



Criminological differences between contact-driven and online-focused suspects in online child sexual grooming police reports

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ABSTRACT

Background: Differences exist between contact and noncontact-driven online child sexual abuse offenders; however, there is still a notable lack of empirical studies with police samples from non-English speaking countries, including Spain.

Objective: We address this gap by analyzing the criminological characteristics of online child sexual grooming (OCSG) suspected offenders from de-identified law enforcement investigations in Spain.

Participants and setting: We anonymously coded data provided by Spanish law enforcement agencies from 257 OCSG cases (i.e., unique chat logs between a suspect and minor) extracted from 98 police reports with index investigation years from 2008 to 2021. A total of 101,391 messages were analyzed.

Methods: Three distinct datasets were created: 257 OCSG cases, 120 unique suspects (79 online-focused, 41 contact-driven), and 234 unique victims. Each dataset focused on different criminological variables for analysis, such as grooming strategy, motivation, and victim high-risk behaviors.

Results: There were no significant differences between suspects on gender, age, or criminal offense history. Contact-driven suspects were more likely to use positive rapport ($\phi = 0.18$), send unprompted sexually explicit images of themselves ($\phi = 0.19$), and offer something in exchange ($\phi = 0.25$). Victims of contact-driven individuals were more likely to be male ($\phi = 0.52$) and offer something in exchange for sex or sexually explicit images ($\phi = 0.18$). Victims of online-focused individuals were more likely to be younger ($r = 0.26$).

Conclusions: These findings suggest criminological differences in the online grooming strategies between contact-driven and online-focused suspected offenders in Spain.

1. Introduction

Child sexual exploitation (CSE) is a form of child sexual abuse that encompasses a wide range of offenses occurring both in person and through digital means (Beckett, Holmes, & Walker, 2017; Seigfried-SPELLAR & Soldino, 2020), such as child sex trafficking, child sex

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tourism, sextortion, online enticement, child sexual solicitation, and child sexual abuse material (CSAM). The prevalence of CSE has been escalating globally in recent years, further exacerbated by the COVID-19 pandemic (European Union Agency for Law Enforcement Cooperation [Europol], 2020), presenting a significant challenge (Europol, 2022; International Centre for Missing & Exploited Children [ICMEC], 2017; United States Department of Justice [DOJ], 2016) recognized as one of the most critical criminal threats, prompting its inclusion as one of the priorities for Europol's 2022–2025 European Union Policy Cycle (Europol, 2022).

Technological advancements facilitate CSE and enable online child sexual grooming (OCSG) offenders to chat simultaneously with any number of children, anywhere, at any time (de Santisteban, del Hoyo, Alcázar-Córcoles, & Gámez-Guadix, 2018; Malesky, 2007; Quayle, Allegro, Hutton, Sheath, & Lööf, 2014; Webster et al., 2012; Winters, Kaylor, & Jeglic, 2017). These offenders rely on several grooming strategies to manipulate the child and gain their trust, many of which existed before the Internet (e.g., deception, enticements, secrecy) but have changed either in scope or timing (cf., Ringenberg, Seigfried-Spellar, Rogers, & Rayz, 2022). The affordability, accessibility, and anonymity (Cooper, 1998) offered by Information and Communications Technology (ICT) provides a "cloak of safety" (Seigfried-Spellar, 2011, 2013), which allows OCSG offenders to "spray and prey" (i.e., message multiple victims simultaneously; Seigfried-Spellar et al., 2019, p. e10), thereby increasing their chances of identifying a vulnerable victim (de Santisteban et al., 2018; Malesky, 2007; Quayle et al., 2014; Seigfried-Spellar et al., 2019; Webster et al., 2012; Winters et al., 2017) and obtaining a desired goal (e.g., have sexual physical contact, acquire CSAM, engage in cybersex; National Center for Missing & Exploited Children [NCMEC], 2017).

OCSG was introduced in the Spanish Criminal Code in 2010 (Organic Law 5/2010 of June 22), punishing those who contacted a child under the age of 13 through ICT to arrange a meeting to commit a contact sexual offense (provided that such proposal was accompanied by material acts aimed at approaching the child). In 2015, Organic Law 1/2015 of March 30 raised the age of sexual consent to 16 years, thereby expanding the legal definition of OCSG to include victims aged 13 to 15. This amendment to the Criminal Code also introduced provisions for criminalizing individuals who contacted a person under the age of 16, not only to arrange a physical meeting but also with the exclusive intent of obtaining CSAM. Unlike other countries, Spanish law enforcement agencies do not allow decoy victims in OCSG cases due to concerns that this violates fundamental rights and the perception of undercover agents as *provocateurs* (Bueno de Mata, 2017; Expósito López, 2015). Since 2015, the number of reports of OCSG incidents has increased by 109.2 %, with 408 police reports filed in 2022 (Ministerio del Interior, 2023). In 2022, there were 404 reported victims under the age of 16, and a total of 95 males and four females were arrested for this crime by Spanish law enforcement (Ministerio del Interior, 2023). In a recent study, Ribera-Gutiérrez, Reneses, Gómez-Dorado, Serranos-Minguela, and Bueno-Guerra (2023) analyzed Spanish court sentences related to OCSG. The 20 convicted adult men had an average age of 35 years, were predominantly Spanish, had no prior acquaintance with the victims, and had no criminal records. The mean age of the victims was 13.97 years, with males representing 53.8 % of the total sample. In 90 % of the cases, the offenders proposed an in-person meeting with the victims.

Young people's vulnerabilities to Online Child Sexual Grooming.

When examining the vulnerability of young people to OCSG, research by Whittle, Hamilton-Giachrits, Beech, and Collings (2013) emphasized that adolescents are particularly susceptible to this phenomenon. Several factors contribute to their vulnerability, such as being manipulated to engage in high-risk online behaviors, having high levels of internet access, and limited parental oversight in their internet use (Calvete et al., 2021; Ribera-Gutiérrez et al., 2023; Whittle et al., 2013). For example, Calvete, Cortazar, et al. (2021) found that many youths respond to sexual solicitations by actively engaging in sexual interactions with the offenders. In addition, Finkelhor, Turner, Colburn, Mitchell, and Matthews (2023) highlighted that most cases involving Image-Based Sexual Exploitation and Abuse of Children (IBSECAC) involved young people self-producing sexual images of themselves. In both cases, the sharing occurs in an abusive situation characterized by unequal power dynamics.

In 2022, WhatsApp and Instagram emerged as the most popular social media platforms across different generations in Spain, including Millennials, Generation Z, and Generation Alpha (IAB Spain, 2022). The prevalence of ICT usage among children in Spain is also significant, as 93.1 % of children aged 10 to 15 use a computer, while 94.9 % use the Internet and 69.5 % utilize a mobile phone (Instituto Nacional de Estadística [INE], 2022). Girls showed higher rates of computer and mobile phone usage; however, boys exhibited higher Internet usage. In addition, girls received more sexual solicitations (Calvete, Cortazar, et al., 2021; Gámez-Guadix & Mateos-Pérez, 2019; Montiel, Carbonell, & Pereda, 2016), but were less likely than boys to respond to such solicitations and engage in sexual interaction behaviors with adults (Calvete, Cortazar, et al., 2021). The use of ICT increases with age (INE, 2022), and the percentages of adolescents receiving sexual solicitations also appear to increase with age (Calvete, Cortazar, et al., 2021; Montiel et al., 2016).

Estimating the prevalence of online child sexual grooming (OCSG) victimization can be challenging (Webster et al., 2012). Montiel et al. (2016) reported that 39.5 % of Spanish adolescents studied experienced online sexual victimization, while 17.2 % reported being groomed by adults. Similarly, a study by Villacampa and Gómez (2017) in Catalonia found that 10.4 % of surveyed youth reported attempts of communication by adults using ICT, and 12.3 % reported peer grooming. Online survey results from Save the Children revealed a prevalence rate of 21.5 % among Spanish youth, with an average age of 15 at the time of victimization (Save the Children, 2019). In Calvete et al. (2021), the prevalence rates of sexual solicitation by adults ranged from 13.9 % to 17.8 %, with only 5.4 % reporting engagement in sexualized interactions with adults. Most recently, a 13-month longitudinal study by Ortega-Barón et al. (2022) found nearly 23 % of the sample reported experiencing sexual solicitation, while 14 % reported engaging in some form of sexual interaction with adults.

2. Types of online child sexual grooming offenders

Individuals involved in online child sexual abuse use ICT at some point during their criminal behavior, but their motivations and

ultimate goals can vary significantly among different groups. It is essential to recognize that online child sexual abuse offenders, particularly those who engage in OCSG, do not form a homogeneous group (Babchishin, Hanson, & Hermann, 2011; Broome, Izura, & Lorenzo-Dus, 2018; Henshaw, Ogloff, & Clough, 2017; Riberas-Gutiérrez et al., 2023; Seigfried-Spellar & Soldino, 2020; Webster et al., 2012). Various classification systems exist for these individuals, including dichotomous models and typologies with multiple profiles of OCSG offenders.

Numerous studies have consistently demonstrated the existence of differences between contact-driven and noncontact-driven online offenders (Briggs, Simon, & Simonsen, 2011; Chiu, Seigfried-Spellar, & Ringenberg, 2018; Crowell et al., 2022; McCarthy, 2010; McManus, Almond, Cubbon, Boulton, & Mears, 2016; Merdian et al., 2018; Quayle et al., 2014; Soldino, Carbonell-Vayá, & Seigfried-Spellar, 2019). Contact-driven individuals, also known as mixed or dual offenders, exhibit a desire to engage in contact sexual offenses with minors. However, they may also be motivated by obtaining CSAM or engaging in sexual interactions with minors online. In contrast, online-focused offenders, also referred to as fantasy-driven, noncontact, or solicitor-only offenders, are exclusively motivated by obtaining CSAM or engaging in online sexual interactions with children. A study by the NCMEC (2017) found that one-third of OCSG offenders were contact-driven, indicating their intention to meet the minor for sexual and physical contact; 60 % were exclusively motivated to obtain CSAM, and 8 % solely desired cybersex or online role play.

Contact-driven offenders are often characterized as younger, unmarried, and unemployed (Briggs et al., 2011). They are more likely to have a history of using drugs (McCarthy, 2010) and multiple convictions for sexual crimes (McCarthy, 2010; Soldino et al., 2019). These offenders tend to view children as sexual agents (Merdian et al., 2018) and establish connections with others who share similar deviant sexual interests (McCarthy, 2010). In contrast, online-focused offenders prefer indirect methods of sexual satisfaction, report intimacy deficits, and more frequently engage with sexually deviant materials (Merdian et al., 2018). They also tend to have fewer criminal records and lower recidivism rates (Soldino et al., 2019). The likelihood of these offenders being diagnosed with pedophilia varies across studies (Briggs et al., 2011; McCarthy, 2010; Soldino et al., 2019), while online-focused offenders are more likely to be diagnosed with narcissistic personality (Briggs et al., 2011).

More specifically, contact-driven OCSG offenders engage in relatively few sexual behaviors during their online conversations with child victims (Briggs et al., 2011). In addition, they are more likely to use self-disclosure grooming tactics (e.g., disclosing personal experiences and emotions) to build trust (Chiu et al., 2018) as well as isolation and approach tactics (e.g., mental isolation, physical isolation, verbal lead-ins; Crowell et al., 2022). On the other hand, online-focused OCSG offenders rely more on grooming and communicative desensitization techniques (Crowell et al., 2022) and discuss sexual relations with other adults more frequently (McManus et al., 2016).

In the European Online Grooming Project typology proposed by Webster et al. (2012), OCSG offenders were categorized into three distinct groups: intimacy-seeking, adaptable style, and hyper-sexualized. The intimacy-seeking group engaged in prolonged online conversations with minors, presenting themselves honestly without altering their identity. Their objective was to establish a close relationship with the child and eventually arrange an offline meeting to develop intimacy further. In contrast, the adaptable style group demonstrated flexibility in their grooming approach, adapting their identity and tactics according to the minor's behavior and presentation online. Lastly, the hyper-sexualized group possessed extensive collections of CSAM and assumed various identities in their online interactions. Their conversations rapidly escalated to sexual content; however, in-person meetings were less common among this group when compared to the other offender categories (Webster et al., 2012).

DeHart, Dwyer, Seto, Moron, and Letourneau, E., and Schwarz-Watts, D. (2017) found support for a distinction between contact-driven and online-focused OCSG offenders, further dividing them into four subgroups: cyber-sex exclusive offenders, cybersex/schedulers, schedulers, and buyers. Cyber-sex exclusive offenders typically engage in sexual conversations and expose their nudity online while encouraging the victim to reciprocate sexually. However, they generally do not make concrete plans to meet the victim offline despite discussing the possibility. Cybersex/schedulers resemble cyber-sex-only offenders in that they engage in online sexual behavior; however, they specifically plan to meet the victim offline. Schedulers primarily seek casual sexual encounters in person, with fewer offenders in this group engaging in online sexual behavior or attempting to develop relationships with their victims. The group of buyers, like schedulers, was primarily interested in meeting victims in person, but they also engaged in negotiating sexual favors and monetary transactions. This group included individuals who respond to presumed advertisements from pimps or family members featuring minors.

Using a cluster analysis of Perverted Justice chats, van Gijn-Grosvenor and Lamb (2021) classified OCSG offenders into four distinct profiles: intimacy-seeking, dedicated hyper-sexual, social, and opportunistic-asocial. Subsequently, the researchers compared the differences between these groups concerning rapport building, sexual content, and concealment strategies. Intimacy-seeking individuals focused on establishing rapport with their victims. The dedicated hypersexual groomers not only built rapport but also engaged in explicit sexual conversations and employed tactics to conceal their communication. Social groomers, on the other hand, also prioritized building rapport but were less inclined to delve into discussions about sexual topics or use strategies to hide their interactions. In contrast, opportunistic-asocial groomers invested minimal effort in establishing rapport with their victims, showed little interest in discussing sexual matters, and demonstrated no concern about the possibility of being discovered (van Gijn-Grosvenor & Lamb, 2021).

Current Study.

Law enforcement agencies worldwide are overwhelmed by the sheer volume of CSE cases and the substantial amount of data within each case (Chiu et al., 2018; Harkin, Whelan, & Chang, 2018; NCMEC, 2022; Seigfried-Spellar et al., 2019). Therefore, it becomes crucial to prioritize and triage OCSG cases to identify high-priority suspects (i.e., contact-driven individuals) before any in-person meeting occurs (Chiu et al., 2018; Mount, Mazerolle, Zahnow, & James, 2021; Razi et al., 2021; Seigfried-Spellar et al., 2019).

Despite the global impact of online CSE, there is still a notable lack of empirical studies involving police samples from non-English

speaking countries (Seto, 2019), including Spain (Pascual, Giménez-Salinas, & Igual, 2017; Soldino et al., 2019; Soldino, Carbonell-Vayá, & Seigfried-Spellar, 2021). Thus, the current study aims to address this gap by conducting empirical research on the criminological characteristics of OCSG offenders in Spain. We analyzed a sample of de-identified law enforcement investigations that included real conversations between suspected OCSG offenders and minors. Our study involved statistical analyses to identify criminological differences between contact-driven and online-focused OCSG cases investigated in Spain, examining various variables such as case sample characteristics, unique suspect and victim characteristics, chat platform, chatlog data (e.g., number of messages), victim high-risk behaviors (e.g., sending sexts), use of deception, and other grooming tactics.

We acknowledge some debate regarding the dichotomous classification of OCSG offenders into contact-driven and online-focused (Broome et al., 2018; Krone et al., 2020). However, our classification was based on the Spanish Criminal Code while carefully considering the importance of assisting law enforcement with empirical research that informs their process of prioritizing and investigating cases involving contact-driven suspects.

3. Methods

3.1. Data collection and sample

Spanish law enforcement agencies Guardia Civil and Policía Nacional provided 98 police reports covering investigations from 2008 to 2021.¹ These reports were securely transmitted to the research team between September 2020 and January 2022. For inclusion in the current study, each case had to contain at least one chat log between a suspected OCSG offender aged 14 years or older (the minimum age of criminal responsibility in Spain) and a minor under 18 years.² We extracted a total of 295 OCSG cases from the available reports. Before data analysis, a research technician removed all personal identifying information from the case files. Both authors' universities provided ethical approval for the study (Purdue University IRB #2021-540; Universitat de València Registration #120381).

This study's data anonymization and coding process began in September 2020 and concluded in March 2023. This phase proved to be time-consuming due to several factors. First, most police reports provided by law enforcement were scanned copies in .pdf format, which presented challenges in extracting, parsing, and anonymizing the chat logs. Manual typing was necessary in most cases to convert the chat logs into a suitable format for anonymization. Secondly, the chat logs exhibited significant variations in length, with some cases containing over 2000 lines of text. Finally, several cases included multiple chat logs between the suspect and the victim.

Out of the total 295 cases initially received, we excluded 38 cases for various reasons: 18 cases involved alleged adult victims; 11 cases involved different criminal offenses (e.g., non-sexual harassment, scam); six cases only included chat logs between the suspect and the victim's parent, and three cases only contained conversations between two suspects.

The final dataset for statistical analysis included 257 OCSG cases extracted from 98 police reports. Of these reports, 66 (67 %) were from the Guardia Civil, and 32 (33 %) were from the Policía Nacional. As shown in Table 1, the majority of police reports only included one victim ($n = 63$, 64 %); however, the average was 4.12 victims per report due to several reports involving many victims ($SD = 10.77$, Range = 1–61). Similarly, most reports ($n = 86$, 88 %) featured a single suspect, with an average of 1.67 suspects per report ($SD = 3.30$, Range = 1–30). The average duration of law enforcement investigations was 96 days ($SD = 126.70$, Range = 1–503). Most crimes were reported to law enforcement by the victim's parents ($n = 73$, 82 %).

Regarding the data format, a large portion of the chat logs were provided in either .xls/.csv file format (44 %) or as image screenshots in formats like .jpg or .png (42 %). The number of chat logs per case ranged from 1 to 22, with most cases ($n = 188$, 73 %) having only one chat log. As shown in Table 2, suspects and victims exchanged 101,391 messages during their online interactions, with message counts ranging from 2 to 7904 ($M = 394.52$, $SD = 938.48$). Specifically, suspects sent 55,048 messages ($M = 214.19$, $SD = 470.55$), while victims sent 46,343 messages ($M = 180.32$, $SD = 484.38$). The anonymized chat logs contained a total of 426,893 words ($M = 1661.06$, $SD = 4079.13$); suspects texted a total of 246,389 words ($M = 958.71$, $SD = 2282.58$) compared to the victims' total of 180,504 words ($M = 702.35$, $SD = 1884.14$).

The final sample included 120 distinct suspects: 105 had chat logs retrieved involving a single victim, and 15 had chat logs with multiple victims, treating each victim as a separate case. Among the suspects with multiple victims, the average number of victims was 14.27 ($SD = 20.97$), ranging from 2 to 61. In addition, the sample included 234 unique victims. For 228 of these victims, the analyzed

¹ The inclusion criteria for the study were primarily guided by the objective of obtaining a representative sample of OCSG cases in Spain. While we acknowledge that technological advancements and shifts in online behavior have occurred over this timeframe, by encompassing cases over a broader period, we aimed to capture a comprehensive overview of the phenomenon within the context of our study.

² Given that any material depicting sexually explicit conduct involving a minor or their sexual organs is categorized as *child pornography* (i.e., CSAM) in accordance with the Spanish Criminal Code, we made the decision to incorporate cases involving victims who were aged between 16 and 18 into our analysis.

Table 1

Characteristics of police reports (n = 98).

Variable	Police Reports			Comparison statistic
	PN (n = 32)	GC (n = 66)	Total (N = 98)	
# of Victims	M (SD)	8.53 (17.72)	1.98 (2.99)	t(96) = 2.93, p < .01, r = 0.29
# of Suspects	M (SD)	1.94 (5.12)	1.55 (1.91)	n.s.
Length of Investigation (days) (n = 81)	M (SD)	123.50 (133.76)	88.35 (124.62)	n.s.
Reported by (n = 89)	n (%)			FFHET p = .04; Cramer's V = 0.27, p = .04
Parent/Guardian		15 (62.2)	58 (87.9)	
Victim		5 (21.7)	4 (6.1)	
Other		3 (13.0)	4 (6.1)	
			7 (7.9)	

Note. PN = Policía Nacional; GC = Guardia Civil. Some data are missing, so group size varies across variables. Non-significant comparison statistics denoted as n.s. FFHET is the Freeman-Halton extension of the Fisher's exact test calculated for $r \times c$ when one or more cells did not meet the expected minimum of 5 for the chi-square test.

Table 2

Message characteristics for all cases (N = 257).

Variable	Contact-driven (n = 104)	Online-focused (n = 153)	Total (N = 257)	Comparison statistic
Initial Platform (n = 254)	n (%)			$\chi^2(4) = 106.62, p < .001, \phi = 0.65$
Instagram		27 (26.5)	48 (31.6)	
MSN		1 (1.0)	56 (36.8)	
Tuenti		51 (50.0)	2 (1.3)	
WhatsApp		12 (11.8)	20 (13.2)	
Other		11 (10.8)	26 (17.1)	
Multiple Platforms	n _{yes} (n _{no})	37 (67)	34 (119)	
# Messages	M (SD)		71 (186)	$\chi^2(1) = 5.52, p < .05, \phi = 0.15$
Total		395.49 (893.63)	393.86 (972.31)	
Suspect		224.16 (488.10)	207.42 (459.74)	
Victim		171.33 (426.26)	186.44 (521.47)	
# Words	M (SD)			
Total		1637.54 (3717.56)	1677.05 (4319.54)	
Suspect		1037.20 (2425.39)	905.36 (2186.73)	
Victim		600.34 (1358.27)	771.69 (2171.82)	
# Images	M (SD)			
Suspect		1.06 (3.34)	1.34 (4.69)	
Victim		1.00 (3.25)	1.36 (3.51)	
Conversation	M (SD)			
Length (days)		32.64 (50.17)	17.57 (28.82)	$t(188) = 2.63, p < .01, r = 0.19$
Messages/day		42.19 (54.39)	62.11 (85.39)	$t(188) = 1.78, p = .08, r = 0.13$
Late Night %		90.89 (378.03)	130.55 (460.98)	
Late Night % > 50 %		16.16 (28.89)	24.19 (35.35)	
			20.96 (33.06)	

Note. Some data are missing, so group size varies across variables. Non-significant comparison statistics denoted as n.s.

chat logs only involved one suspect. However, for six victims, the chat logs involved multiple suspects ($M = 9.50, SD = 10.73$; Range = 2–30).

Classifying Suspects.

Suspects were classified based on the provisions outlined in Article 183 of the Spanish Criminal Code. Suspected OCSG offenders were either *contact-driven* (article 183.1)³ or *online-focused* (article 183.2),⁴ depending on the content of their messages to the victims and the information provided in the associated police reports for each case. According to the established codebook, suspects were *contact-driven* if their messages explicitly indicated an intention to arrange a physical meeting with any victims, including specific details such as date, time, and location. Suspects were also classified as *contact-driven* if they engaged in hands-on sexual offenses with either the same victim or other victims mentioned in the police reports. All other suspects were categorized as *online-focused*. To ensure

³ English translation of the Article 183.1 of the Spanish Criminal Code: *Anyone who, through the internet, phone or any other information and communication technology, contacts a minor under the age of sixteen and proposes to arrange a meeting with them in order to commit any of the crimes described in articles 181, 181 [i.e., sexual aggression against a minor under the age of sixteen] and 189 [i.e., child pornography offense], provided that such a proposal is accompanied by material acts aimed at approaching the minor, shall be punished with imprisonment for one to three years or a fine of twelve to twenty-four months, without prejudice to the penalties corresponding to any crimes committed. The penalties shall be imposed in their upper half when the approach is obtained through coercion, intimidation or deception.*

⁴ English translation of the Article 183.2 of the Spanish Criminal Code: *Anyone who, through the internet, phone or any other information and communication technology, contacts a minor under the age of sixteen and carries out acts aimed at deceiving them into providing pornographic material or showing them pornographic images in which a minor is depicted or appears, shall be punished with a prison sentence of six months to two years.*

Table 3

Criminological variables of interest.

All cases (<i>N</i> = 257)	
Variable	Description
Contact-driven suspect	The suspect had an explicit intention to arrange a physical encounter with (at least) one of their victims, providing specific details such as a date, time, and location. Alternatively, there is evidence indicating that the suspect had already engaged in contact sexual offending with this or other victims.
Age difference	Difference in age between the suspect and the victim
Multiple platforms	The suspect communicated with the victim using multiple online platforms
First platform	Online platform used to initiate the communication
Second platform	Suspect and victim moved from one initial online platform to another (e.g., they meet on Instagram, exchange phone numbers, and then continue communication on WhatsApp)
Further platforms	Further online platforms used to communicate
Victim sends sexual images	There is evidence indicating that the victim sent sexually explicit images of themselves to the suspect
Level 1 ^a	Nudity or erotic poses
Level 2 ^a	Sexual activity between children/self masturbation
Level 3 ^a	Sexual activity between children and adults excluding adult to child penetration
Level 4 ^a	Sexual activity with adult to child penetration
Level 5 ^a	Sadistic sexual activity and bestiality
Suspect sends sexual images	There is evidence indicating that the suspect sent sexually explicit images of themselves to the victim
Suspect sends adult pornography	There is evidence indicating that the suspect sent pornographic images (of other adults) to the victim
Suspect sends CSAM	There is evidence indicating that the suspect sent CSAM to the victim
Deceptive role	The suspect adopted a false identity, posing as someone else (e.g., as a child, talent agent, or model)
Change gender	The suspect presented themselves as a different gender
Pretends to be younger	The suspect presented themselves as a younger person
Meeting suggestion	The suspect suggested the victim to meet in person
Meeting concrete	The meeting proposal included a specific date, time and location
Known suspect	The suspect and the victim had prior acquaintance, even if they had not ever met face-to-face (e.g., the victim may be aware that the suspect is a friend of their cousin)
Distance between the suspect and the victim	Distance in kilometers between the suspect and the victim's location (municipality), as calculated using Google Maps.
Travel time by car	Shortest travel time in minutes by car between the suspect and the victim's location (municipality), as calculated using Google Maps.
Travel time by other transportation	Shortest travel time in minutes, using other modes of transportation such as bus, train, boat, or plane, between the suspect and the victim's location (municipality), as calculated using Rome2Rio.
Total number of messages	Total number of messages in the anonymized chat log
Messages sent by the suspect	Total number of messages sent by the suspect to the victim
Messages sent by the victim	Total number of messages sent by the victim to the suspect
Total number of words	Total number of words in the anonymized chat log
Words sent by the suspect	Total number of words sent by the suspect to the victim
Words sent by the victim	Total number of words sent by the victim to the suspect
Total number of images	Total number of images in the anonymized chat log
Images sent by the suspect	Total number of images sent by the suspect to the victim
Images sent by the victim	Total number of images sent by the victim to the suspect
Duration of the index OCSG offense	Time elapsed in months between the start and end of the index offense
Duration of the online conversation between the suspect and the victim	Time elapsed in days between the first and the last message included in the anonymized chat log
Intensity of the conversation	Average number of messages sent per day in the anonymized chat log
Late night conversation	>50 % of the messages in the anonymized chat log were sent between 0:00 and 7:00 am
Unique suspects (<i>N</i> = 120)	
Variable	Description
Age	Age of the suspect at the time of the first online communication with a reported victim
Gender	Gender of the suspect according to the police report
Nationality	Nationality of the suspect
Contact-driven suspect	The suspect had an explicit intention to arrange a physical encounter with (at least) one of their victims, providing specific details such as a date, time, and location. Alternatively, there is evidence indicating that the suspect had already engaged in contact sexual offending with this or other victims.
Multiple victims	The suspect had multiple victims
Grooming methods ^b	Methods used by the suspect to groom their victims (coded as present if the grooming method was used at least with one of their victims)
Sexual conversation/role play	Engaging the victim in sexual conversation/role-play
Asks for sexual images	Asking the victim for sexually explicit images of themselves
Positive rapport	Developing a positive rapport with the victim
Sends unprompted sexual images	Sending unprompted sexually explicit images of themselves to the victim
Offers sexual images	Offering sexually explicit images to the victim
Reciprocation	Asking the victim to reciprocally/mutually exchange sexually explicit images
Something in exchange	Offering something (other than images) in exchange for fulfilling their goal
Exclusivity	Creating a sense of trust and exclusivity (e.g., "it is our secret", "only we understand", "you are my girlfriend")
Threats	Threatening the victim (e.g., to share their images)

(continued on next page)

Table 3 (continued)

Variable	Description
All cases (<i>N</i> = 257)	
Deceptive role	The suspect exclusively used their true identity/false identity/mixed a true and false identity with each victim
Other methods	Any other method used by the suspect to groom their victims
Goals ^b	Goals sought to be achieved by the suspect with their crime (coded as present if the goal was intended at least with one of their victims)
Sexual images	The suspect wanted sexually explicit images of the victim
Meeting in person	The suspect wanted to meet the victim and engage in a contact sexual offense
Sexual conversation	The suspect wanted to engage in sexual conversation/role-play with the victim
Revenge	The suspect wanted revenge on the victim
Exhibitionism	The suspect had an exhibitionist goal
Children offending upon other children	The suspect wanted the victim to offend upon other minors
Other goals	The suspect wanted to achieve other goals with their criminal action
Criminal records	The suspect had been arrested previously by a Spanish law enforcement agency
Sexual	The suspect had been arrested for a sexual crime in the past
Non-sexual	The suspect had been arrested for a non-sexual crime in the past
Multiple criminal records	The suspect had been arrested previously multiple times
Age at first criminal record	Age of the suspect at the time of their first police arrest
Time elapsed since last criminal record	Time elapsed in days between the last time the suspect was arrested and the index offense
Unique victims (<i>N</i> = 234)	
Variable	Description
Age	Age of the victim at the time of the first online communication with a reported suspect
Gender	Gender of the victim according to the police report
Nationality	Nationality of the victim
Spanish location	The victim was in Spain at the time of the index offense
Multiple offenders	The victim was contacted online by multiple suspects
Contact victim	The victim was contacted online by (at least) one contact-driven suspect
Victim high-risk behaviors ^b	The victim engaged in behaviors that made them more vulnerable to online sexual exploitation
Lies about being older	Presenting themselves as an older person
Sends unprompted sexual images	Sending unprompted sexually explicit images of themselves to the suspect
Offers something in exchange	Offering the suspect an exchange for sex or sexually explicit images
Asks for sexual images	Asking the suspect for sexually explicit images
Other risky behaviors	The victim engaged in other risky behaviors

Note. OCSG = Online Child Sexual Grooming. CSAM = Child Sexual Abuse Material. ^a See the Spanish Classification of Child Sexual Exploitation Images (CIESI; Pascual et al., 2017). ^b Most of the categories related to the suspect's methods and goals, as well as those behaviors that made the victims more vulnerable to exploitation were extracted from the data provided by NCMEC (2017).

reliability, two independent coders assessed each suspect's classification. The inter-rater reliability, measured by Cohen's Kappa, was 0.908 ($SE = 0.041$; 95 % CI [0.827, 0.987]), indicating an excellent level of agreement between the coders (McHugh, 2012).

Criminological Variables of Interest.

To prevent duplication and bias (e.g., including the same victim several times), we divided the data into three distinct datasets: (1) 257 OCSG cases, (2) 120 unique suspects, and (3) 234 unique victims. Each dataset focused on different variables for analysis (see Table 3).

3.2. Data analysis

We conducted descriptive statistics of all variables for the total sample. Next, we examined the variables of interest across the different datasets (see Table 3); statistical significance was set at 0.05, although marginal significance was reported ($0.10 > p > .05$). Chi-square (χ^2) tests examined the association between categorical variables in the dataset. If violated, we instead applied the Fisher's Exact Test for 2×2 contingency tables or the Fisher-Freeman-Halton Exact Test for $R \times C$ contingency tables (Freeman & Halton, 1951). Finally, independent sample *t*-tests examined the mean difference between groups on a continuous variable. We calculated effect sizes for all statistical analyses to estimate better the magnitude of the relationship between variables; 0.10, 0.30, and 0.50 were considered small, medium, and large effect sizes for ϕ (2×2) and Cramer's *V* ($2 \times c$). For the *t*-test, we converted the *t*-value into an *r*-value for an effect size interpretation of small (0.10), medium (0.30), and large (0.50; see Field, 2018).

4. Results

4.1. All cases (*N* = 257)

Of the 257 OCSG cases analyzed, 153 were online-focused, and 104 were contact-driven. As shown in Table 4, there was no significant age difference between contact-driven and online-focused suspects and their respective victims. In 72 % of the cases, suspects utilized a single online platform to communicate with their victims. Contact-driven suspects were more likely to use multiple platforms than online-focused suspects ($\phi = 0.15$; see Table 4).

Table 4

Victim and suspect characteristics for all cases (N = 257).

Variable		Contact-driven (n = 104)	Online-focused (n = 153)	Total (N = 257)	Comparison statistic
Age Difference (n = 132)	M (SD)	11.45 (10.25)	13.47 (10.72)	12.33 (10.46)	n.s.
Victim Sends Sexts	n _{yes} (n _{no})	38 (64)	86 (67)	124 (131)	$\chi^2(1) = 8.80, p < .01, \phi = 0.19$
Level 1		36 (1)	77 (0)	113 (1)	n.s.
Level 2		17 (20)	27 (50)	44 (70)	n.s.
Level 3		0 (37)	0 (77)	0 (114)	n.s.
Level 4		0 (37)	2 (75)	2 (112)	n.s.
Level 5		3 (34)	1 (76)	4 (110)	Fisher's Exact Test $p = 10, \phi = 0.17, p = .06$
Suspect Sends	n _{yes} (n _{no})				
Sexts		30 (72)	31 (119)	61 (191)	n.s.
Adult Porn		2 (101)	6 (143)	8 (244)	n.s.
CSAM		6 (97)	24 (125)	30 (222)	$\chi^2(1) = 6.14, p < .01, \phi = 0.16$
Suspect Identity	n _{yes} (n _{no})				
Used Deception		72 (28)	96 (29)	168 (57)	n.s.
Pretend Younger		62 (6)	90 (4)	152 (10)	n.s.
Lied Gender		12 (59)	38 (58)	50 (117)	$\chi^2(1) = 10.01, p < .01, \phi = 0.25$
Suspect Suggests Meet	n _{yes} (n _{no})	61 (43)	22 (128)	83 (171)	$\chi^2(1) = 54.02, p < .001, \phi = 0.46$
Known/Stranger	n _k (n _s)	18 (86)	5 (148)	23 (234)	$\chi^2(1) = 14.98, p < .001, \phi = 0.24$
Distance	M (SD)				
KM (n = 168)		318.65 (659.84))	537.91 (472.82)	444.50 (568.84)	t(167) = 2.52, $p < .01, r = 0.20$
By car (min) (n = 147)		51.80 (80.30)	262.62 (172.89)	176.57 (176.13)	t(145) = 8.81, $p < .001, r = 0.59$
Other transportation (min) (n = 169)		122.85 (151.08)	313.20 (148.84)	232.10 (176.69)	t(167) = 8.17, $p < .001, r = 0.53$

Note. Some data are missing, so group size varies across variables. Non-significant comparison statistics denoted as n.s. Fisher's exact test was calculated for a 2 × 2 contingency table in which one or more cells did not meet the expected minimum of 5 for the chi-square test.

On average, suspects and victims sent at least one image ($M = 1.23, SD = 4.19$, Range = 0–42; $M = 1.21, SD = 3.41$, Range = 0–24; respectively). In 48 % of the cases, the victim sent sexually explicit images of themselves to the suspect. There was a significant association indicating that victims were more likely to send these images to online-focused individuals ($\phi = 0.19$). When examining the severity of the images based on the Spanish Classification of Child Sexual Exploitation Images (Pascual et al., 2017), we observed a marginal association for Level 5. Victims were more likely to send images categorized as Level 5 (i.e., sadistic sexual activity and bestiality) to contact-driven suspects ($\phi = 0.17, p = .06$). However, most suspects did not send sexually explicit images of themselves, adult pornography, or CSAM to their victims. However, online-focused individuals were significantly more likely to send CSAM to victims ($\phi = 0.16$). Although not statistically significant, a small effect size suggested that contact-driven suspects were more likely to send sexually explicit images of themselves ($\phi = 0.10$).

In 75 % of the cases analyzed, the suspect used deception. There was no statistically significant difference between online-focused and contact-driven suspects and their use of deception in general. However, when examining deception based on gender, online-focused suspects were statistically more likely to lie about their gender than contact-driven individuals ($\phi = 0.25$). There was no difference between suspect types and pretending to be younger as a deceptive strategy. When examining the meeting stage, contact-driven suspects were more likely to suggest a meeting in person ($\phi = 0.46$). Furthermore, contact-driven suspects were more likely to be known to the victim. In contrast, online-focused suspects were more likely to be strangers ($\phi = 0.24$).

Independent t-tests analyzed the physical distance (km, minutes by car, minutes using other transportation) between the suspects and their victims. The results indicated that, on average, contact-driven suspects were closer in distance (km) to their victims compared to online-focused suspects ($r = 0.20$). Contact-driven suspects were also closer in travel time (minutes) to their victims by both car ($r = 0.59$), and other modes of transportation ($r = 0.53$), compared to online-focused suspects. We also analyzed the conversation length and intensity difference between contact-driven and online-focused suspects. Contact-driven suspects had longer conversations with victims (measured in days) compared to online-focused suspects ($r = 0.19$). However, there was a marginal difference in the average number of messages exchanged per day between online-focused and contact-driven suspects ($r = 0.13, p = .08$).

Unique Suspects (N = 120).

As shown in Table 5, most suspects were men⁵ from Spain. Suspect ages ranged from 14 to 73, with 11.8 % (n = 9) of suspects between ages 14 and 17. Among the 120 suspects, 66 % were online-focused, and 34 % were contact-driven. We found no statistically significant differences between online-focused and contact-driven suspects regarding gender, age, nationality, or criminal offense history. Although a marginal statistically significant relationship suggested that contact-driven suspects were more likely to have multiple victims ($\phi = 0.15, p = .09$), the actual number of victims did not significantly differ between contact-driven and online-focused suspects.

⁵ When determining inclusion criteria for the current study, the goal was to sample OCSG suspects in Spain, so we intended not to exclude any suspects based on gender or age. Post hoc analyses controlling for gender or age did not change our findings.

Table 5

Unique suspects characteristics (N = 120).

Variable		Contact-driven (n = 41)	Online-focused (n = 79)	Total (N = 120)	Comparison statistic
Gender	n (%)				n.s.
Male		40 (97.6)	72 (97.3)	112 (97.4)	
Female		1 (2.4)	2 (2.7)	3 (2.6)	
Age (n = 76)	M (SD)	29.09 (13.14)	27.30 (10.91)	28.08 (11.88)	n.s.
Unique Suspect	n _{yes} (n _{no})	33 (8)	72 (7)	105 (15)	$\chi^2(1) = 2.80, p = .09, \phi = 0.15$
# of Victims	M (SD)	4.22 (10.86)	3.28 (9.24)	3.60 (9.79)	n.s.
Nationality	n (%)				n.s.
Spain		27 (77.1)	35 (68.6)	62 (72.1)	
Other		8 (22.9)	16 (31.4)	24 (27.9)	
Country Location	n (%)				$\chi^2(1) = 3.53, p = .06, \phi = 0.19$
Spain		38 (95.0)	46 (82.1)	84 (87.5)	
Other		2 (5.0)	10 (17.9)	12 (12.5)	
Identity (n = 90)	n (%)				FFHET $p < .05$; Cramer's $V = 0.27, p = .04$
Deception-only		14 (37.8)	30 (56.6)	44 (48.9)	
True-only		20 (54.1)	23 (43.4)	43 (47.8)	
Used both		3 (8.1)	0 (0)	3 (3.3)	
Suspect Methods	n _{yes} (n _{no})				
Sexual Role Play		33 (8)	60 (17)	93 (25)	n.s.
Ask Sexts		35 (6)	72 (5)	107 (11)	n.s.; $\phi = 0.13, p = .15$
Positive Rapport		32 (9)	46 (30)	78 (39)	$\chi^2(1) = 3.68, p = .05, \phi = 0.18$
Sends Unprompted Sexts		11 (30)	9 (67)	20 (97)	$\chi^2(1) = 4.22, p < .05, \phi = 0.19$
Offer Sexts		22 (19)	40 (36)	62 (55)	n.s.
Reciprocate		16 (25)	33 (42)	49 (67)	n.s.
Something in Exchange		14 (27)	10 (65)	24 (92)	$\chi^2(1) = 7.00, p < .01, \phi = 0.25$
Exclusivity		13 (28)	22 (54)	35 (82)	n.s.
Threats		9 (32)	19 (57)	28 (89)	n.s.
Other		4 (37)	4 (71)	8 (108)	n.s.
Suspect Goals	n _{yes} (n _{no})				
Wants Sexts		37 (4)	72 (4)	109 (8)	n.s.
Sexual Role Play		35 (6)	58 (18)	93 (24)	n.s.
Revenge		3 (38)	8 (69)	11 (107)	n.s.
Exhibitionism		2 (39)	3 (73)	5 (112)	n.s.
Child-on-Child Offense		5 (36)	7 (69)	12 (105)	n.s.
Other		0 (41)	4 (72)	4 (113)	n.s.
Criminal Records	n _{yes} (n _{no})				
Prior Record		11 (19)	12 (20)	23 (39)	n.s.
Multiple Records		5 (6)	7 (4)	12 (10)	n.s.
Sexual Records		6 (5)	8 (3)	14 (8)	n.s.
Non-Sexual Records		8 (3)	8 (3)	16 (6)	n.s.
Age First Record (n = 18)	M (SD)	24.78 (8.00)	27.22 (11.67)	26.00 (9.79)	n.s.
Years Since Last Record (n = 19)	M (SD)	1.67 (2.55)	2.50 (5.32)	2.11 (4.15)	n.s.

Note. Some data are missing, so group size vary across variables. Non-significant comparison statistics denoted as n.s. FFHET is the Freeman-Halton extension of the Fisher's exact test calculated for $r \times c$ when one or more cells did not meet the expected minimum of 5 for the chi-square test.

Among the 120 suspects, 43 exclusively used their true identity, 44 exclusively used a false identity, and 3 used both (true and false identities). We examined the use of deception by contact-driven and online-focused suspects. As a dichotomous variable (General Deception: Yes or No), there was no difference between contact-driven and online-focused suspects' deception use. When examining true-only, deception-only, or use of both (true and false identities), we found that individuals who used both were more likely to be contact-driven (Cramer's $V = 0.27$); however, we encourage caution when interpreting this finding as only three suspects used both true and false identities. We found statistically significant differences in grooming strategies. Contact-driven suspects were significantly more likely to use positive rapport ($\phi = 0.18$), send unprompted sexually explicit images of themselves ($\phi = 0.19$), and offer something in exchange for fulfilling their goal ($\phi = 0.25$). Although not statistically significant, a small effect size suggested that online-focused suspects might have a higher likelihood of soliciting sexually explicit images from minors ($\phi = 0.13$).

Unique Victims (N = 234).

As shown in Table 6, most of the victims were female, Spanish, and their ages ranged from 7 to 17. We found significant differences between victims of contact-driven suspects ($n = 99$) and victims of online-focused suspects ($n = 135$). Victims of contact-driven suspects were more likely to be male. In contrast, victims of online-focused individuals were more likely to be female ($\phi = 0.52$). In addition, victims of online-focused suspects were significantly younger than victims of contact-driven suspects ($r = 0.26$). There was a marginally significant difference in victim location, indicating that victims of contact-driven suspects were more likely to be in Spain compared to victims of online-focused suspects ($\phi = 0.13, p = .06$). When analyzing high-risk behaviors that made the victims more vulnerable to exploitation by the suspects, victims of contact-driven suspects were more likely to offer something in exchange for sex or sexually explicit images ($\phi = 0.18$). The most common high-risk behavior occurred when the victims initiated requests for sexts from the suspects – however, there was no significant difference between groups (14 % contact and 12 % online-focused). It is important to

Table 6

Unique victim characteristics (N = 234).

Variable		Contact-driven (n = 99)	Online-focused (n = 135)	Total (N = 234)	Comparison statistic
Gender	n (%)				$\chi^2(1) = 63.82, p < .001, \phi = 0.52$
Male		64 (64.6)	19 (14.1)	83 (35.5)	
Female		35 (35.4)	116 (85.9)	151 (64.5)	
Age (n = 154)	M (SD)	13.74 (1.79)	12.55 (2.53)	13.17 (2.25)	t(152) = -3.38, p < .001, r = 0.26.
Unique Victim	n _{yes} (n _{no})	96 (3)	132 (3)	228 (6)	n.s.
# of Suspects	M (SD)	1.11 (0.91)	1.36 (2.92)	1.26 (2.08)	n.s.
Nationality	n (%)				n.s.
Spain		81 (91.0)	112 (90.3)	193 (90.6)	
Other		8 (9.0)	12 (9.7)	20 (9.4)	
Country Location	n (%)				Fisher's Exact Test p = .07; $\phi = 0.13, p = .06$
Spain		94 (100.0)	127 (96.2)	221 (97.8)	
Other		0 (0)	5 (3.8)	5 (2.2)	
High-risk Behavior	n _{yes} (n _{no})				
Lying - Older		3 (96)	6 (125)	9 (221)	n.s.
Sent Unprompted Image		3 (96)	8 (123)	11 (219)	n.s.
Offering Exchange		9 (90)	2 (130)	11 (220)	$\chi^2(1) = 7.16, p < .01, \phi = 0.18$
Ask Sexts		12 (87)	14 (118)	26 (205)	n.s.
Other		11 (88)	7 (125)	18 (213)	$\chi^2(1) = 2.66, p = .10, \phi = 0.11$

Note. Some data are missing, so group size varies across variables. Non-significant comparison statistics denoted as n.s. Fisher's exact test was calculated for a 2 × 2 contingency table in which one or more cells did not meet the expected minimum of 5 for the chi-square test.

highlight that these high-risk behaviors, whether engaged in voluntarily or influenced by manipulation, occurred within an abusive context marked by a power imbalance.

5. Discussion

The substantial volume of reported cases and the time needed to investigate OCSG cases (averaging three months) present significant challenges for law enforcement agencies in Spain. This study analyzed 98 de-identified law enforcement investigations, encompassing 257 actual conversations between 120 suspected OCSG offenders and 234 minors. Our findings contribute to our understanding of the characteristics and behaviors exhibited by OCSG offenders and provide valuable insights into the characteristics of victims. The findings also highlight the need for targeted interventions and prevention strategies to address the specific risks associated with each type of OCSG offender. Finally, law enforcement agencies may benefit by improving their efforts to identify and prioritize high-risk cases, protect potential victims, and bring offenders to justice.

Characteristics of OCSG suspects and their victims.

Consistent with previous research (Babchishin et al., 2011; DeHart et al., 2017; Ribera-Gutiérrez et al., 2023; van Gijn-Grosvenor & Lamb, 2021; Winters et al., 2017), most of the suspects were young adult males. It is worth noting that the average age of the suspects in our study was lower ($M = 28.08$ years). This discrepancy may be partially due to the inclusion of nine underage suspects and the phenomenon of peer grooming (Sklenarova, Schulz, Schuhmann, Osterheider, & Neutze, 2018; Villacampa & Gómez, 2017). In addition, the majority of victims were adolescent females ($M = 17.0$ years). These findings are consistent with prior studies indicating that adolescents and females receive higher rates of online sexual solicitation than males and younger children (de Santisteban & Gámez-Guadix, 2018; Gámez-Guadix & Mateos-Pérez, 2019; Machimbarrena et al., 2018; Montiel et al., 2016; Quayle et al., 2014; Ribera-Gutiérrez et al., 2023; Sklenarova et al., 2018; Villacampa & Gómez, 2017; Whittle et al., 2013; Wolak, Finkelhor, Mitchell, & Ybarra, 2008).

A significant proportion of the suspects examined in our study had no prior connection or relationship with their victims and were not listed in police databases, consistent with the literature (Briggs et al., 2011; NCMEC, 2017; Quayle et al., 2014; Ribera-Gutiérrez et al., 2023; Ringenberg et al., 2022). In addition, most of our sample used a false identity (Gámez-Guadix, Almendros, Calvete, & de Santisteban, 2018; Ribera-Gutiérrez et al., 2023; Ringenberg et al., 2022). The anonymous nature of the internet makes it difficult to identify and apprehend CSE offenders (Bunting, 2008).

Recently, Instagram and WhatsApp emerged as the primary platforms used by offenders to communicate with their victims, mirroring their widespread popularity among the Spanish population (IAB Spain, 2022; Ribera-Gutiérrez et al., 2023). With young people increasingly using these platforms, the likelihood of engaging in online conversations with potential victims increases (Malesky, 2007; Quayle et al., 2014; Winters et al., 2017). While most suspects communicated with a single victim, 12.5 % engaged in simultaneous conversations with multiple victims, thus enhancing their ability to accomplish their criminal objectives (de Santisteban et al., 2018; Malesky, 2007; Quayle et al., 2014; Seigfried-Spellar et al., 2019; Webster et al., 2012; Winters et al., 2017). In our study, 97.4 % of the analyzed chat logs exclusively involved a single suspect – though some victims were targeted by up to 10 suspects concurrently. Nevertheless, victimization surveys indicate that a significant number of victims receive sexual solicitations from multiple individuals (Villacampa & Gómez, 2017), leading to a notable proportion of cases that remain uninvestigated by law enforcement.

The portrayal of young people as vulnerable solely due to their innocence about sex fails to capture the complexity of OCSG (Ribera-Gutiérrez et al., 2023; Wolak et al., 2008). The reality of adolescent sexual development involves a natural progression of

curiosity, knowledge, and experience as they navigate the transition from childhood to adulthood (Riberas-Gutiérrez et al., 2023; Soldino & Andrés-Pueyo, 2023; Wesche & Lefkowitz, 2023; Whittle et al., 2013; Wolak et al., 2008). In our sample, one of the most prevalent high-risk behaviors, making victims more susceptible to being exploited by the suspect, occurred when victims initiated requests for sexts from the suspects (i.e., 13 % of victims were the first to request sexts from the suspects). In 48 % of the cases, victims willingly or under manipulation sent sexually explicit images of themselves to the suspects. Previous studies suggest a significant relationship between online sexual solicitations and interactions and sexting (Calvete, Cortazar, et al., 2021; Gámez-Guadix & Mateos-Pérez, 2019). According to Spanish legislation, the act of receiving such images would constitute an additional charge of *child pornography* for the offender. The non-consensual dissemination of these images to others would also perpetuate the victimization of the minors involved (de Santisteban & Gámez-Guadix, 2018; Finkelhor et al., 2023; Mitchell, Finkelhor, & Wolak, 2007; Say, Babadağı, Karabekiroğlu, Yüce, & Akbaş, 2015).

5.1. Differences between contact-driven and online-focused suspects

Of the 120 OCSG suspects in our sample, 66 % were online-focused, and 34 % were contact-driven. These proportions align with the analysis of CyberTipline reports conducted by NCMEC (2017). In contrast, 90 % of court cases analyzed by Riberas-Gutiérrez et al. (2023) found that the offenders proposed an in-person meeting, and half of these cases resulted in contact sexual offenses. However, cases with more substantiated charges are more likely to lead to court convictions (Correia, 2021). In addition, case attrition can pose a challenge when the suspect's identity is unknown (Bunting, 2008).

A clear distinction should be made between suggesting a meeting and the genuine intention of the offender to follow through with the proposed meeting (DeHart et al., 2017; Kloess et al., 2017). Our study found references to an in-person meeting in 66.5 % of the analyzed conversations. However, only 13.6 % of the conversations observed meeting proposals with specific scheduling. As proposed by DeHart et al. (2017), fantasy-driven offenders may discuss offline contact to extend their online interaction or facilitate sexual gratification.

As anticipated, we found significant criminological differences between contact-driven and online-focused OCSG cases. Consistent with findings from the FBI (Shelton, Eakin, Hoffer, Muirhead, & Owens, 2016), contact-driven individuals were more likely to have some level of pre-existing relationship or familiarity with their victims before initiating the grooming process. In these cases, offenders who were family members or acquaintances used ICT to facilitate the abuse (Ringenberg et al., 2022). The familiarity of the offenders with their victims provided them with an advantage in exploiting and manipulating them, leading to a heightened psychological and emotional impact (Riberas-Gutiérrez et al., 2023; Shelton et al., 2016). According to Riberas-Gutiérrez et al. (2023), having a known victim doubled the likelihood of engaging in offline sexual encounters among convicted OCSG offenders.

Contact-driven suspects engage in lengthy conversations and transition between different online platforms throughout the grooming process. This extended communication establishes trust, builds rapport, and manipulates victims into compliance with their demands, persisting until the offline meeting (Briggs et al., 2011; van Gijn-Grosvenor & Lamb, 2021). Utilizing multiple platforms for communication can also help offenders avoid detection (Quayle et al., 2014). Unlike online-focused suspects, contact-driven suspects were more likely to communicate and propose an in-person meeting with victims closer geographically. This suggests that contact-driven offenders may employ filters to target potential victims based on accessibility (Quayle et al., 2014; Ringenberg et al., 2022; Winters et al., 2017). The physical proximity between the offender and victim facilitates the practical aspects of arranging face-to-face meetings; contact-driven offenders actively seek to transition to an offline encounter, posing a greater risk of contact sexual abuse.

Regarding grooming strategies, contact-driven suspects were more likely to employ positive rapport techniques than online-focused individuals. This behavior aligns with the characteristics of contact-driven intimacy-seeking groomers (van Gijn-Grosvenor & Lamb, 2021; Webster et al., 2012), who perceive their interactions with victims as consensual and intimate. They gradually introduce sexual content into prolonged and frequent conversations, ultimately leading to the arrangement of offline meetings to foster the relationship (Riberas-Gutiérrez et al., 2023; Ringenberg et al., 2022). In this sense, it is worth noting that individuals who report pedohebophilia (i.e., attraction to prepubescent and pubescent children) often mention experiences of falling in love with a child (Martijn, Babchishin, Pullman, & Seto, 2020). Contact-driven suspects were also more likely to send unsolicited sexts. This act verified if the attraction was mutual or was a part of the dynamics of cybersex (Briggs et al., 2011; Quayle et al., 2014; Ringenberg et al., 2022). When considering both positive rapport techniques and the sending of sexts, we can also identify the group of contact-driven hypersexual groomers described by van Gijn-Grosvenor and Lamb (2021).

In our sample, contact-driven suspects were more likely to offer incentives, such as money or drugs, for in-person encounters (Gámez-Guadix et al., 2018). This behavior resembles the subgroup of contact-driven buyers described by DeHart et al. (2017), who negotiate sexual favors and monetary transactions. Like the adaptable style group described by Webster et al. (2012), some contact-driven suspects in our sample also altered their identity (using both true and false identities) in response to the online behavior and presentation of each potential victim (Gámez-Guadix et al., 2018; Quayle et al., 2014).

In contrast, online-focused suspects exhibited a higher likelihood than contact-driven individuals to engage in the exchange of CSAM with their victims, fulfilling their primary goal of attaining sexual gratification during cybersex (Briggs et al., 2011). These suspects were more inclined to deceive their victims by providing false information about their gender. Within the context of our sample, male suspects often assumed the identity of a female when chatting with heterosexual male victims, who believed they were engaging in cybersex with an appealing girl online. This pattern aligns with the findings of Seymour-Smith and Kloess (2021), who noted numerous bargaining sequences involving the reciprocal exchange of photographs or videos between an offender impersonating a teenage girl and multiple male victims.

5.2. Differences between the victims of contact-driven and online-focused suspects

Our findings also revealed significant differences in the victimological characteristics of OCSG victims depending on the type of suspect involved. Specifically, victims of contact-driven suspects were more likely to be male and older compared to victims of online-focused individuals. These victims were also more likely to offer the suspect an exchange for sex or sexually explicit images. Several factors may contribute to these findings. Although girls receive a greater number of sexual solicitations (de Santisteban & Gámez-Guadix, 2018; Gámez-Guadix & Mateos-Pérez, 2019; Machimbarrena et al., 2018; Montiel et al., 2016; Quayle et al., 2014; Riberas-Gutiérrez et al., 2023; Sklenarova et al., 2018; Villacampa & Gómez, 2017; Whittle et al., 2013; Wolak et al., 2008), they are less likely to meet-up in the physical world (Calvete, Cortazar, et al., 2021; Riberas-Gutiérrez et al., 2023). Research suggests girls tend to perceive such behaviors as more dangerous and anticipate more adverse outcomes for themselves (Calvete, Cortazar, et al., 2021; Riberas-Gutiérrez et al., 2023). In addition, some offenders specifically target homosexual males or males questioning their sexuality, encouraging them to engage in sexual experiences. The shame associated with revealing their sexual orientation or past same-sex encounters may drive these boys to seek experimentation with adults (Riberas-Gutiérrez et al., 2023; Whittle et al., 2013; Wolak et al., 2008). Finally, developmental characteristics of adolescence (e.g., curiosity about sex, willingness to take risks, initiation of sexual experiences, and exploration of drug use) contribute to youth's increased vulnerability to contact-driven OCSG (Soldino & Andrés-Pueyo, 2023; Walsh & Wolak, 2005; Wolak et al., 2008).

In contrast, victims of online-focused suspects exhibited a different demographic profile - female and younger. This distinct pattern in victim selection by online-focused individuals suggests a preference for targeting more vulnerable and easily manipulable victims, especially in their pursuit of obtaining CSAM. Online-focused suspects also had more victims located in foreign countries. This finding supports that they do not seek physical contact with their victims and, as a result, do not need to travel to achieve their criminal objectives.

5.3. Limitations

We must acknowledge several limitations in our study that may impact how we interpret and generalize our findings. One major limitation is the exclusion of unreported cases, potentially affecting the overall representation of the problem. However, including cases without legal proceedings may introduce innocent individuals, bias the results, and limit the sample's representativeness. Another consideration is that certain variables we examined showed significant skewness, primarily due to variations in law enforcement efficacy in apprehending offenders. This disparity in enforcement effectiveness can influence the composition of our dataset (Briggs et al., 2011).

The responses and actions of victims may influence the offender's motivations and behaviors (Broome et al., 2018; Kloess et al., 2017; Villacampa & Gómez, 2017). For example, compliance with an offender's demands may encourage them to escalate their behavior, even if initially fantasy-driven. However, due to the limitations of our dataset, we cannot definitively determine whether individuals classified as online-focused would eventually transition to contact-driven behavior based on victim responses or the duration of the conversations.

To address these limitations, future research should continue to explore the characteristics of OCSG with diverse and representative samples. We must also consider the ever-evolving digital communication landscape and the emergence of new grooming techniques. Incorporating qualitative methods can offer valuable insights into the offender and victim perspective, allowing for a deeper understanding of the dynamics involved. Furthermore, understanding intersectional aspects of victimization, such as age and gender, is essential for targeted interventions.

5.4. Potential implications

Our research provides valuable insights into offender and victim profiles, the unique dynamics of OCSG, and the strategies employed by contact-driven and online-focused individuals. These findings carry significant implications across various critical areas.

First and foremost, our results can substantially enhance police training programs, enabling law enforcement agencies to distinguish between contact-driven and online-focused suspects more effectively. This differentiation is paramount, especially considering the diverse legal implications and sentencing criteria outlined in the Spanish Criminal Code. Law enforcement training can be customized to address the specific behaviors and characteristics of these two categories of OCSG offenders. An opportunity also arises to develop specialized digital forensics tools to identify high-priority suspects (González-Álvarez, Santos Hermoso, & Camacho-Collados, 2020; Seigfried-Spellar et al., 2019). Such tools could automate the analysis of online chats, swiftly identifying key variables that statistically differentiate between these offender categories. This automation would expedite the investigative process and reduce the time, effort, and emotional burden experienced by law enforcement officers.

These insights can potentially refine and strengthen prevention strategies and support systems. By developing more focused and effective prevention programs, authorities and organizations can raise awareness among potential victims, their families, educators, and the broader community (Calvete, Cortazar, et al., 2021; Dorasamy, Kaliannan, Jambulingam, Ramadhan, & Sivaji, 2021). This knowledge can also serve as a resource for potential offenders to recognize and address their OCSG behaviors. Ultimately, it could foster a heightened awareness of the need to develop appropriate primary and secondary interventions that identify potential offenders at the onset of their sexual interest in children (Beier, 2019; Craven, Brown, & Gilchrist, 2007).

CRediT authorship contribution statement

Virginia Soldino: Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Kathryn C. Seigfried-Spellar:** Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Writing – original draft, Writing – review & editing.

Declaration of generative AI and AI-assisted technologies in the writing process

While preparing this work, the authors used chatGPT-3.5 to improve readability and language. After using this tool, the authors reviewed and edited the content as needed, and we take full responsibility for the publication's content.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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