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Non-consensual forwarding of sexts: characteristics and overlap with in-person sexual coercion

Emma J. Holmes, Serra Baskurt, Gabriella Hilkes and Kelly M. Babchishin

Department of Psychology, Carleton University, Ottawa, Canada

ABSTRACT

This study sought to describe the characteristics of people who non-consensually forward sexts, to examine the overlap between the non-consensual forwarding of sexts and in-person sexual coercion, and to investigate what correlates were associated with each perpetration type (i.e. the non-consensual forwarding of sexts and in-person sexual coercion). In our online community sample of 2,780 emerging adults (i.e. aged 18–30), mostly from North America (97.9%), we found a prevalence of 9.2% for the non-consensual forwarding of sexts and a 13.7% prevalence for in-person sexual coercion. The two types of sexual coercion overlapped; however, more perpetrators of the non-consensual forwarding of sexts had also committed in-person perpetration than in-person perpetrators who also committed the non-consensual forwarding of sexts. Higher sex drive, being a man, greater susceptibility to peer pressure, and self-reporting the other type of sexual coercion were independently related with in-person sexual coercion and the non-consensual forwarding of sexts. Our findings suggest a possible overlapping etiology between in-person sexual coercion and the non-consensual forwarding of sexts and that programmes aimed at reducing in-person sexual coercion could be effective for reducing the non-consensual forwarding of sexts.

PRACTICE IMPACT STATEMENT

Results from our online survey of 2,780 adults aged 18-30 suggest that using "revenge pornography" to refer to the non-consensual forwarding of sexual materials is unnecessarily restrictive and does not represent the nature of this phenomenon. Further, we found that positive beliefs about the non-consensual forwarding of sexts was a common motivation for non-consensually forwarding sexts, suggesting that social media campaigns educating emerging adults on the risks of the non-consensual forwarding of sexts may be effective in reducing this behaviour.

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Sexting (i.e. sending a nude or semi-nude image or video of oneself) is becoming an increasingly common aspect of courtship (Mori et al., 2020; Thorne et al., 2024). Although privacy when sexting is an expected social norm (Hasinoff & Shepherd, 2014), sexting poses an inherent risk: the receiver could share the sext without the original sender's consent. The non-consensual forwarding of sexts is a serious violation of privacy (Funnell, 2014; Tallon et al., 2012) and is illegal in some countries (*Criminal Code of Canada*, 1985; *Criminal Justice and Court Act 2015*, 2015).

CONTACT Emma J. Holmes emmajholmes@cmail.carleton.ca 1125 Colonel By Dr, Ottawa, ON K1S 5B6
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Prevalence rates for the non-consensual forwarding of sexts range from 0.8% (Gámez-Guadix et al., 2015) to 30.2% (Makgale & Plattner, 2017) with a median prevalence rate of 13.1% (Clancy et al., 2021; Drouin et al., 2013; Garcia et al., 2016; Gámez-Guadix et al., 2015; Henry et al., 2019; Kričkić et al., 2017; Makgale & Plattner, 2017; Mori et al., 2020; Pampati et al., 2020; Reed et al., 2016; Scholes-Balog et al., 2016; Stocker, 2013; Walker et al., 2021). A meta-analysis that included 50 studies and data from 18,122 emerging adults (i.e. individuals 18–28 years old), found a prevalence rate for the non-consensual forwarding of sexts of 15.0% (Mori et al., 2020).

Having had one's sext non-consensually forwarded is associated with having worse mental health (Wachs et al., 2021). Additionally, the non-consensual dissemination of sexts originally created by children is a source of child sexual exploitation material (CSEM; Finkelhor et al., 2023). A national U.S. victimisation survey found that among youth (aged 18–28) who reported being depicted in CSEM, the majority (73.5%) had originally taken the image voluntarily. As such, understanding the correlates of the non-consensual forwarding of sexts could help reduce the quantity of CSEM available online, in cases where sexually explicit materials depicting a child were non-consensually forwarded.

Predicting the non-consensual forwarding of sexts and in-person sexual coercion

A pertinent research question is whether typical correlates of in-person sexual coercion are relevant to the non-consensual forwarding of sexts. Seto's (2019) motivation-facilitation model is a theory of sexual offending that suggests that motivation and facilitation factors are related to one's likelihood to commit a sexual offence. One facilitation factor is antisociality (Seto, 2019). Clancy et al. (2019) found that having non-consensually forwarded a sext was related to higher self-reported ratings of narcissism, a construct that is related to antisociality (Klimstra et al., 2014; Ojanen et al., 2012). Motivation factors, such as sex drive, are also proposed to increase one's likelihood to commit a sexual offence (Seto, 2019). In line with this, how frequently pornography was intentionally sought has been found to be predictive of non-consensually forwarding sexts (Van Oosten & Vandenbosch, 2020). Situational factors (i.e. opportunities to offend) also impact one's likelihood to commit a sexual offence (Seto, 2019). Having received a sext is a situational factor that is necessary for the non-consensual forwarding of sexts. A thorough examination of the non-consensual forwarding of sexts should thus consider motivation, facilitation, and situational factors.

Demographic characteristics

Past research has also examined whether other types of correlates may be related to the non-consensual forwarding of sexts. Sexual offences are most often perpetrated by males (Cortoni et al., 2017). While some research has found that men are significantly more likely to non-consensually forward sexts than women (Moyano et al., 2023; Powell et al., 2019), some studies have found that gender is not independently associated with non-consensually forwarding sexts (Clancy et al., 2021; Gámez-Guadix et al., 2022; Schokkenbroek et al., 2023). Another factor that might be differentially related to the non-consensual forwarding of sexts and in-person sexual coercion is age. Younger age is a risk factor for recidivism among men who commit sexual offences (Beech & Craig, 2012; Hanson et al., 2006), but research has found that age is not independently associated with non-consensually forwarding sexts (Morelli et al., 2023; Schokkenbroek et al., 2023).

Similarly, research has found that sexual orientation is independently related to the non-consensual forwarding of sexts, with people who are not straight being more likely to do so than straight people (Morelli et al., 2020, 2023; Powell et al., 2019); perhaps because those who are not straight sext more frequently (Thorne et al., 2024). In contrast, sexual orientation did not independently predict in-person sexual coercion in a group of 1,199 American undergraduate students, when gender was controlled for (Fournier et al., 2023). As such, sexual orientation might be differentially associated with the non-consensual forwarding of sexts and with in-person sexual coercion.

Peer pressure

Among emerging adults, "showing off" (Barrense-Dias et al., 2020) and improving social status (Clancy et al., 2019) are main motivations for forwarding sexts without consent; peer pressure may be involved in the non-consensual forwarding of sexts. Relatedly, peer pressure mediated the relationship between fraternity membership and sexual coercion (e.g. telling lies to convince someone to have sex with them) in college men (Seabrook et al., 2018), suggesting that peer pressure may influence in-person sexual coercion. However, among youth (Ybarra & Langhinrichsen-Rohling, 2019), and among male undergraduate students (Kingree & Thompson, 2015), peer pressure was not associated with perpetrating sexual abuse. More research is needed to ascertain the effect of peer pressure on in-person sexual coercion and the non-consensual forwarding of sexts.

Sexual consent awareness

Perceptions of sexual consent are related to whether one has perpetrated in-person sexual coercion – perceptions of consent are more negative in people who engage in in-person sexual coercion (Moyano et al., 2023; Warren et al., 2015). Insofar as non-consensually forwarding sexts constitute a type of sexually coercive behaviour, perceptions about consent could be related to the non-consensual forwarding of sexts.

In-person sexual coercion

In line with the idea that in-person sexual coercion and the non-consensual forwarding of sexts are similar behaviours, non-consensual forwarding may function as an extension of in-person sexual coercion (Choi et al., 2016). A study of 837 high school students found that pressuring someone to sext was associated with pressuring a dating partner to engage in in-person sexual behaviours (Kernsmith et al., 2018). As such, it is possible that there is overlap between those who commit in-person sexual coercion and the non-consensual forwarding of sexts.

Current study

Consensual sexting is a common sexual behaviour (Mori et al., 2020; Thorne et al., 2024), but it is not without risk; having one's sexts non-consensually forwarded is harmful to the original sender (i.e. the subjects of images forwarded non-consensually; Wachs et al., 2021) and can contribute to the circulation of CSEM should the material depict a child (Finkelhor et al., 2023). As such, it is important to ascertain the extent to which the non-consensual forwarding of sexts overlaps with in-person sexual coercion (e.g. sexual assault) and whether the correlates of the non-consensual forwarding of sexts are similar to that of in-person sexual coercion. The current study answers three research questions: (1) What are the prevalence rates and characteristics of those who engage in the non-consensual forwarding of sexts?; (2) What is the overlap between the non-consensual forwarding of sexts and in-person sexual coercion?; and, (3) What are the correlates of the non-consensual forwarding of sexts and do these overlap with the correlates of in-person sexual coercion?

Method

Participants

Participants were recruited via online ads, as part of a programme of research on the sexting behaviours of emerging adults (Holmes & Babchishin, 2024; Thorne et al., 2024). Although 4,117 participants consented to participate, 516 withdrew before completing the survey and 821 were removed after data cleaning (i.e. for failing a validity check or not reporting pertinent information). This resulted in a final sample of 2,780. Ethics approval was not required for the current study as it involved secondary data analysis of anonymised data. Ethical approval for the original study

(Thorne et al., 2024) was granted by the Royal Ottawa Health Care Group's Research Ethics Board (Reference #2018044).

Table 1 displays the demographic variables for the sample ($N = 2{,}780$). Participants were cisgender[1] 18-to-30-year-olds ($M = 22.5$, SD = 3.5). Under half of the sample were men (47.1%, $n = 1{,}309$). Most participants identified as straight (55.6%, $n = 1{,}547$). For analyses, all participants who were not straight were considered together and were referred to as LGBPA + (i.e. lesbian, gay, bisexual, pansexual, asexual, and other non-straight sexual orientations). Most participants lived in North America (i.e. USA, Canada, or Mexico; 97.9%); more specifically, the majority of participants lived in the USA (57.6%, $n = 1{,}602$; see Table 1).

Measures

The Sexual Experience Survey – Short Form Perpetration (SES-SFP; Koss et al., 2007) assessed whether participants had engaged in a range of sexually coercive behaviours (e.g. "I tried or did have oral sex with someone, or tried/had someone perform oral sex on me without their consent"). Participants who responded "yes" to any of the SES-SFP questions were coded as having perpetrated in-person sexual coercion; this variable captured whether each participant had ever perpetrated any in-person sexually coercive behaviours. Previous research has confirmed the validity and reliability of the SES-SFP (Anderson et al., 2017; Johnson et al., 2017).

The Non-consensual Forwarding of Sexts. To assess whether participants had engaged in the non-consensual forwarding of sexts, they were asked how many times they had ever sent a sexually explicit nude or semi-nude image or video to a third party without the consent of the original sender. Participants were divided by whether they had ever non-consensually forwarded a sext (i.e. frequency greater than 0), or not. Of note, participants could have perpetrated sexual coercion and the non-consensual forwarding of sexts – these groups were not mutually exclusive. All participants also reported whether they had ever received a sext (i.e. a situational factor necessary to have the opportunity to non-consensually forward a sext).

Table 1. Demographic characteristics.

	Overall ($N = 2{,}780$)	In-person Sexual Coercion ($n = 382$)	The non-consensual forwarding of sexts ($n = 256$)
Men	1,309 (47.1%)	230 (60.2%)	156 (60.9%)
Age, Mean (SD)	22.5 (3.5)	23.2 (3.6)	23.3 (3.4)
Country			
Canada	1,121 (40.3%)	165 (43.2%)	104 (40.6%)
USA	1,602 (57.6%)	210 (55.0%)	145 (56.6%)
Other[a]	57 (2.1%)	7 (1.8%)	7 (2.7%)
Sexual orientation			
Lesbian	57 (2.1%)	2 (0.5%)	2 (0.8%)
Asexual	61 (2.2%)	3 (0.8%)	2 (0.8%)
Gay	125 (4.5%)	23 (6.0%)	35 (13.7%)
Pansexual	240 (8.6%)	40 (10.5%)	32 (12.5%)
Bisexual	686 (24.7%)	89 (23.3%)	58 (22.7%)
Straight	1,547 (55.6%)	217 (56.8%)	117 (45.7%)
Orientation not listed	64 (2.3%)	8 (2.1%)	10 (3.9%)
Education attainment			
Less than high school	84 (3.0%)		
High school	556 (20.0%)		
Some college	1,151 (41.4%)		
Associate degree	227 (8.2%)		
Bachelor's degree	566 (20.4%)		
Graduate degree	178 (6.4%)		
Prefer not to answer	18 (0.6%)		

Note: The in-person group includes participants who had committed sexually coercive behaviour in-person (e.g. sexual assault). [a] Most frequently, the United Kingdom (0.4%, $n = 12$), Australia (0.3%, $n = 9$), and Germany (0.2%, $n = 6$).

The Barratt Impulsiveness Scale – 15 (BIS-15; Spinella, 2007) is a 15-item scale that measures impulsivity. The motor impulsivity subscale of the BIS-15 was included in the current study (e.g. "I say things without thinking"). This subscale demonstrated good internal validity (ω = 0.86; α = 0.81). An impulsivity score was computed by taking the mean of responses for the items of the subscale.

Peer Pressure was measured using the *Peer Pressure* scale (Santor et al., 2000), an 11-item scale, measuring one's susceptibility to succumbing to peer pressure. The peer pressure scale demonstrated high internal consistency (ω = 0.92; α = 0.88). The mean of all responses was computed to create a total score for peer pressure.

Sexual Consent Awareness was measured using the *Sexual Consent Scale-Revised* (SCS-R; Humphreys & Brousseau, 2010). The fifth subscale – awareness and discussion – was included in the current study. This subscale assessed sexual consent awareness (e.g. "I have discussed sexual consent issues with a friend"). The SCS-R demonstrated good internal consistency (ω = 0.83; α = .76). Participants' mean responses to these items were used to compute a total sexual consent awareness score.

The Childhood and Adolescent Taxon Scale – Self Report (CATS-SR; Harris et al., 1994; Seto et al., 1997) was used to measure childhood antisocial behaviour. The CATS-SR was shortened to 5 items for the current study to decrease the cognitive load of the survey. The shortened scale assessed arrests, aggression, expulsions, substance use, and parental substance use before the participant turned 16. The modified CATS-SR demonstrated adequate internal consistency (ω = 0.90; α = 0.71). A total score of early antisocial behaviours was created by summing the CATS-SR items.

Sex drive was assessed using participants' responses to questions regarding their frequency of sexual fantasies about prepubescent children, pubescent children, adolescents, or adults (i.e. thinking about sexual scenarios or daydreams). Responses ranged from "Never" to "Multiple times a day". A total sex drive score was created by calculating participants' mean score across the items, with higher scores indicating higher sex drive.

Data analysis

Concordance Indices, also known as Harrell's *C*-index (Harrell et al., 1982), were computed to examine the overlap between the non-consensual forwarding of sexts and in-person sexual coercion. Higher *C* indices indicate greater overlap across behaviours. Harrell's *C*-index was calculated using the formula (Harrell et al., 1982):

$$c = \frac{\#\ concordant\ pairs}{\#\ concordant\ pairs + \#\ discordant\ pairs}$$

Concordance indices were also computed between those who had non-consensually forwarded a sext and different subgroups of in-person sexual coercion. The subgroups included: SFP-no penetration (i.e. sexual coercion without penetration), SFP-oral (i.e. coerced oral sex), and SFP-penetration (i.e. coerced penetration). In-person sexual coercion was also categorised as being Low-intensity, Medium-intensity, and High-intensity, based on the structure of the SES-SFP, to denote the amount of force used to gain compliance. Low-intensity behaviours included verbally coercing someone into engaging in sexual behaviours (e.g. lying or criticising them; items A and B of the SES-SFP, Koss et al., 2007). Medium-intensity behaviours included taking advantage of someone when they were intoxicated or by threatening physical harm (items C and D of the SES-SFP; Koss et al., 2007), and high-intensity behaviours involved the use of physical force (item E of the SES-SFP; Koss et al., 2007). Next, we measured the overlap between non-consensual forwarding and in-person sexual coercion by gender and sexual orientation.

Receiver Operating Characteristic (ROC) analyses were conducted to investigate whether the correlates of interest (i.e. impulsivity, peer pressure, consent awareness, antisociality, and sex drive) were associated with the non-consensual forwarding of sexts and in-person sexual coercion.

ROC analyses generate an area under the curve (AUC) value between 0 and 1, which represents the probability that a randomly selected participant who had perpetrated in-person sexual coercion or the non-consensual forwarding of sexts would score higher on the correlate than a randomly selected participant who did not perpetrate either behaviour. An AUC value of .50 indicates that the predictive accuracy of the correlate is no better than chance. An AUC value that is equal to 0.54 or greater is considered a meaningful risk factor (as per Mann et al., 2010, $d = .15$). AUCs are not strongly influenced by low base rates in the data (Babchishin & Helmus, 2016). Non-overlapping 95% confidence intervals between correlates represent a significant difference at $p < .01$ (Tryon, 2001).

Binary Logistic Regression was conducted to investigate which correlates displayed unique, incremental associations with in-person sexual coercion and the non-consensual forwarding of sexts. Correlates with statistically significant AUC values were included in the regression analyses.

Results

Characteristics of in-person sexual coercion and the non-consensual forwarding of sexts

In the full sample, the prevalence of in-person sexual coercion was 13.7% ($n = 382$). Participants who engaged in in-person sexual coercion were on average 23.2 years old ($SD = 3.6$, range = 18-30), men (60.2%, $n = 230$), and straight (56.8%, $n = 217$; Table 1).

In contrast, 9.2% ($n = 256$) of participants had non-consensually forwarded a sext. When only considering the portion of the sample who had ever received a sext (i.e. when opportunity was present; $N = 2,427$), the prevalence of the non-consensual forwarding of sexts was 10.5%. Those who had non-consensually forwarded a sext were on average 23.3 years old ($SD = 3.4$; range = 18-30), men (60.9%, $n = 156$), and half identified as LGBPA + (50.3%, $n = 129$; Table 1).

Figure 1 provides the prevalence of in-person and non-consensual forwarding separated by gender and sexual orientation; Table s1 in the online supplemental materials provides the prevalence for the subsample who had received a sext, separated by gender and sexual orientation. In the full sample, 20.3% ($n = 564$) of participants reported engaging in either the non-consensual forwarding of sexts and/or in-person sexual coercion. Of the subsample who had perpetrated either

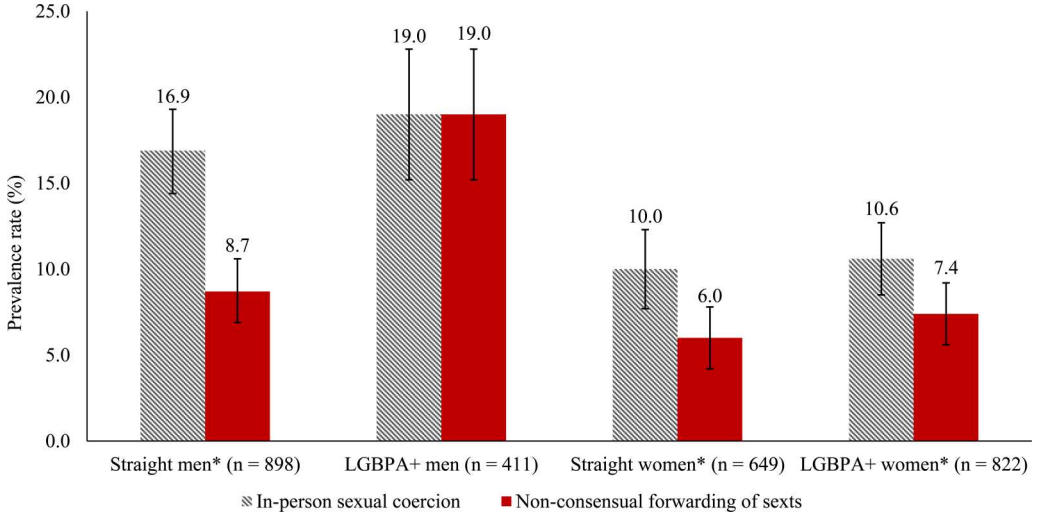

Figure 1. Prevalence rate (%) of sexual coercion separated by gender and sexual orientation.

Note. In-person sexual coercion refers to in-person non-consensual sexual behaviours, like sexual assault. Error bars represent 95% CI intervals. * Within the highlighted groups, the prevalence of in-person sexual coercion differed from that of the non-consensual forwarding of sexts ($p < .01$).

type of sexual coercion, 13.3% had engaged in both the non-consensual forwarding of sexts and in-person sexual coercion ($n = 74/564$).

Tables s2 to s5 of the online supplemental materials provide an overview of the characteristics of perpetrators of the non-consensual forwarding of sexts and the characteristics of the content of materials forwarded without consent and their recipients. It was very common to endorse having non-consensually forwarded both a semi-nude (84.0%, $n = 215$), or a nude sext (75.8%, $n = 194$). Over half of the participants who had non-consensually forwarded a sext reported having non-consensually forwarded a sext depicting a man (61.7%, $n = 158$) and over half reported having forwarded a sext depicting a woman (57.4%, $n = 147$). Most commonly, the materials that were non-consensually forwarded depicted someone the perpetrator was having sex with (60.9%, $n = 156$) or someone they knew exclusively online (56.3%, $n = 144$). Straight women tended to forward sexts non-consensually to men and women at similar frequencies, while LGBPA + women tended to non-consensually forward sexts to other women. Men tended to non-consensually forward sexts to other men, regardless of sexual orientation. Most participants had forwarded a semi-nude or a nude sext non-consensually with two or three people (33.2%, $n = 85$ and 29.3%, $n = 75$, respectively).

Reasons and methods of the non-consensual forwarding of sexts

Table 2 provides an overview of the reasons and methods for non-consensually forwarding sexts (the categories were not mutually exclusive). Most frequently, participants reported forwarding a sext non-consensually because of outside influence (82.0%, $n = 210$) or they thought it would be funny or would get a positive reaction (62.1%, $n = 159$). Least frequently, participants forwarded a sext to cause harm (31.6%, $n = 81$), to get a negative reaction (26.2%, $n = 67$), or because the person depicted in the forwarded image or video had broken up with them (6.6%, $n = 17$). Most participants disseminated the sexts by showing the image or video on their phone (72.7%, $n = 186$) or via direct messaging (69.9%, $n = 179$).

Concordance

Concordance indices (C) assess the similarity between paired observations. A higher C indicates a higher level of similarity between paired observations (i.e. the non-consensual forwarding of sexts and in-person sexual coercion). A greater proportion of individuals reported engaging in in-person sexual coercion within the non-consensual forwarding group than individuals who reported

Table 2. Reasons and methods of forwarding sexts without consent ($N = 256$).

How the sext was forwarded	*n* (%)
Original sender broke up with participant	17 (6.6%)
Negative reaction or to shock	67 (26.2%)
To cause harm[a]	81 (31.6%)
The sext was unwanted by the participant	97 (37.9%)
State reasons[b]	108 (42.2%)
Positive reaction or because it'd be funny	159 (62.1%)
Outside influence[c]	210 (82.0%)
Other	15 (5.9%)
Reasons for forwarding	*n* (%)
Website[d]	23 (9.0%)
Social media[e]	42 (16.4%)
Direct messaging[f]	179 (69.9%)
Showing image or video on own phone[g]	186 (72.7%)
Other	10 (3.9%)

Note: Categories were not mutually exclusive; multiple reasons could be selected. [a]To punish the victim, because they "deserved it," because the victim broke up with the participant, or to make someone jealous. [b]Sent while the sender was high or bored. [c]Trying to show off, fit in, someone asked or pressured them to send it, or they wanted attention. [d]Porn websites, Reddit, or image boards. [e]Instagram, Twitter, and Facebook. [f]Text messaging and direct messaging on social media apps. [g]Showing someone the sext directly from their phone.

Table 3. Concordance indices for the non-consensual forwarding of sexts and in-person sexual coercion.

Pairs of sexually coercive behaviours	Concordance Index	95% CI	*N*
Forwarding sexts and in-person	28.9%	[23.0%, 34.6%]	256
In-person and forwarding sexts	19.4%	[15.6%, 23.3%]	382
Subset of in-person sexual coercion			
Forwarding sexts and SFP-no penetration[a]	45.8%	[34.1%, 56.7%]	72
SFP-no penetration and forwarding sexts	28.7%	[21.2%, 36.9%]	115
Forwarding sexts and SFP-oral[b]	46.2%	[18.2%, 75.0%]	13
SFP-oral and forwarding sexts	21.4%	[7.7%, 36.8%]	28
Forwarding sexts and SFP-penetration[c]	80.0%	[57.1%, 100.0%]	15
SFP-penetration and forwarding sexts	26.1%	[13.8%, 40.0%]	46
Forwarding sexts and low-intensity[d]	84.0%	[67.9%, 96.7%]	25
Low – intensity and forwarding sexts	27.3%	[17.4%, 38.2%]	77
Forwarding sexts and medium-intensity[e]	67.7%	[50.0%, 83.3%]	31
Medium-intensity and forwarding sexts	25.9%	[16.8%, 35.0%]	81
Forwarding sexts and high-intensity[f]	69.2%	[43.3%, 97.0%]	13
High-intensity and forwarding sexts	34.6%	[17.2%, 56.0%]	26

Note: [a]SFP-no penetration, includes perpetrating non-consensual sexual acts without penetration, [b]SFP-oral includes perpetrating non-consensual oral sex, [c]SFP-penetration includes perpetrating non-consensual penetration. [d]Low-intensity includes using verbal persuasion (e.g. telling lies) or insults (e.g. criticising their sexuality or attractiveness) to gain compliance during in-person sexual coercion. [e]Medium-intensity includes taking advantage (e.g. targeting someone who is drunk/high/intoxicated) or threatening violence to gain compliance. [f]High-intensity includes using force to gain compliance. Concordance indices presented separately for men and women can be found in the online supplement (Table s6).

having non-consensually forwarded a sext within the in-person group (Table 3). Put another way, perpetrating both types of sexual coercion was more common amongst the subsample of participants who had non-consensually forwarded a sext (28.9%) than among the subsample who had committed in-person sexual coercion (19.4%). Corollary to this, a greater proportion of participants who had committed in-person sexual coercion had done so exclusively, compared to the proportion of people who had exclusively non-consensually forwarded a sext. Figure 2 depicts a flowchart visualising how concordance indices were computed.

There was greater concordance between the non-consensual forwarding of sexts and in-person sexual coercion when examining low-intensity in-person sexual coercion (84.0%) compared to higher-intensity sexual coercion (69.2%). Concordance indices split by gender and sexual orientation showed that 41.0% of straight men and 23.1% of LGBPA + men who reported having non-consensually forwarded a sext also reported having engaged in in-person sexual coercion. Meanwhile, 33.3% of straight women and 18.0% of LGBPA + women who had non-consensually forwarded a sext also reported engaging in in-person sexual coercion (see supplemental materials Table s6). A similar proportion of straight men and of LGBPA + men who reported having engaged in in-person sexual coercion also reported having non-consensually forwarded a sext (see supplemental materials Table s6). Online supplement Table s7 provides Kendall's Tau-b correlations which also tend to suggest more similarity between the non-consensual forwarding of sexts and in-person sexual coercion for men than for women.

Correlates of sexual coercion

All correlates were statistically significantly associated with in-person sexual coercion (i.e. $p < .05$), except for sexual orientation ($p = .601$; see Table 4). All correlates were statistically significant correlates of the non-consensual forwarding of sexts. Most correlates reached the threshold of a meaningfully strong risk factor, as per Mann et al. (2010).

All correlates had overlapping confidence intervals between the two types of sexual coercion, except for the frequency of sexting variables. That is, the frequency of having received a semi-nude, a nude, and the total frequency of having received a non-consensual sext were better predictors of the non-consensual forwarding of sexts than in-person sexual coercion ($p < .01$). The correlates for in-person sexual coercion and the non-consensual forwarding of sexts were similar

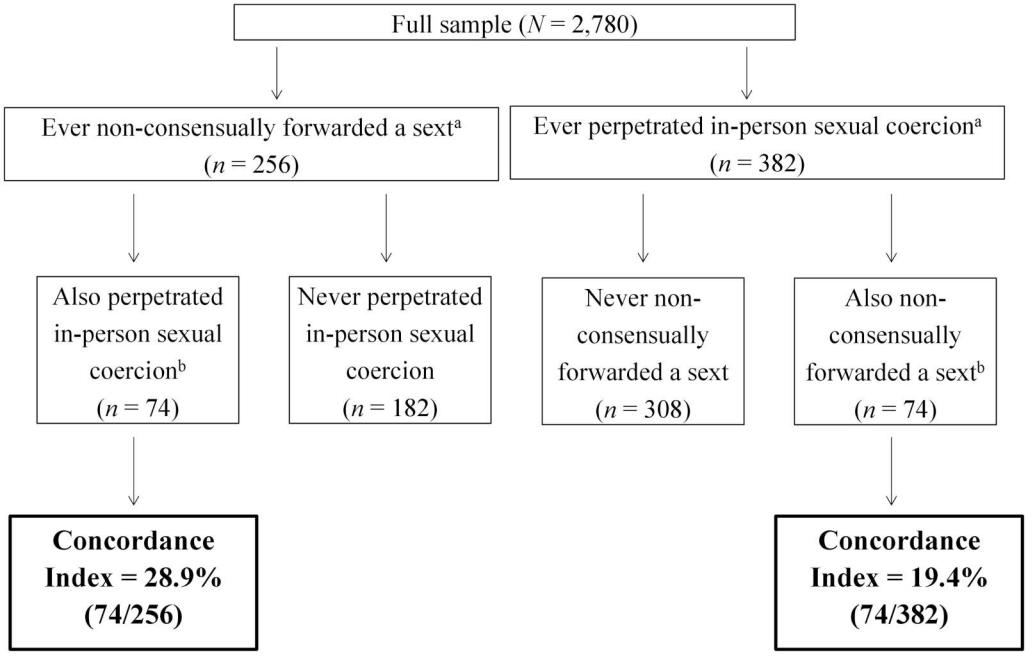

Figure 2. Concordance between types of sexual coercion.

Note. This flow chart shows how concordance was computed. In-person sexual coercion refers to in-person non-consensual sexual behaviours, like sexual assault. [a]These groups are not mutually exclusive. [b]These subgroups are identical but are being expressed as concordance with respect to different reference groups. For example, of the participants who had non-consensually forwarded a sext, 28.9% had also perpetrated in-person sexual coercion. When the reference group is all the participants that had ever perpetrated in-person sexual coercion, 19.4% had also non-consensually forwarded a sext. Thus, perpetrating both types of coercion was more common amongst those who had non-consensually forwarded a sext (28.9%) compared to those who had committed in-person sexual coercion (19.4%).

between men and women ($p > .01$; all 95% CI were overlapping, see supplemental materials Tables s8–s11).

Unique, incremental correlates for both sexual coercion types included: being a man, having reported the other offending type, peer pressure, and sex drive. Antisociality was also a unique, incremental predictor for in-person sexual coercion, but not for the non-consensual forwarding of

Table 4. Correlates of in-person sexual coercion versus the non-consensual forwarding of sexts.

	In-person (380/2,743)			Non-consensual forwarding (255/2,743)		
Predictor	AUC	*p*	95% CI	AUC	*p*	95% CI
Age	**.561**	**< .001**	**[.53–.59]**	**.570**	**< .001**	**[.53–.61]**
Gender (man)	**.579**	**< .001**	**[.55–.61]**	**.578**	**< .001**	**[.54–.62]**
Sex orientation (Straight)	.508	.601	[.48–.54]	**.446**	**.004**	**[.41–.48]**
In-person sexual coercion	–	–	–	**.581**	**< .001**	**[.54–.62]**
Non-consensual forwarding of sexts	**.558**	**.001**	**[.53–.59]**	–	–	–
Freq. received semi-nude	**.572**	**< .001**	**[.54–.60]**	**.683**	**< .001**	**[.66–.71]**
Freq. received nude	**.576**	**< .001**	**[.55–.61]**	**.685**	**< .001**	**[.66–.71]**
Total freq. received non-consensual sext	**.535**	**.029**	**[.50–.57]**	**.637**	**< .001**	**[.60–.67]**
Impulsivity	**.579**	**< .001**	**[.55–.61]**	**.586**	**< .001**	**[.55–.62]**
Peer pressure	**.641**	**< .001**	**[.61–.67]**	**.625**	**< .001**	**[.59–.66]**
Sexual consent awareness	**.545**	**.006**	**[.51–.58]**	**.549**	**.010**	**[.51–.59]**
Antisociality	**.621**	**< .001**	**[.59–.65]**	**.610**	**< .001**	**[.57–.65]**
Sex drive	**.611**	**< .001**	**[.58–.64]**	**.604**	**< .001**	**[.57–.64]**

Note. Freq.: Frequency. Bolded values reached statistical significance (i.e. $p < .05$). In-person sexual coercion refers to in-person non-consensual sexual behaviours, like sexual assault.

Table 5. Binary logistic regression showing incremental correlates of the in-person and non-consensual forwarding groups.

	In-person (n = 380/2,743)		Non-consensual forwarding (n = 256/2,743)	
Predictor	*AOR*	95% CI	*AOR*	95% CI
Age	**1.06**	**[1.03–1.10]**	**1.06**	**[1.02–1.10]**
Gender (Man)	**1.94**	**[1.49–2.52]**	**2.67**	**[1.94–3.68]**
Sexual orientation (Straight)	–	–	0.88	[0.65–1.18]
Other sexual coercion type	**1.77**	**[1.28–2.44]**	**1.83**	**[1.32–2.53]**
Freq. received semi-nude	1.04	[0.86–1.26]	**1.43**	**[1.09–1.87]**
Freq. received nude	1.08	[0.90–1.31]	**1.42**	**[1.08–1.86]**
Total freq. received non-consensual sext	1.06	[0.94–1.19]	**1.36**	**[1.19–1.56]**
Impulsivity	1.11	[0.92–1.35]	1.13	[0.90–1.42]
Peer pressure	**1.31**	**[1.19–1.44]**	**1.18**	**[1.05–1.31]**
Sexual consent awareness	1.11	[0.98–1.25]	0.997	[0.87–1.15]
Antisociality	**1.06**	**[1.02–1.11]**	1.01	[0.96–1.06]
Sex drive	**1.36**	**[1.13–1.65]**	**1.28**	**[1.02–1.60]**

Note. Freq.: Frequency. Significant results ($p < .05$) are bolded. AOR: Adjusted Odds Ratios, representing the association of the variable with the outcome, after controlling for the other variables. Nagelkerke $R^2 = .121$ for in-person group. Nagelkerke $R^2 = .192$ for the non-consensual forwarding group. In-person sexual coercion refers to in-person non-consensual sexual behaviours, like sexual assault.

sexts. That said, the 95% CI associated with antisociality overlapped between the two groups, meaning that it was not a differential correlate ($p > .01$; see Table 5). When separated by gender, the correlates for men and women were not substantially different (see online supplement Table s11).

Discussion

We sought to better understand the non-consensual forwarding of sexts. More specifically, this study aimed to understand the characteristics of those who reported having non-consensually forwarded a sext and the extent to which the non-consensual forwarding of sexts differs from in-person sexual coercion in concordance and correlates. In an online sample of 2,780 predominantly North American emerging adults (i.e. aged 18–30), we found that 1 out of 10 individuals who had ever received a sext reported having shared it non-consensually with others; a prevalence rate consistent with past findings (Mori et al., 2020). Men were more often perpetrators than women, in line with past research that men are more likely to non-consensually forward a sext (Moyano et al., 2023; Powell et al., 2019) and to commit in-person sexual coercion (Cortoni et al., 2017) than women. However, both men and women were similarly likely to have had their sexts forwarded without consent.

Most of the non-consensual forwarding of sexts was done by showing the materials directly from the perpetrator's phone (similar to Walker et al., 2021). Although most people who have had their images or videos forwarded non-consensually had a sexual relationship with the perpetrator, revenge was rarely the stated reason for forwarding the material. Instead, perpetrators reported the reasons for forwarding as being due to outside influences (e.g. pressure from friends), or because they wanted to elicit a positive reaction. Despite the non-consensual forwarding of sexts often being labelled as "revenge pornography" (Kamal & Newman, 2016; Walker & Sleath, 2017), we found that the reported reasons for the non-consensual forwarding of sexts did not often match this conceptualisation.

The current study adds to the mounting evidence that the non-consensual forwarding of sexts and in-person sexual coercion are overlapping constructs (Ehman & Gross, 2022; Kernsmith et al., 2018). Our findings suggest that the non-consensual forwarding of sexts may be part of a general proclivity for sexual coercion. For example, we found overlap between those who had non-consensually forwarded a sext and those who had committed in-person sexual coercion; though this overlap was stronger for men compared to women. We also found that more participants who had non-consensually forwarded a sext had also reported engaging in in-person sexual coercion,

than in-person sexual coercion perpetrators who also reported non-consensually forwarding a sext. As such, people who have non-consensually forwarded a sext may represent a higher-risk population, though more research is needed to examine this. Additionally, though our sample sizes preclude strong conclusions, we found that individuals who had non-consensually forwarded a sext were more likely to commit low-intensity in-person sexual coercion (84.0%) than high-intensity in-person sexual coercion (69.2%).

The multivariate models for predicting both types of sexual coercion identified similar risk factors: age, being a man, reporting the other sexual coercion type, peer pressure, and sex drive. This is consistent with overlapping etiology of the non-consensual forwarding of sexts and in-person sexual coercion; we did not find evidence for differential correlates of the non-consensual forwarding of sexts and in-person sexual coercion, except for the frequency of receiving sexts. In predicting the non-consensual forwarding of sexts, a larger number of sexts received was associated with a higher likelihood of having non-consensually forwarded a sext, even after controlling for the other risk factors (i.e. age, gender, sexual orientation, other perpetration type, impulsivity, peer pressure, sexual consent awareness, sex drive, and early antisociality). Antisociality reached the conventional statistical significance threshold (i.e. $p < .05$) for in-person sexual coercion but did not reach statistical significance for the non-consensual forwarding of sexts. The 95% confidence intervals overlapped, however, suggesting that antisociality was not a differential correlate. The higher base rate of in-person sexual coercion (13.7%) than the non-consensual forwarding of sexts (9.2%) may explain our observed difference in statistical significance. Additionally, after controlling for other risk factors, sexual orientation was no longer a significant correlate of the non-consensual forwarding of sexts. This suggests that the bivariate relationship we observed with LGBPA + individuals reporting a greater likelihood of non-consensually forwarding a sext was better explained by other factors (e.g. number of sexts received). We also found that the correlates for in-person sexual coercion and the non-consensual forwarding of sexts were similar between men and women which suggests that there is not a distinct pathway to either perpetration type for men versus women.

Limitations and future directions

The current study extends our understanding of the non-consensual forwarding of sexually explicit materials, but it is not without limitations. Our sample, albeit an online community sample, was not representative. We oversampled LGBPA + participants, which allowed for subgroup analyses but means that our overall prevalence rates are not representative of a more general sample; indeed, it may be higher. Relatedly, our data were collected prior to the COVID-19 pandemic, during which the prevalence of the non-consensual forwarding of sexts increased; in 2020, reports of non-consensual forwarding of intimate materials rose by approximately 114% (Grant, 2021). As such, our prevalence rates may be underestimated. Our study also used self-report measures without a social desirability scale. Social desirability influences the results of research examining sexual activity (Krumpal, 2013) and the disclosure of sexual violence perpetration (Bell & Naugle, 2007). As such, our prevalence rates may be underestimated despite the use of an anonymous survey.

Our study was also cross-sectional. Longitudinal studies would be essential to replicate our findings to ensure the identified correlates are predictors of this behaviour and to verify directionality. Longitudinal studies would also be required to examine the extent to which the non-consensual forwarding of sexts is a gateway to in-person sexual coercion, or if people who score highly on the propensity for sexual coercion are more prone to engage in both the non-consensual forwarding of sexts and in-person sexual coercion. Although predictors of sexual offences (e.g. risk factors, risk scales) generalise across countries (Helmus et al., 2022), our sample was primarily North American (97.9%). Future research should replicate these findings in other cultures.

There are numerous predictors of sexual coercion (e.g. Hanson & Morton-Bourgon, 2005; Schatzel-Murphy et al., 2009), including state facilitation factors (Seto, 2019). Our study did not include an

exhaustive list of theorised facilitators and motivators of sexual offending. Future research should explore alternative factors. In addition, this study employed self-reported measures, which could be influenced by recall. To help reduce the confound of memory bias on our measures, we used ranges (e.g. participants indicated whether they had sexted: never, 1–2 times, 3–5 times, 6–10 times, or 11 + times). Prospective study designs would help address recall bias because the outcomes are being reported on as they happen.

Practical implications

This study suggests that the non-consensual forwarding of sexts and in-person sexual coercion may share common etiology and therefore that programmes that have been developed for in-person sexual coercion could be appropriate for preventing the non-consensual forwarding of sexts. Future longitudinal research, however, would be required to validate our findings, which were drawn from cross-sectional research. Our study suggests that using "revenge pornography" to refer to the non-consensual forwarding of sexts is unnecessarily restrictive and does not represent the complete nature of this phenomenon. The term "revenge pornography" may also unwittingly suggest that the forwarding of sexual materials resulting because you were asked, pressured by friends, or believed that it is funny or "cool," does not constitute a violation of social script related to sexting (i.e. expectation of privacy) compared to non-consensual forwarding of sexts for revenge.

Additionally, our study adds to research (e.g. Clancy et al., 2019) suggesting that positive beliefs related to non-consensual forwarding, such as holding the belief that others typically share sexts, that forwarding sexts increases your social status, and that it is funny to forward sexts, increases the likelihood of non-consensually forwarding a sext. Given that sexting is a relatively new normative sexual behaviour (Thorne et al., 2024), the social norms associated with this behaviour are still in development. Although strategies exist to encourage safe sexting (Ojeda & Del Rey, 2022) and technologies are being developed to help prevent the non-consensual forwarding of sexts (e.g. Franco et al., 2023) very few strategies have been evaluated in terms of efficacy (Ojeda & Del Rey, 2022). In the meantime, researchers recommend promoting the safe use of technology and to educate the public as to the risks of sexting (Ojeda & Del Rey, 2022). As a comparison, drunk driving was common when access to cars became readily available and was a source of worry to researchers and criminal justice systems (Coatsworth, 1928). Social media campaigns are effective at reducing rates of driving under the influence (Perkins et al., 2010). As such, social media campaigns promoting safe sexting and educating about the risks of sexting may prove to be useful in reducing the non-consensual forwarding of sexts.

Note

1. Data from transgender participants were examined in a separate study (Holmes & Babchishin, 2024). Transgender participants had non-consensually forwarded sexts at a prevalence rate of 7.4% (23/309).

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ORCID

Emma J. Holmes http://orcid.org/0009-0005-6994-8830
Serra Baskurt http://orcid.org/0000-0002-5671-434X
Gabriella Hilkes http://orcid.org/0000-0003-2123-0246
Kelly M. Babchishin http://orcid.org/0000-0001-6659-3820

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