innovadores en esta línea (capítulo 5) permitieron observar la victimización de personas menores de edad en situaciones de convivencia doméstica, así como otras experiencias y contextos de victimización, como el ámbito laboral, educativo, sanitario, la trata de mujeres y la vida cotidiana de personas con discapacidad intelectual.

CONCLUSIONES

Los estudios sobre DFSA realizados a lo largo de esta tesis han contribuido y contribuirán al desarrollo sostenible (capítulo 6), respondiendo a diversos objetivos de desarrollo sostenible de la Agenda 2030 centrados lograr la igualdad de género, el respeto a los derechos humanos y el fortalecimiento institucional.

Como conclusión general, el nuevo marco de trabajo ecológico desarrollado ha permitido la canalización del potencial de influencia positiva de la educación superior universitaria y su movilización eficiente para la generación de apoyo a soluciones frente el fenómeno DFSA. Concretamente, guiando procesos de toma de decisiones bien dirigidos y basados en evidencia frente a las dimensiones cultural, directa e institucional de esta forma de violencia sexual. En consecuencia, la nueva herramienta desarrollada ha hecho posible potenciar la contribución de la educación superior universitaria al logro de los desafíos de desarrollo sostenible reconocidos por la Agenda 2030.

Annexes





AGENDA

7^a Reunión Técnica del Grupo de Trabajo de la *Iniciativa para la Encuesta de Victimización Delictiva para Latinoamérica y el Caribe (VICLAC)*

22 y 23 de octubre de 2019

Ciudad de México, México



Miércoles, 23 de octubre de 2019

08:30 – 09:00	Registro de participantes
9:00 – 9:15	Sesión interactiva (grupal)
9:15 – 12:00	<p>Propuestas de innovaciones en la Iniciativa VICLAC al Grupo de Trabajo</p> <p>Modera: Sra. Luisa Sánchez, Centro de Excelencia, UNODC México</p> <ul style="list-style-type: none"> ○ Sr. Daniel Escobar, Grupo Asesor de Género y Derechos Humanos, UNODC México ○ Sr. Michael Jandl, UNODC HQ <ul style="list-style-type: none"> • Mayor enfoque de género y en grupos vulnerables – interseccionalidad (10 min) <ul style="list-style-type: none"> - Discusión: 20 min • Condición de la víctima de estar bajo los efectos del alcohol o drogas (estado de mayor vulnerabilidad) durante la victimización en los delitos de agresiones/lesiones y violencia sexual (10 min) <ul style="list-style-type: none"> - Discusión: 20 min • Medición del momento de la ocurrencia (día de la semana) en todos los delitos (10 min) <ul style="list-style-type: none"> - Discusión: 20 min • Módulo sobre acoso sexual (10 min) <ul style="list-style-type: none"> - Discusión: 20 min • Módulo sobre ciberdelincuencia (10 min) <ul style="list-style-type: none"> - Discusión: 20 min <p style="text-align: right;">(Servicio de café disponible durante toda la mañana)</p>
12:00 – 13:00	<p>Iniciativa de Módulo de Encuesta ODS 16 (UNODC, OCNUDH, PNUD)</p> <p>Modera: Sra. Salomé Flores, Centro de Excelencia UNODC</p> <ul style="list-style-type: none"> - Sr. Gergely Hideg, Consultor experto
13:00 – 14:30	Almuerzo
14:30 – 15:30	Sobreviviendo a una Encuesta de Victimización (sesión grupal)
15:30 – 16:00	<ul style="list-style-type: none"> • Ronda de conclusiones por parte de los y las participantes • Próximos pasos de la Iniciativa VICLAC

SUMMARY OF MY PARTICIPATION IN THE UN75 INITIATIVE

THE PARTICIPATION OF YOUNG PEOPLE IN THE GLOBAL PROCESSES OF THE UNITED NATIONS FOR BUILDING A BETTER WORLD

My participation in the UN75 initiative involves two closely related dialogues:

- **On the one hand**, the feedback form attached to this document corresponds to **the first dialogue**, which consists of a call for action to encourage the participation of young women and men as critical agents of change for the creation of a better world. The video corresponding to this **first dialogue is available through the link**:

<https://www.youtube.com/watch?v=Cwvi-fSSLbE&t=2s>

This first dialogue **highlights the capacity for action of youth and their potential for positive influence to deal with social issues**. In this sense, my vision for 2045 is a world where young people were empowered as full-fledged partners in the global efforts and processes of the United Nations to build a better world.

In order to achieve this vision, through this first dialogue, I attracts attention to the potential of **the University as an excellent actor able to catalyze the youth potential** and capacity for action.

- **On the other hand**, **the second dialogue** of my participation in the UN75 initiative consists of another video, which is **online available through the link**:

<https://www.youtube.com/watch?v=cJaVeAo2-iA&t=4s>

This second dialogue makes **a call for attention on need to increase social awareness of the severity of female victimization by opportunistic drug-facilitated sexual assaults**. Information contained in this video comes from a scientific article included within my doctoral thesis and recently published in the journal "*Forensic Science International*". This article is online available through the link:

https://www.sciencedirect.com/science/article/pii/S0379073820303224?dgcid=rss_sd_all

- **Therefore, my participation in UN75 is aimed to be a practical example in itself of the high potential and capacity for action of youth to influence the community positively.**

In this sense, my participation pretends to honor the phrase:

"You must be the change you wish to see in the world".

In order to **make visible this youth potential for positive impact** I selected a specific issue. A form of sexual violence that is mainly affecting the youth community itself: the victimization of women by opportunistic drug-facilitated sexual assault.

My participation in the UN75 initiative results from the intellectual efforts realized as one more student within the university context.

- In this sense, my contribution was possible through **an alignment between the global challenges** acknowledged by the 2030 Agenda (concretely, in this occasion, the target 5.2, which is focussed on the elimination of all forms of violence against women and girls) **and the capacity of youth for influencing the world positively.**

Facing this evidence, the UN must approach the university to achieve an alignment between global challenges and youth efforts in the university context. Indeed, the University is an excellent actor to catalyze the youth's potential, acting as a:

- **Connecting agent between youth and the UN.**
- **Youth voice amplifying agent.**
- **Inspiring agent of youth actions related to sustainable development.**

The alignment between global challenges of the UN and student efforts at the university context would suppose significant advantages:

1. It would contribute to achieve a world where young people were empowered as full-fledged partners in the global efforts and processes of the UN to build a better world.

2. It would result in a new youth generation that we could name as “SD generation” (based on the acronym of Sustainable Development Goal), which would be characterized by paying attention to social needs and challenges acknowledged at the global level and act in consequence to face them.

3. It would be paradigmatic for the revitalization of the education university process due to it would improve the motivation of students for developing their daily efforts for studying and learning. These efforts would not be only focussed on overcoming successive tests but the daily work of students would become an act of social responsibility.

4. It would help us to revitalize the university’s role of shaping a citizenship commitment to social responsibility and awareness about social needs.

Madrid, Spain, at 14th September 2020.

Firmado por PREGO MELEIRO, PABLO
(FIRMA) el día 18/09/2020 con un
certificado emitido por AC DNIE 004

Pablo Prego Meleiro

SDGeneration
Sustainable Development

Youth In action overcoming global challenges

SDGeneration
Sustainable Development

Acción Juvenil para superar los desafíos globales

LOGOTIPOS



#242c55



#489ad4



colors

COLORES

Franklin Gothic Demi

**ABCDEFGHIJKLMN OPQRSTUVWXYZ
abcdefghijklmnopqrstu vwxyz
0123456789**

Franklin Gothic Regular

**ABCDEFGHIJKLMN OPQRSTUVWXYZ
abcdefghijklmnopqrstu vwxyz
0123456789**

Franklin Gothic Italic

**ABCDEFGHIJKLMN OPQRSTUVWXYZ
abcdefghijklmnopqrstu vwxyz
0123456789**

TIPOGRAFÍAS



DIMENSIONES



VARIANTES DE COLOR



PSICOLOGÍA DEL COLOR

III. OTRAS DISPOSICIONES

MINISTERIO DE DERECHOS SOCIALES Y AGENDA 2030

15662 *Resolución de 24 de noviembre de 2020, del Instituto de la Juventud, por la que se conceden los Premios Nacionales de Juventud para el año 2020.*

Por Resolución de 28 de julio de 2020, del Instituto de la Juventud, se convocaron los Premios Nacionales de Juventud para el año 2020 (BOE de 20 de agosto de 2020). En aplicación de lo indicado en los apartados octavo y décimo de la citada convocatoria, vista la propuesta formulada por el Jurado, esta Dirección General resuelve:

Primero.

Conceder un único premio de 2.000 euros, en cada una de las siguientes categorías:

1. Compromiso Social a doña Alexandra Daiana Floare.
2. Cultura a don José García Ruiz.
3. Medio Ambiente a don Rodrigo Beltrán Cortijo.
4. Deporte a doña Aida de Miguel Simón.
5. Ciencia y Tecnología a doña María González Manso.
6. **Derechos Humanos a don Pablo Prego Meleiro.**

Segundo.

Conceder una mención honorífica, sin dotación económica, en la categoría de Ciencia y Tecnología a don Álvaro José Solaz García.

Tercero.

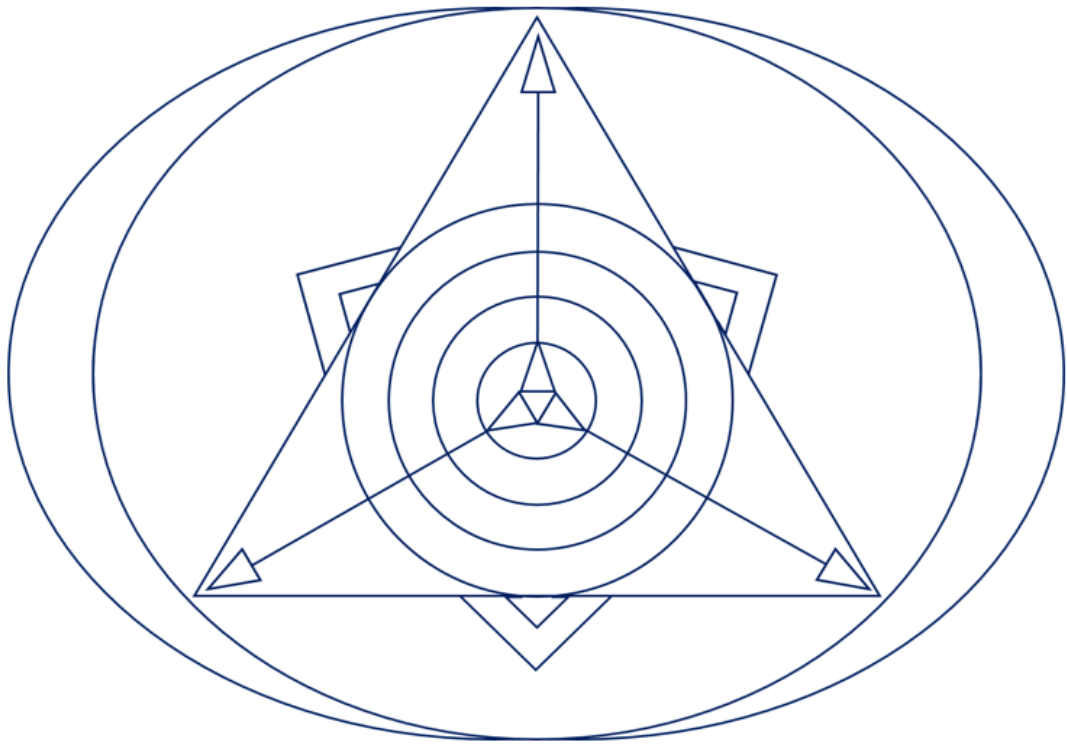
Desestimar el resto de las solicitudes admitidas en la convocatoria.

Cuarto.

Contra esta resolución, que agota la vía administrativa, podrá interponerse en el plazo de un mes, recurso potestativo de reposición ante el Director General del Instituto de la Juventud de acuerdo con lo dispuesto en los artículos 123 y 124 de la Ley 39/2015, de 1 de octubre, del Procedimiento Administrativo Común de las Administraciones Públicas, o también, en el plazo de dos meses, recurso contencioso administrativo, según los artículos 9, 45 y 46 de la Ley 29/1998, de 13 de julio, de la Jurisdicción Contencioso-Administrativa, ambos plazos contados desde el día siguiente a su publicación.

Madrid, 24 de noviembre de 2020.–La Directora General del Instituto de la Juventud, María Teresa Pérez Díaz.

Agradecimientos



En cierta ocasión, escuché a alguien decir que hacer una tesis doctoral es como participar en una carrera de fondo. En mi opinión, esta es una muy buena comparación de lo que supone hacer un doctorado. Al menos, esa es mi conclusión al observar en retrospectiva los pasos dados para hacer realidad este trabajo. Sin duda, para completar el recorrido y llegar en buen estado a la meta final, es necesario un buen entrenamiento previo, así como un fuerte espíritu de superación, y dosis elevadas de constancia y vitalidad. Ahora bien, hay otro aspecto muy relevante. Algo especialmente importante cuando hablamos de un largo viaje o de una gran travesía, como es el caso de una tesis, situaciones en las cuales no suelen faltar momentos de dificultad, desorientación o incertidumbre. Y es que, generalmente, las grandes expediciones no suelen hacerse solo o de forma individual, sino más bien en equipo, en compañía de otras personas. Me permito añadir este matiz de recorrido colectivo a la visión de la tesis como una carrera de fondo. En este sentido, siempre me he emocionado ver cómo los espectadores de una competición deportiva, de una carrera ciclista, por ejemplo, animan a los deportistas a seguir adelante, a no rendirse, ni desmayar. Mi emoción es aún mayor al observar la empatía que subyace al trabajo en equipo. En el ejemplo del ciclismo, al ver cómo el equipo técnico abastece a sus propios corredores, proporcionándoles ayuda y recursos a lo largo de su odisea deportiva. Colaboración, trabajo en equipo, edificación mutua, solidaridad, puro altruismo... Existen modos muy diversos, y más o menos profundos, de expresar esta sintonía colectiva. Sea cual sea el término empleado, lo cierto es que se trata de una conducta digna de gratitud. Por supuesto, también en el contexto de una tesis doctoral, aunque en este caso la carrera transcurra sentado durante horas frente a un escritorio. Por eso, no puedo cerrar esta tesis sin agradecer profundamente este componente humano, esencial para alcanzar la meta final. Un componente con múltiples rostros.

Gracias a mis directores de tesis por acompañarme a lo largo de este recorrido. Carmen, Gemma y Óscar, gracias por vuestra disponibilidad y ayuda, por compartir vuestro conocimiento y experiencia conmigo, brindándome múltiples oportunidades y buenos consejos para construir juntos esta tesis, optimizarla y sacarle el mejor fruto posible al trabajo realizado. Gracias por tener en cuenta, desde el principio, mi deseo de ir más allá de lo habitual en las ciencias forenses y por darme la libertad para profundizar en una dimensión alternativa y más social dentro de esta rama del conocimiento. Carmen y Gemma, muchas gracias por vuestro trabajo en equipo y por impulsar, desde la universidad, tantos proyectos y nuevas oportunidades de investigación y financiación para potenciar el crecimiento de la ciencia y del alumnado. Gracias por vuestro dinamismo y por vuestros esfuerzos para fortalecer el sentido de la educación superior al servicio de la sociedad. Carmen, tu talante innovador ha sido un ingrediente excepcional para

ayudarme a vislumbrar y madurar nuevas ideas fundamentales en este trabajo. Muchas gracias por tu paciencia y por tu disposición a escuchar. Gemma, muchas gracias por tu dinamismo, por tu visión meticulosa y por tu capacidad de crítica constructiva. Sin duda, han sido elementos decisivos para pulir este trabajo y sacar lo mejor de él. Óscar, muchas gracias por tu disposición a guiar esta tesis doctoral desde el Instituto Nacional de Toxicología y Ciencias Forenses, apostando por la investigación y la innovación, y haciéndome un hueco en el Instituto. Gracias por combinar tu labor diaria con la docencia, y por tu cercanía y familiaridad durante todo el tiempo que pasé en el Instituto. Muchas gracias a los tres.

El Grupo CINQUIFOR, de Investigación en Ciencias Químicas y Forenses, ha sido el punto de partida de este gran recorrido en forma de tesis doctoral. Gracias a todos los componentes del Grupo, en su totalidad, por vuestros ánimos y buenos consejos. Gracias por vuestra amistad y por vuestro inmenso calor humano. Mi agradecimiento va dirigido tanto a quienes permanecen en el Grupo a día de hoy, como a las muchas personas que han ido pasando por el mismo y con las que he convivido desde mi llegada en 2014. Sin duda, sería necesaria otra tesis aún más larga para rememorar a tantas personas y tantos buenos momentos. Félix, muchas gracias por tu calurosa acogida desde el momento en el que llegué a Alcalá. Gracias por tantos buenos consejos sobre cómo sacar adelante la tesis sin morir en el intento, y por siempre estar disponible para echarme una mano, ya sea resolviendo dudas burocráticas, ayudándome con la mudanza o prestándome tu bici. Diogo, eres todo un ejemplo de concentración y capacidad de esfuerzo, pero te agradezco especialmente que hayas traído al Grupo una pizca de alegría y humor, estupenda para bromear de vez en cuando, y levantar el ánimo y las ganas de trabajar. Javi, otro gran ejemplo de trabajo ordenado y esfuerzo eficiente. Sin duda, tú también has contribuido notablemente a mi administración periódica de las dosis de buen rollo necesarias para sacar adelante la tesis sin volverse loco. Gracias por tu amistad y por tu buena labor como gestor del Grupo. Al hablar de la locura de las ciencias forenses, no puedo dejar de recordar a otro de mis grandes maestros y amigos en el arte de las tesis doctorales. Matías, muchas gracias por todo tu apoyo durante mis primeros pasos en el doctorado, gracias por tu buen humor y por estar siempre dispuesto a echarme una mano desde el laboratorio de ciencias. Precisamente, el laboratorio de ciencias es un lugar especial a rememorar en este recorrido. Ahí di mis primeros pasos en el grupo de la mano de otro de los profesores que más tiempo me ha dedicado en el transcurso de mi tesis doctoral. Muchas gracias, Fernando, por tu disponibilidad para ayudarme a adoptar soluciones a diversas dificultades de trabajo, ya sea enseñándome a utilizar nuevos softwares de análisis de datos, reflexionando alternativas o reuniéndonos con otros profesionales. Asimismo, el otro gran varón del laboratorio de ciencias es, sin duda, Víctor.

Amigo amante de los animales y de la divulgación científica, gracias por tu compañerismo y proximidad, y por poner una y otra vez a disposición del Grupo tus conocimientos técnicos y recursos audiovisuales. Aunque hasta ahora solo he mencionado a hombres, lo cierto es que CINQUIFOR me ha brindado buenas amigas y excelentes compañeras de laboratorio. Gracias, Valentina, por tu carácter ameno, que, junto con tu practicidad y tu visión analítica de la realidad, me ha ayudado a conocer mejor las dinámicas de trabajo dentro del Grupo. Marzia y Heidi, recuerdo con mucho cariño el curso en el que coincidimos durante vuestras estancias en el Grupo. Muchas gracias por vuestro compañerismo y por los buenos ratos juntos. Sofía, tu paso por el Grupo fue una toda una fortuna para quienes coincidimos contigo. Muchas gracias por tu alegría y tu amistad sincera, tan necesarios para sobrellevar sin desmayar el día a día de la investigación. Esto es algo que poco a poco aprenderán quienes ahora mismo se encuentran iniciando este recorrido. En este sentido, Irantzu, gracias por tu excelente trabajo en el marco del proyecto sobre violencia sexual. Tu colaboración ha contribuido a revitalizar el proyecto y estoy seguro de que es el preámbulo de una buena tesis doctoral. Asimismo, muchas gracias a todos los gestores o técnicos del Grupo con los que he coincidido durante este recorrido. Adrián, Jaime, Javi, Laura e Ignacio, vuestro trabajo ha sido esencial para mantener a flote el barco y seguir navegando.

Paralelamente, quiero agradecer profundamente al profesor Luis Sordo, de la Universidad Complutense de Madrid, la ayuda recibida para sacar adelante el segundo trabajo incluido en el Capítulo 2 de esta tesis. Muchas gracias por tu ayuda Luis. Igualmente, gracias también al profesor Héctor del Castillo, así como a las profesoras Carmen Figueroa, M^a Concepción Alonso y M^a Gloria Quintanilla, de la Universidad de Alcalá, por la ayuda prestada puntualmente a lo largo de esta tesis doctoral.

Por otra parte, también quiero agradecer profundamente la colaboración de todas aquellas personas con las que trabajé en el transcurso de las estancias de investigación realizadas en el marco de esta tesis. Por un lado, al recordar los días disfrutados en el Servicio de Química del Departamento de Madrid del Instituto Nacional de Toxicología y Ciencias Forenses, quiero rememorar especialmente a Begoña, Daniel, Elsa, Antonio Lázaro, Sergio, María, Concha, Ros, Antonio, Carmen y Sara. Un agradecimiento especial para Daniel Gutiérrez y Elsa, por su calidez y compañerismo durante mi estancia. Por otro lado, respecto a mi estancia en la Centro de Excelencia para Información Estadística de Gobierno, Victimización y Justicia (CdE), quiero recordar y agradecer el apoyo y el compañerismo recibido por parte de Salomé, Luisa, Gabriela, Teresa, Roberto, Héctor, Giada, Paulo, Naty, Ana Karen, Alphonse, David, Hanna y Carmen. En este sentido, agradezco especialmente a Luisa Sánchez su inmensa ayuda y colaboración y su

buen trato desde el Laboratorio de Victimización del CdE. Igualmente, agradezco a Héctor Duarte su calurosa acogida y su amistad a mi llegada al Centro. Asimismo, en relación a mi estancia en el Proyecto Género y Drogas de UNODC, agradezco la ayuda y el apoyo prestado por parte de Violeta, Isabel y Helen.

Por último, pero no por ello menos importante, quiero reconocer y dar las gracias a las personas más íntimas y allegadas, aquellas que me acompañan en el día a día, y que, por supuesto, también lo han hecho en el transcurso de esta tesis doctoral.

Eli, muchas gracias por tu gran amor, que resulta en una fuente increíble de inspiración. Gracias por acompañarme tan de cerca en este recorrido fabuloso, escuchando con paciencia mis teorías e ideas disparatadas, ayudándome tantas y tantas veces a seguir avanzando, a mejorar diseños o incluso elaborándolos tú por completo, y a hacerme ver la necesidad del descanso. Es cierto lo que dices, ésta es también tu tesis: es nuestra tesis.

Papá y Mamá, este trabajo se suma a lo mucho que me habéis proporcionado a lo largo de toda mi vida y a lo mucho que tengo que agradeceros. El completar esta tesis constituye un resultado de vuestros buenos esfuerzos como padres. Muchas gracias por vuestra guía y ayuda, sin las cuales no hubiese llegado hasta este punto. Por eso, esta tesis también es vuestra.

Carlos, a los dos nos ha dado la vena escritora, aunque en registros diferentes, por ahora. Creo que, en gran medida, tengo que “agradecerte” a ti este trabajo ingente. Como hermano mayor, tendrías que haberme impedido que me metiese en el lío de hacer una tesis. Seguro que desde niño has influido en mí para que también yo escriba, y escriba sobre ciencia. Por esa razón, esta tesis también es tuya.

Avoa Perfecta e avoa Antonia, moitas grazas pola vosa tenrura e os vosos coidados e agarimos ao longo dos anos, que contribuíron a conformarme para axudarme a ver o mundo e a cavilar nas cousas do mesmo xeito que plantexo neste traballo. Vos sodes o xermolo deste proxecto, polo que esta tese tamén é vosa.

Robin, amigo de toda a vida, compañeiro de estudos e de troula, grazas pola túa fonda amizade, que tamén durante o devenir desta tese axudoume a sacar adiante o traballo, a non deixar de ver o bo, e a entender que as cousas son só iso, *Cousas*.

Liz, Andrea y los Albertos, muchas gracias por vuestro profundo apoyo e interés. Gracias por tus entomadas y flautas, Liz, y por tu inmensa y decisiva ayuda durante mi estancia en CDMX Alberto. Andrea, muchas gracias por tu gran apoyo con el diseño del nuevo logotipo y por tu sentido del humor.

