



Article

Technology-Facilitated Sexual Violence: Victimization and Risk Factors

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Abstract: Technology-Facilitated Sexual Violence (TFSV) has been a permanent concern in contemporary society. This study aims to provide a global understanding of the TFSV phenomenon in Portuguese context. Using quantitative analyses, the rate and prevalence of victimization, victim characteristics, and technology use were examined. An online questionnaire was completed by 500 people (75.8% female) aged 18–70, mostly cisgender (96.2%), and heterosexual (85.8%). The main results point to a high victimization global rate (72%) as well as in the last 12 months (70.8%). There were no significant differences between the sexes except in sexual aggression/coercion, with more females suffering the more severe type of TFSV. However, the gendering of TFSV emerges with specific behaviors. Females tend to be more sexually harassed, only females report non-consensual sexual experiences with someone they met online, and males tend to report receiving offensive content about their gender/sexuality. Younger people tend to report a higher rate of victimization. The regression model with only victim characteristics is more predictive of TFSV victimization, with younger and heterosexual victims as significant predictors. This study argues that the culture of harassment is deeply rooted and finds an easy way to be disseminated in the digital world.

Keywords: Technology-Facilitated Sexual Violence; sexual violence; technology uses; victims characteristics; gender violence; victimization



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1. Introduction

The digital era brought countless benefits to the human being having millions of users around the world, making communication between people, even at a distance, increasingly current and dynamic (Ståhl and Dennhag 2021). In addition to shortening the perceived distance between people, digital services have become an opportunity for greater social, economic, educational, and even health development (Machimbarrena et al. 2018). In Portugal, specifically, on 31 July 2022, the website Internet World Stats verifies that 8,945,900 (88.1%) of the Portuguese people are internet users.

It has been verified that the digital media facilitate sexual violence have become an increasingly significant phenomenon in the daily life, has shown in the literature about interpersonal violence (Powell and Henry 2019; Patel and Roesch 2022). Like offline sexual interactions, online sexual interactions and/or through digital media seem to exist on a continuum that can be seen as positive (e.g., consensual, flirty, fun) or negative (e.g., non-consensual, intimidating, violent) (Karasavva et al. 2023). Digital sexual violence is a set of interpersonal behaviors perpetrated through digital ways (e.g., cellphone, email), considered to be unwanted, intrusive and/or harmful by the target person of these behaviors (Bailey et al. 2021; Powell et al. 2020). These behaviors include, for example, offensive comments, threats, harassment, sexual exposure, or sexual extortion (Powell et al. 2020).

1.1. Technology-Facilitated Sexual Violence

The internet is seen as the ideal place for the practice of violence and sexual harassment, due to its uninhibited character, where the aggressor is protected by anonymity, has easiness to create different “personas” and to go unpunished.

Digital sexual violence is a widely complex topic, defined with different terms by different authors. To describe all potentially harmful sexual behaviors perpetrated through the internet or digital ways, [Powell and Henry \(2019\)](#) use the term “Technology-Facilitated Sexual Violence—TFSV”, having divided it into five categories, (a) digital sexual harassment, (b) image-based sexual abuse, (c) sexual aggression and/or coercion, and (d) gender and/or sexuality-based harassment. Furthermore, [Powell and Henry \(2019\)](#) developed a questionnaire that contains a wide range of TFSV behaviors within each category. This questionnaire was described, in a recent literature review, as the most suitable for studies on TFSV ([Patel and Roesch 2022](#)).

1.1.1. Digital Sexual Harassment/Intrusion

Digital sexual harassment/intrusion may include posting comments online (e.g., on social media, networks, online forums, and virtual worlds) ([Powell and Henry 2019](#)).

Social media stalking (cyberstalking) is often associated with digital harassment ([Powell and Henry 2019](#)). Although there is no single definition, a recent systematic review carried out by [Stevens et al. \(2021\)](#), in which 31 of the 1204 articles analyzed in it included messages of abuse, threats, degrading comments as examples of cyberstalking and sexual harassment through digital means.

In a study carried out in the Australian population ([Powell and Henry 2019](#)) with 2956 participants, aged between 18 and 54 years, concluded that most of them (62.3%; $n = 1841$) had at least one sexual harassment experience. Of these, 829 (29%) received unwanted sexually explicit images, comments, emails, or text messages, 610 (21.3%) reported repeatedly receiving unwanted sexual requests via email and/or text messages, and 563 (20%) reported having suffered sexual harassment.

1.1.2. Image-Based Sexual Abuse (IBSA)

Image-Based Sexual Abuse (IBSA) consists of obtaining (with or without the consent of the people involved, for example through secret recordings) ([Henry et al. 2023](#)) and/or distribution or threat of distribution (also known as sextortion) ([Crespi and Hellsten 2022](#)) of intimate and/or sexual images ([Henry et al. 2023](#); [Powell and Henry 2018](#)). This content may include digitally edited images or videos of a sexual nature (i.e., deepfakes) ([Henry et al. 2023](#); [McGlynn and Rackley 2017](#)). IBSA is also regularly known as “revenge pornography” ([Bates 2017](#)), a term that was introduced in the mid-2000s to describe sexual image-sharing behaviors by ex-intimate partners motivated by revenge due to infidelity or breakup relationship ([Henry et al. 2023](#)). However, criticism has been made of the term “revenge pornography” for restricting the motivations of the author of these behaviors to the “desire for revenge” ([Franks 2017](#); [McGlynn and Rackley 2017](#); [Henry et al. 2019](#); [Powell et al. 2020](#)). On the contrary, there are several motivations for sharing intimate images (e.g., control and/or dominance over the other, maintenance and/or reinforcement of masculinity) or be a combination of different motivations ([Citron and Franks 2014](#); [Rogers et al. 2023](#)). Furthermore, the sharing of intimate images not only happens in the context of a breakup but can also be part of a current intimate partner’s abusive behavior ([Rogers et al. 2023](#); [Henry et al. 2023](#)). IBSA can also include pressure or coercion to take or share images with intimate and/or sexual content ([Henry et al. 2023](#)).

In the [Powell and Henry \(2019\)](#) study, 1 out of 10 participants were victim of IBSA, with most of them reported that someone had taken a sexually explicit photo without the victims’ consent. In a review carried out by [Patel and Roesch \(2022\)](#), where 425 articles were examined to analyze TFSV behaviors, nineteen of them reported TFSV prevalence rates in 32,247 participants, and that 3% to 12% of people were threatened to share their intimate images and/or videos to other people at least once.

It should be noted that it is difficult to predict the true prevalence of IBSA as people may not know that their intimate images have been taken and/or are being shared with others (Henry and Flynn 2019).

1.1.3. Sexual Aggression and/or Coercion

Digital sexual aggression and/or coercion, according to Powell and Henry (2019), can be essentially defined as three forms of behavior. The first can take the form of blackmail, bribery, or threats (e.g., requiring the victim to engage in virtual or face-to-face sexual acts, or requiring the disclosure of intimate images or information), also known as “sextortion”). The second concerns the use of digital technologies to commit a sexual crime offline (e.g., using a dating website and/or application to arrange a face-to-face meeting with the victim with the aim of sexually assaulting her). The third refers to the use of technology to extend the damage caused by a sexual assault (e.g., obtaining and/or distributing images of the assault) (Powell 2010).

In the Powell and Henry (2019) study, sexual aggression and coercion was reported by more than 1 in 10 participants, who reported unwanted sexual experiences with someone they first met online or via dating app.

1.1.4. Gender and/or Sexuality-Based Harassment

Gender and/or sexuality-based harassment refers to unwanted comments, in the form of text and/or images, about a person’s real or perceived sexuality or sexual identity. Gender and/or sexuality-based harassment may also cover some cases of sexual violence in the virtual world, referring to simulated or graphic representations of sexual aggression and/or unwanted sexual acts (Powell and Henry 2019).

Gender and/or sexuality-based harassment through digital media includes online exclusion, threats of rape and/or death, stalking and revenge pornography. Likewise, it may be based on unwanted and/or disrespectful comments and remarks related to the victim’s sexual orientation and identity, even if that identity or orientation is not real, but rather “created” by the aggressor (Powell and Henry 2019).

1.2. Victims’ Profile and Consequences of Technology-Facilitated Sexual Violence

Victims of TFSV can belong to any gender, and some studies indicate that there are no gender differences when it comes to this type of victimization (e.g., Powell and Henry 2019). However, there are studies that point out that TFSV disproportionately affects women and girls and members of the LGBTQIA+ community (e.g., Araújo et al. 2022; Pew Research Center 2021; Powell et al. 2020). Whereas others indicate men as more predisposed to physical threats, insults, and humiliation online (Powell and Henry 2019; Snaychuk and O’Neill 2020), reporting offensive material related to their sexuality and/or gender (ILGA 2020; Uhl et al. 2018), while women report greater victimization associated with non-consensual sexual communication (Powell and Henry 2019). In both cases, most of the perpetrators are male (e.g., Pew Research Center 2019), suggesting, in social terms, the adoption of specific beliefs, norms and values of “hegemonic masculinity” characterized by hierarchical relations of gender (Henry and Flynn 2019). A study carried out in the USA (Pew Research Center 2021) states that between 2017 and 2020 the number of women who claim to have been the target of online sexual harassment doubled.

Furthermore, adolescents and young adults are often more vulnerable to TFSV, possibly due to the frequent use of digital platforms and social networks (Bossler et al. 2012; Pew Research Center 2021). Individuals who are in abusive relationships also appear to be vulnerable targets for this type of victimization, as the perpetrator may use digital technologies as a means of control and/or retaliation, using tactics such as monitoring, threats and/or revenge pornography (e.g., Rogers et al. 2023). The habits of using technology, according, for example, to the cyber lifestyles-routine activities theory (CLRAT), may be associated with a greater risk of victimization (e.g., cyberstalking, cyber abuse) (Vakhitova et al. 2019; Reyns et al. 2011; Holt and Bossler 2009). The mental health (depression, anxiety, substance

abuse, low self-esteem) of the victims can also be not only a risk factor for victimization by TFSV (e.g., [Bozzola et al. 2022](#)) but also a consequence.

Most studies on TFSV focus mainly on children/adolescents' experiences ([Reed et al. 2019](#); [Stevens et al. 2021](#)) for example, cyberstalking ([Pereira et al. 2016](#)), abusive sexting ([Barroso et al. 2021](#)) and cyberbullying. Despite the increase in international studies focusing on TFSV in adult victims ([Bates 2017](#); [Cripps and Stermac 2018](#); [Powell and Henry 2019](#); [Powell et al. 2020](#); [Ruvalcaba and Eaton 2020](#)), there are still some gaps about the extent, nature and impact of these behaviors, as well as studies on TFSV or based in victims' gender identity and sexual orientation ([Powell et al. 2020](#); [Stevens et al. 2021](#)).

Considering the research carried out to date so far, the need of studies that would allow developing strategies and specific psychological intervention programs for the needs of these victims is highlighted. Specifically, in Portugal, there is no comprehensive study on the phenomenon with the adult population, only studies with younger populations (i.e., children/adolescents), or focused on specific behaviors (e.g., [Barroso et al. 2021](#)). Thus, the few studies on TFSV in Portugal ([Silva et al. 2021](#)) don't allow to map or know, in the context, the specificities of this type of victimization in adult victims.

1.3. Objectives

In Portugal, there are no comprehensive studies on TFSV in adults and on the extent of the phenomenon. Such knowledge should empirically support public policies and prevention and intervention practices.

The present study aims to fill the gaps in the Portuguese context, with the following research questions:

1. What is the nature and prevalence of victimization due to TFSV among Portuguese adults?
2. What are the specific behaviors of TFSV experienced by the victims?
3. What is the sociodemographic victims' profile and their internet usage behaviors?
4. Are victims personal/sociodemographic characteristics could act as risk factors (predictors) and be associated with greater or lesser TFSV victimization?
5. Are technology/internet usage habits associated with greater or lesser TFSV victimization?

2. Materials and Methods

2.1. Participants

The total sample is composed by 500 participants (75.8% female) aged between 18 and 70 years old ($M = 31.31$; $SD = 13.26$). Most of the participants (45.4%) completed secondary education (12th grade) and lived in the North of Portugal (58%). Regarding gender identity, most participants identify themselves as cisgender (96.2%). Finally, 85.8% of the participants were heterosexual (see Table 1).

Table 1. Sociodemographic Variables Descriptive Statistics (N = 500).

Sociodemographic Variables	% (n)	M (SD)
Sex		
Masculine	24.2 (121)	-
Feminine	75.8 (379)	-
Age	-	31.31 (13.26)
Sexual Identity		
Cisgender	96.2 (481)	-
Transgender	0.4 (2)	-
Non-Binary	1.6 (8)	-
Prefers Not to Respond	1.8 (9)	-

Table 1. *Cont.*

Sociodemographic Variables	% (n)	M (SD)
Sexual Orientation		
Heterosexual	85.8 (429)	-
Gay or Lesbian	3 (15)	-
Bisexual	8.8 (44)	-
Asexual	0.8 (4)	-
Pansexual	1.6 (8)	-
Nationality		
Portuguese	95 (475)	-
Other	5 (25)	-
Residence Zone		
North	58 (290)	-
Center	12.4 (62)	-
Lisboa and Vale do Tejo	8.2 (41)	-
Alentejo	0.6 (3)	-
Algarve	7.6 (38)	-
A.R of Azores	12.6 (63)	-
A.R of Madeira	0.6 (3)	-
Education Level		
2nd Cycle of Basic Education (6th year)	0.4 (2)	-
3rd Cycle of Basic Education (9th year)	1.2 (6)	-
Secondary Education (12th year)	45.4 (227)	-
Graduation	34.8 (174)	-
Master's Degree	11.6 (58)	-
Doctorate	6.63 (3)	-

2.2. Instruments

Sociodemographic data (i.e., gender, age, gender identity, sexual orientation, nationality, ethnic group, residential area, education level, current work situation and marital status) of the participants were collected through the sociodemographic questionnaire.

Technology Use Questionnaire (adapted from Ponte and Batista 2019; Powell and Henry 2019) that contains three questions to know the technology use habits of the participants, namely, the average time spent in online activities, the activities they mostly do online and with whom they mostly keep in touch online.

Technology-Facilitated Sexual Violence—Victimization (TFSV) Scale (Powell and Henry 2019) allow to assess the rate and prevalence of negative behaviors experienced. It contains 22 questions, divided into four categories of different types of negative behavior. Digital sexual harassment/intrusion comprised of seven types of behaviors (e.g., “Someone sexually harassed you”; “You received, against your will, sexual explicit images, comments, emails or text messages”); Image-based sexual abuse comprised with three behavior types (“Someone has taken a nude or semi-nude of you without your permission”); Sexual aggression/coercion comprised with five behavior types (e.g., “Someone has taken a picture, or a video of a sexual experience not consented by you”); and Gender/sexuality-based harassment comprised with seven behavior types (e.g., “Someone has posted offensive and/or degrading messages, comments, or other content about your gender (e.g., sexist or rape jokes or comments)”). The original scale showed good psychometric qualities, having a Cronbach alpha of 0.93 on the total scale. The scale was adapted to the Portuguese context. First, permission was requested from the scale original authors for translation and adaptation. The scale was then translated into Portuguese by two Clinical Psychologists. The translated version was backtranslated into English by a native English-speaking Clinical Psychologist who was not involved in the translation process. The translated version was analyzed by Psychologists who were not involved in the translation and backtranslation process to avoid any bias. A pilot test was carried out on a convenience sample ($n = 10$) belonging to different age groups (between 25 and 62 years old), to assess the feasibility of

the translated version. The translated and retranslated versions were sent to the original authors for consideration, and approval was obtained. Finally, the psychometric properties were evaluated using Cronbach's alpha. The total scale had good internal consistency ($\alpha = 0.826$). As for the subscales referring to the different types of TFSV (i.e., Digital Sexual Harassment/Intrusion, Image-Based Sexual Abuse, Sexual Aggression/Coercion and Gender/Sexuality-Based Harassment), they also demonstrated adequate internal consistency ($\alpha = 0.716$; $\alpha = 0.702$; $\alpha = 0.717$ respectively), however Sexual Aggression/Coercion subscale obtained a lower value ($\alpha = 0.586$), but still suitable.

In addition, a recent literature review (Patel and Roesch 2022) described this scale as the most appropriate instrument for the assessment of the prevalence of sexually abusive behaviors committed online. Also, Champion et al. (2022) reports that this scale considers the representation of these behaviors in a wide and detailed way. After that, there were questionnaire about the perpetrator and about the behavior experienced of the most recent victimization experience behaviors (the perpetrator's gender, how they assess their experience, and the actions taken in response to the behaviors) (adapted from (Grangeia and Matos 2018; Ponte and Batista 2019; Powell and Henry 2019)).

2.3. Procedure

The study was submitted for the Council of Ethics and Deontology of the University of Maia—UMAIA's consideration, having obtained a positive decision (opinion 83/2022).

To obtain greater adherence to participation, it was developed an online form using Google Forms. The form could be accessed and filled by any person who showed an interest in participating in this study if they claimed to be 18 years old or older. In the informed consent, all participants acknowledged that they met the required condition concerning their age. It was also requested for the participant to create his own alphanumeric identification code (e.g., A0000), with the aim to apply the right to the renunciation and elimination of the collected data.

Before collecting any data, the Informed Consent was presented, which contained a brief study description objectives and ethical and data protection issues. As this is a population with vulnerable characteristics, the participants were provided with the contact details of the researcher in charge and the contact of a direct victim support hotline, in case the questionnaire trigger any emotional reaction, or whether participants wanted more information about the study. The study comprises a sociodemographic questionnaire, technology use questionnaire, the TFSV scale, a questionnaire about the author of the behaviors, and three questionnaires related to symptomatology (anxiety, depression, and trauma). The convenience sampling is described as unrestricted self-selected survey, that is, an open survey to the public for anyone to participate, with no restrictions on who can participate, leaving the choice to participate to the individual's discretion (Fielding et al. 2017).

The study was disseminated through social media and mailing list, by the researchers involved in this study, and by the communication office of the University of Maia—UMAIA. Data collection was carried out in just one moment and was held between July 2022 and February 2023. In the study dissemination, the term "Technology-Facilitated Sexual Violence" was replaced by "Sexual Violence Through Digital Means" (i.e., Violência Sexual Através dos Meios Digitais), as the word "Facilitated" has a slightly different meaning/connotation in Portuguese, meaning "favored" or "promoted by".

The collected data were extracted from the Google Forms platform in Microsoft Excel format. Subsequently, data collected were entered into the Software Statistical Package for the Social Sciences (IBM SPSS, version 24).

2.4. Data Analysis

To assess victimization of one or more TFSV behaviors, as well as the total victimization rate, the victimization rate occurring in the last 12 months and if the first TFSV behavior victimization was before/after 18 years old, univariate descriptive analyzes were

performed. The total victimization rate goes from 0 to 22. Regarding the sub-scales, the Sexual Harassment/Intrusion goes from 0 to 7; IBSA goes from 0 to 3; Sexual Aggression/Coercion goes from 0 to 5; and Gender and Sexuality-Based Harassment goes from 0 to 7. The victimization rate considered all participants who reported to be a target of at least one behavior (0 = never been a victim; 1 = victim at least one behavior). The victimization in the last 12-month of was coded as follows, 0 for never, 1 for once, and 2 for more than once. To assess the possible significant variation between the various types of victimization (each behavior presents on the scale) and the victim gender, inferential analyzes were performed using association measures (chi-square). Independent samples T-tests were also performed to analyze gender and age possible differences in relation to TFSV behaviors victimization rate.

Regression analyzes were performed to evaluate the possible predictive functionality of some sociodemographic variables (i.e., age, sexual orientation, gender, gender identity, and ethnic group) and technology use variables (i.e., time spent on the internet, activities they carry out on the internet, and people they mostly contact on internet). Only those categories that, according to the literature and our previous analyzes could function as predictors of victimization (age, gender, and sexual orientation) were placed in a first block and in a second block variables of use of technology were added to the previous variables of the first model.

3. Results

3.1. *Victimization of Technology-Facilitated Sexual Violence*

In our sample, a total of 72% of participants ($n = 360$) reported having been victims of at least one of the TFSV behaviors throughout their lives, with 70.8% ($n = 255$) of these being victims in the last 12 months, and 57.2% ($n = 206$) were under 18 years old when they were victimized for the first time. Of these (i.e., victims; $n = 360$), 18.33% are LGBTQIA+ and 81.67% are heterosexual.

The type of TFSV behavior most reported by victims ($n = 360$) was digital sexual harassment/intrusion (70.8%; $n = 354$), 66.4% ($n = 239$) reported to having been a target of these behaviors in last 12 months, and 54.7% ($n = 197$) were under 18 years old when they were victimized for the first time. The most reported behaviors of this type of TFSV were receiving sexually explicit images, comments, emails, or text messages against their will (58.4%; $n = 292$), receiving sexual requests online or via email or text messages against their will (44%; $n = 220$), and sexual harassment (40.6%; $n = 203$).

Gender/sexuality-based harassment was also highly reported among our participants (27.5%; $n = 138$), 28.6% ($n = 103$) were a target of these behaviors in the last 12 months and 23.9% ($n = 86$) were under 18 years old when they were victimized for the first time. These participants mostly stated that someone has posted offensive and/or degrading messages, comments, or other content about their gender (15%; $n = 75$), and that someone has described or visually represented a nonconsensual sexual act against them using an online website, email, or text messages (9%; $n = 45$).

Participants also reported experiences related to image-based sexual abuse (13.4%; $n = 67$), 8.6% ($n = 31$) were the target of these behaviors in the last 12 months and 9.7% ($n = 35$) were under 18 years old when they were victimized for the first time. These participants reported that someone threatened them with posting or sending a nude or semi-nude photo of themselves to someone else without their permission (9.2%; $n = 46$), that someone took a nude or semi-nude photo without their permission (7.6%; $n = 38$), and that someone else posted or sent a nude or semi-nude photo of them online without their permission (5%; $n = 25$).

Finally, 9.4% of victims ($n = 47$) reported having been the target of sexual aggression/coercion, 4.7% ($n = 17$) were the target of these behaviors in the last 12 months and 5.8% ($n = 21$) were under 18 years old when they were the target of these behaviors. These participants claimed to have been the victim of a non-consensual sexual experience they

had with someone they met online (4.4%; $n = 22$), and that someone took a photo or video of them having a non-consensual sexual experience (3.8%; $n = 19$) (see Table 2).

Table 2. TFSV lifelong victimization, victimization in the last 12 months, and fist victimization under 18 years old.

	Lifelong Victimization ($n = 500$)	Victimization in the Last 12 Months ($n = 360$)	First Victimization under 18 Years Old ($n = 360$)
	Lifelong Victimization	One or More Times	
	% (n)	% (n)	% (n)
Total victimization of TFSV	72 (360)	70.8 (255)	32.5 (117)
Digital sexual harassment/intrusion	70.8 (354)	66.4 (239)	54.7 (197)
Image-Based sexual abuse	13.4 (67)	8.6 (31)	9.7 (35)
Sexual aggression/coercion	9.4 (47)	4.7 (17)	5.8 (21)
Gender/Sexuality-Based Harassment	27.6 (138)	28.6 (103)	23.9 (86)

Participants reported that they were targeted from 0 (Min.) to 15 (Max.) TFSV behaviors, an average of four behaviors ($M = 4.02$; $SD = 2.97$), in a total of 22 behaviors described in the TFSV scale. Digital harassment/intrusion was the behavior with the highest frequency compared to other types of behavior, with an average of two to three behaviors experienced ($M = 2.68$; $SD = 1.45$). On the other hand, sexual abuse based on images ($M = 0.30$; $SD = 0.71$) and sexual aggression/coercion ($M = 0.22$; $SD = 0.62$) were the behaviors that showed the lowest mean frequency (less than once for each type of behavior) (see Table 3).

Table 3. Average lifetime TFSV victimization and its 12-month prevalence.

	Lifelong Victimization		Victimization in the Last 12 Months *
	Range	M (SD)	M (SD)
Total victimization of TFSV	1–15	4.02 (2.97)	0.92 (0.75)
Digital sexual harassment/intrusion	0–7	2.68 (1.45)	0.92 (0.78)
Image-Based sexual abuse	0–3	0.30 (0.71)	0.56 (0.70)
Sexual aggression/coercion	0–4	0.22 (0.62)	0.44 (0.65)
Gender/Sexuality-Based Harassment	0–7	0.82 (1.32)	1.14 (0.79)

Note: * 0 for never, 1 for once, and 2 for more than once.

The variable relating to TFSV victimization in the last 12-month of was coded as follows, 0 for never, 1 for once, and 2 for more than once. Participants reported experiencing at least one of TFSV behaviors in the last 12 months ($M = 0.92$; $SD = 0.75$). About digital harassment/intrusion, the participants stated that they were victims, on average, at least once of this type of behavior in the last 12 months ($M = 0.92$; $SD = 0.78$). Regarding image-based sexual abuse and sexual aggression/coercion behaviors, participants claim to have been the target of these behaviors between none and once in the last 12 months ($M = 0.56$, $SD = 0.70$; $M = 0.44$, $SD = 0.65$, respectively). Finally, the most frequent behavior appears to be gender/sexuality-based harassment, with participants claiming to have been the target of these behaviors on average once or more than once ($M = 1.14$, $SD = 0.79$) (see Table 3).

Regarding the online conduct of participants, it is concluded that the majority of participants who claim to have been a victim of TFSV at least once throughout their lives spend up to 6 h of their daily time on online activities (76.4%; $n = 275$), use the internet for leisure activities (59.4%; $n = 214$) and mostly contact people they know (96.4%; $n = 347$). Participants who have never been a victim of TFSV have no significant differences regarding these variables (see Table 4).

Table 4. Frequencies of technology use by the victim group and the non-victim group.

	Victims (<i>n</i> = 360)	Non-Victims (<i>n</i> = 140)
	<i>n</i> (%)	<i>n</i> (%)
Time spent on online activities		
Up to 6 h	275 (76.4)	114 (81.4)
More than 6 h	85 (23.6)	26 (18.6)
Activities that are carried out mostly online		
Leisure	214 (59.4)	72 (51.4)
Others	146 (40.6)	68 (48.6)
People they mostly contact online		
Known people	347 (96.4)	138 (98.6)
Unknown people	13 (3.6)	2 (1.4)

3.2. Characteristics of Technology-Facilitated Sexual Violence Victims

Possible gender differences were assessed regarding the occurrence of victimization due to TFSV. For this, *t*-tests were performed for independent samples. The results suggest that there are no statistically significant gender differences in general victimization by TFSV as well as in the different types of TFSV, except in sexual aggression/coercion ($t(498) = -1.348; p = 0.008$) where women tend to report being target of this type of behavior more frequently (see Table 5). Possible differences between being or not being a victim of TFSV and the age of the participants were assessed. For this, *t*-tests were performed for independent samples. The results suggest that younger people are more likely to report having been victims of TFSV at least once throughout their lives (see Table 6).

Table 5. *T*-Test to assess possible differences between genders regarding the occurrence of victimization due to TFSV.

	Male		Female		<i>t</i>	<i>p</i>
	M	SD	M	SD		
Victimization	2.61	3.04	2.98	3.11	−1.153	0.644
Digital sexual harassment/intrusion	1.64	1.69	2.63	1.72	−2.177	0.748
Image-Based sexual abuse	0.23	0.66	0.21	0.60	0.275	0.599
Sexual aggression/coercion	0.10	0.44	0.17	0.56	−1.348	0.008
Gender/Sexuality-Based harassment	0.65	1.22	0.57	1.16	0.608	0.180

Table 6. *T*-test to assess possible differences between victims and non-victims of TFSV in relation to their age.

	Victims (<i>n</i> = 360)		Non-Victims (<i>n</i> = 140)		<i>t</i>	<i>p</i>
	M	SD	M	SD		
Victimization	29.26	11.991	36.59	14.849	5.731	0.000
Digital sexual harassment/intrusion	29.27	11.994	36.27	14.820	5.526	0.000
Image-Based sexual abuse	25.34	9.230	32.23	13.550	4.019	0.000
Sexual aggression/coercion	25.77	9.810	31.89	13.442	3.037	0.003
Gender/Sexuality-Based harassment	25.04	8.182	33.70	14.026	6.826	0.000

To understand the phenomenon in greater depth, chi-square tests were performed to assess possible associations between each individual item on the scale (i.e., each specific behavior) and gender. The results suggest that, regarding certain specific behaviors, there is a statistically significant association between the gender of the victims and the TFSV behaviors. Specifically, these tests indicated a statistically significant association between sexual harassment behavior and victims' gender ($\chi^2(1) = 26.315, p < 0.01$), in which females

reported more often having been Victims of this experience (47%; $n = 178$) than males (20.7%; $n = 25$). It was also verified that there is a statistically significant association between the specific behavior of receiving offensive and/or depreciative messages, comments or other offensive content about their sexuality or sexual identity and the gender of victims ($\chi^2(1) = 7.343$, $p < 0.01$), with that male participants tend to report being target of these behaviors more often when compared to females. In addition, it was found that only female participants reported having been victims of a non-consensual sexual experience with someone they met online ($\chi^2(1) = 7.347$, $p < 0.01$).

3.3. Risk Factors for Technology-Facilitated Sexual Violence

To assess whether certain sociodemographic variables and variables related to the use of technology function as predictors of victimization due to TFSV, a hierarchical binary logistic regression analysis was carried out. To this end, only the variables that, according to the literature and our previous analyzes could function as predictors of victimization (age, gender, sexual orientation, identity gender, and ethnic group) were placed in a first block and in a second block the technology use variables (time they spend online, activities they mostly carry out online, and people they mostly contact online).

It is concluded that both models are predictive of TFSV, however the first model (age, gender, and sexual orientation as predictors) had greater predictive capacity ($\chi^2(5) = 46.926$; $p < 0.001$; $R^2\text{Negelkerke} = 0.129$) than the second model ($\chi^2(3) = 4.258$; $p > 0.005$; $R^2\text{Negelkerke} = 0.140$). That is, when variables are added of technology use, the predictive model of TFSV victimization is weakened.

In other words, age ($OR = 0.966$; $CI = 0.951\text{--}0.980$) and sexual orientation ($OR = 0.211$; $CI = 0.080\text{--}0.552$) seem to be predictors of victimization by TFSV but the remaining variables do not (see Table 7).

Table 7. Hierarchical binary logistic regression analysis to access potential predictors of TFSV victimization.

	Victimization by TFSV			
	<i>B</i>	<i>S.E. B</i>	<i>O.R.</i>	<i>p</i>
Block 1				
Constant	3.305	0.843	27.236	0.000
Age	−0.035	0.008	0.966	0.000
Gender	−0.177	0.238	0.838	0.456
Sexual Orientation	−1.558	0.492	0.211	0.002
Gender Identity	0.679	0.564	1.972	0.228
Ethnic Group	−0.429	0.532	0.651	0.420
Block 2				
Constant	4.541	1.174	93.780	0.000
Age	−0.040	0.009	0.961	0.000
Gender	−0.244	0.241	0.784	0.313
Sexual Orientation	−1.546	0.492	0.213	0.002
Gender Identity	0.693	0.569	2.000	0.223
Ethnic Group	−0.383	0.539	0.682	0.477
Online Time	−0.058	0.269	0.944	0.831
Activities Online	0.237	0.242	1.268	0.326
People in Contact Online	−1.230	0.795	0.292	0.122

Therefore, it is concluded that heterosexual and younger people tend to be “more likely” to be victims of TFSV. However, although both models predict TFSV victimization, gender and the other variables analyzed by the regression models do not work as predictors of victimization.

4. Discussion

The advance of digital technologies has made it possible for human beings to keep more frequent contact with those close to them, but it has also facilitated contact with strangers, either by their own will or by the initiative of the other. In addition, the internet offers a wide range of services to its users, making its use practically universal. In this way, the ease of access to other people, despite its enormous advantages, also entails several consequences, namely exposure to sexual harassment practices through digital means. However, studies on this issue are scarce, especially in the adult population and in the Portuguese context.

The present study found that TFSV, especially digital harassment/intrusion, is highly prevalent among Portuguese adults surveyed (aged between 18 and 70). These results will be a good contribution to knowledge about the phenomenon, providing data about its extent and nature. These findings are in line with previous international studies (e.g., [Powell and Henry 2019](#); [Pew Research Center 2019](#)).

The results described in this study reveal that, in general terms, there is no gender differences regarding reports of any type of victimization due to TFSV, except for the dimension related to digital sexual aggression/coercion, in which women were more likely to report this type of behavior. However, to have a more detailed view of the phenomenon, each specific behavior on the scale and its possible gender differences were examined. Through these analyzes it was possible to conclude that female participants were more likely to report digital harassment behaviors and that male participants were more likely to report receiving offensive and/or degrading messages or comments or other types of offensive content about of their sexuality or sexual identity. This may suggest that, in Portugal, there also seems to be a hegemonic position in relation to masculinity standards. It is noteworthy that only female participants reported having been victims of a non-consensual sexual experience with someone they first met online. However, relating to others' behaviors, in general, both men and women have similar experiences of TFSV. It is important to note that the percentage of female participants in our sample is much higher than the percentage of male participants and, despite this discrepancy, no significant gender differences in relation to victimization are evident.

Although previous studies have found that non-heterosexual people were significantly more likely than heterosexual people to report being victims of TFSV (e.g., [Powell and Henry 2019](#)), these conclusions were not drawn in our study. This can be explained by possibility for this group of people to protect/protect their sexuality/gender identity, due to Portuguese culture, which tends to discriminate against LGBTQIA+ people ([ILGA 2020](#)).

When examining possible risk factors/variables that predict TFSV victimization, two models are obtained that significantly predict TFSV victimization; however, when variables related to the use of technology are added, the model loses predictive power. Therefore, it is concluded that, contrary to what is speculated, the habits of using technology and the internet do not seem to influence victimization by TFSV. However, similarly to existing literature (e.g., [Bossler et al. 2012](#); [Pew Research Center 2021](#)), it appears in our study that the personal characteristics of the victims themselves, mainly age, constitute a high-risk factor, making them more vulnerable, suggesting that younger people tend to be more prone to this type of victimization.

5. Conclusions

To date, there are no studies on TFSV carried out in Portugal that examine such a wide range of behaviors as our study. The results presented here, conclude that TFSV is common in the sample of respondents in the Portuguese context. Overall, the results obtained through our analyzes are in line with most studies analyzed here. In short, although the general rate of victimization is identical for female and male participants, when analyzing the different types of victimization by TFSV, it is possible to identify differences between female and male participants in the dimension of sexual aggression/coercion, this being the more TFSV severe type. Going deeper, analyzing each behavior on the scale individually,

differences between the genders (female and male) can be identified in three specific behaviors. Female participants are more likely to report digital sexual harassment behavior and male participants are more likely to report offensive comments about their sexuality or gender identity. It was also observed that only female participants reported having been victims of a non-consensual sexual experience by someone they met online. Contrary to expectations, victims' online behaviors do not seem to have an influence on the increase in TFSV victimization, unlike their own characteristics, especially age. It is important to highlight some limitations of this study, namely the fact that these results are based on a non-probabilistic sample (i.e., convenience sample), which prevents us from generalizing these results to the general population in the Portuguese context. Furthermore, in this sample, victims are likely to be overrepresented and, therefore, these results should be read with caution. With these conclusions, large-scale studies are needed, with probabilistic samples, that help to understand the extent of the phenomenon and experiences in different genders and sexualities. Future studies should also address issues related to the psychological impact caused by TFSV and discover what interpretations and meanings victims attribute to these experiences.

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