

From Ignoring Strangers' Solicitations to Mutual Sexting with Friends: Understanding Youth's Online Sexual Risks in Instagram Private Conversations

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ABSTRACT

Online sexual risks pose a serious and frequent threat to adolescents' online safety. While significant work is done within the HCI community to understand teens' sexual experiences through public posts, we extend their research by qualitatively analyzing 156 private Instagram conversations flagged by 58 adolescents to understand the characteristics of sexual risks faced with strangers, acquaintances, and friends. We found that youth are often victimized by strangers through sexual solicitation/harassment as well as sexual spamming via text and visual media, which is often ignored by them. In contrast, adolescents' played mixed roles with acquaintances, as they were often victims of sexual harassment, but sometimes engaged in sexting, or interacted by rejecting sexual requests from acquaintances. Lastly, adolescents were never recipients of sexual risks with their friends, as they mostly mutually participated in sexting or sexual spamming. Based on these results, we provide our insights and recommendations for future researchers. **Trigger Warning:** This paper contains explicit language and anonymized private sexual messages. Reader discretion advised.

CCS CONCEPTS

• Human-centered computing → Empirical studies in HCI.

KEYWORDS

Adolescent Online Safety, Online Sexual Risks, Sexting, Teens, Social Media

1 INTRODUCTION AND RELATED WORK

Sexual risks are one of most commonly faced online risks, often with potentially dangerous outcomes for teens [14, 23]. According to [15], more than half of the youth (ages 10-17) in the U.S. have

experienced online sexual harassment/solicitation at least once in the last few years. Moreover, one of five reported youth sexual assault cases in 2019 and 2020 was caused by technology and social media [7]. Prior research on this topic has found that adolescents encounter various types of sexual risks online such as sexual spamming [11], sexual solicitation/harassment [19], sexting [8], and sextortion [25]. For example, Razi et al. [17] analyzed public posts from adolescents about online sexual interactions on a peer support mental-health platform, and found adolescents frequently faced unwanted sexual requests from strangers, and found it difficult to turn down sexting requests from people they knew [17]. Similarly, Hartikainen et al. [10] found that peer pressure plays a role in teens' sexting online, and provided recommendations for encouraging positive communication for peer support regarding sexual risks [9]. Another study [13] investigated the types of relationships where adolescents engage in sexting and how adolescents consider sexting as an acceptable part of intimate relationships under the hood of social normative contexts. Additionally, prior literature [6, 12] has demonstrated that adolescents' online sexual experiences depend on the relationship. While existing research provides valuable insights on sexual experiences with strangers or people known by adolescents, it often groups acquaintances and friends as one entity. Therefore, there is a lack of clear differentiation between the characteristics of sexual experiences faced among these three relations; strangers, acquaintances, and friends. Yet, sexual experiences faced by teens have mostly been studied through public posts [9, 17] and sexual risks in private settings remain understudied. To overcome this gap, we analyzed unsafe sexual interactions encountered by 58 adolescents (ages 13-21) in 156 private message conversations on Instagram, as it continues to be one of the most popular social media platforms amongst teens [3]. To understand the differences in sexual risks faced by adolescents in private conversations amongst different relationships, we asked the following questions: **RQ1:** *How do adolescents experience different types of sexual risks with strangers, acquaintances, and friends on Instagram?* **RQ2:** *How do adolescents manage and respond to sexual risks based on the relationship type on Instagram?*

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2 METHODS

2.1 Data Collection and Demographics

We aimed to understand youths' unsafe sexual experiences online using a dataset [16] which included participants' (ages 13-21 years old) Direct Message (DM) conversations on Instagram. We acquired Institutional Review Board (IRB) approval and the National Institute of Health Certificate of Confidentiality to protect privacy of participants for this study. Eligible participants were English speakers based in the U. S., with a currently active Instagram account for at least 3 months during the time they age 13-17 year old, who have exchanged DMs with at least 15 people, and had at least 2 DMs that made them or someone else feel uncomfortable or unsafe. We analyzed 58 participants' data who provided either their consent, or parental consent with teen assent, based on their age. After a pre-survey to pass the eligibility criteria and a questionnaire about their social media experiences, participants were asked to download and upload their Instagram file, and flag their DMs for different risk types and risk levels, along with specifying the relationship of the person they faced the risk with. Participants were compensated with a gift card of \$50 for their time and sharing their data. The term "risky" is used interchangeably with uncomfortable or unsafe based on participants' perspectives. For each conversation that was flagged as unsafe, we asked participants to flag risk at the message-level, then identify the risk level and type of each message according to predefined risk types based on Instagram safety reporting feature. We grounded risk levels based on the existing adolescent online risk literature [24] which mentioned the risk level for youth that how much it is likely to cause emotional or physical harm to them or others: **Low Risk** comprised messages that made the participant uncomfortable but were unlikely to cause emotional or physical harm. **Medium Risk** included messaging which if continued/escalated, would have been likely to cause emotional/physical harm. **High Risk** comprised messages that were deemed dangerous and caused emotional or physical harm to the participant. We described to the participants the definition of **Sexual messages or Solicitations** as Sending or receiving a sexual message ("Sexting") –being asked to send a sexual message, revealing, or naked photo.

2.2 Data Analysis Approach

We conducted a thematic content analysis [21] of the adolescents' private conversations. We brainstormed initial codes for dimensions such as sexual risk types, sexual media, participants' role in the conversation, and participants' responses. Next, we conceptualized themes found within the conversations. Out of the 239 conversations flagged by participants as unsafe, we found 156 conversations related to sexual risks, including sexual solicitation/harassment (i.e., unsolicited sexual requests and harassment), sexual spamming (i.e., unsolicited suspicious sexual content), sexting (i.e., mutual sexual exchange), and sextortion (i.e. threats to expose sexual images for coercion into sexual activity). We then analyzed these sexual risks from the perspective of three types of relationships (based on the stated relationship by participants) – strangers (i.e. unfamiliar or unknown person), acquaintances (i.e. a known person but usually not a close friend), and friends (i.e. a known person that shares a romantic or platonic bond). For each relationship, apart from sexual risk type, we also aimed to understand other characteristics such

as sexual media (text only, picture only, text & picture, other media such as videos and GIFs, unavailable media), as well as participants' role and responses. Their roles included recipient (i.e., victim of the risk), mutual (i.e., mutual sexual exchange), discloser (i.e., disclosure of a sexual risk to someone else), and confidant (i.e., someone else disclosed a sexual risk to the participant), along with codes for responses (none, engaged, said no). Table 1 summarize our themes and their respective subcategories in each relationship. The quotes provided in this paper are paraphrased to disguise the identity of the participants [5].

3 RESULTS

3.1 Ignoring Unwanted Sexual Solicitations from Strangers Often Led to Sexual Harassment

Our results indicated that adolescents were most frequently sexually solicited by strangers (87.8%, N=137) within private conversations on Instagram, often through text-based mediums (**RQ1**). Within these conversations, **sexual solicitation/harassment** was the most common sexual risk type (74.5%, N=102). Most of the conversations with sexual solicitation/harassment risks contained unsolicited sexual requests, often accompanied with sexual images or videos, sexual comments about the participants' appearance, or unwanted sexual requests such as asking for nude photos. For example, P24 (21-years-old, female) was asked by a stranger for a sexual favor: *"I still haven't cum yet, can I get some help?"* Often, when sexual requests were ignored, the offender escalated the solicitation to harassment. For example, P24 ignored a sexual request from a stranger, after which the stranger sent another message saying, *"I am not good enough for you? you are not even that hot."* The second most common type of sexual risk from strangers was in the form of spamming (51.1%, N=70), which included sexual requests accompanied with spam links from suspicious accounts. For example, P21 (14-years-old, female) received a message from a stranger asking for an intimate chat on a suspicious website. *"If you are feelin like chattin together, click the link to talk in a more intimate place.write me here please, u wont regret it!! Find me by clicking on the picture below"*. In contrast, teens rarely experienced sexting with strangers (11.7%, N=16). Some of the sexting instances with strangers (2.9%, N=4) contained messages where the other user bribed the participant to engage in sexual activities in exchange for money. For example, P2 (16-years-old, female) shared their account information, agreeing to be a "sugar baby" for a stranger: **Other user**: *"Hello cutie would you like to be my sugar baby?"*, **P2**: *"This is my cash id xxx."* In perpetuating these sexual risks, strangers mostly used text messages (40.1%, N=55) and visual media (35.8%, N=49), such as images, videos, audio, links, or Instagram posts. A significant number of conversations from strangers (35%, N=48) also included media that was unavailable, but the language of the link often contained sexual terms (**RQ1**). Within these risky conversations, participants were mostly recipients (94.9%, N=130) or **victims of the risk with strangers**, and mostly **ignored** (87.6%, N=120) the risk (**RQ2**). This may be due to the unwanted nature of sexual risks from suspicious strangers, along with the spam content. A small percentage of conversations (4.4%, N=6) showed that participants and strangers were mutually engaged. On the other

Dimensions/Themes	Codes	Strangers (87.8%, N=137)	Acquaintances (9.0%, N=14)	Friends (3.2%, N=5)
Teens were recipient of the risks with strangers, played mixed roles with acquaintances, and were mutually involved with friends	Recipient	94.9%, N=130	64.3%, N=9	0.0%, N=0
	Mutual	4.4%, N=6	28.6%, N=4	80.0%, N=4
	Discloser	0.7%, N=1	14.3%, N=2	0.0%, N=0
	Confidant	0.0%, N=0	0.0%, N=0	20.0%, N=1
Teens faced sexual harassment with strangers/acquaintances, and more sexting risks with acquaintances/friends	Sexual Harassment	74.5%, N=102	71.4%, N=10	20.0%, N=1
	Sexual Spamming	51.1%, N=70	42.9%, N=6	40.0%, N=2
	Sexting	11.7%, N=16	50.0%, N=7	40.0%, N=2
	Sextortion	0.0%, N=0	7.1%, N=1	0.0%, N=0
Sexual risks contained text and visual media with strangers, with mostly text-based risks with acquaintances and friends	Text Only	40.1%, N=55	78.6%, N=11	100.0%, N=5
	Pictures Only,	0.7%, N=1	14.3%, N=2	0.0%, N=0
	Text & Picture,	2.2%, N=3	0.0%, N=0	20.0%, N=1
	Other media	35.8%, N=49	14.3%, N=2	20.0%, N=1
	Unavailable media	35%, N=48	14.3%, N=2	0.0%, N=0
Teens ignored strangers/acquaintances, were more likely to say no to acquaintances, and mostly engaged with friends	None	87.6%, N=120	64.3%, N=9	40.0%, N=2
	Engaged	4.4%, N=6	14.3%, N=2	60.0%, N=3
	Said No	8.0%, N=11	21.4%, N=3	0.0%, N=0

Table 1: Characteristics of teens' sexual risk experiences with strangers, acquaintances, and friends

hand, there were a few conversations (8%, N=11) where participants rejected the strangers' requests, or blocked them. For example, P29, a 16 years old participant blocked a stranger after receiving a porn link. Similarly, P17 (20-years-old, female), said no to a participant after receiving an online sexual request, and replied with, "*I don't share my snap out to unknown people.*" - P17. In summary, strangers posed the highest threat for perpetuating sexual risks, with sexual harassment being the most commonly faced risk type. However, adolescents mostly ignore the sexual risks posing stranger danger.

3.2 Ignored Sexual Harassment and Often Rejected Sexting Requests with Acquaintances

Conversations between the participants and their acquaintances made up a slim amount (9.0%, N = 14) of the total conversations that were flagged. Similar to sexual risks with strangers, sexual **solicitation/harassment** was the prominent risk type with (71.4%, N = 10) of the total conversations, most of which were text-based (78.6%, N = 11) (**RQ1**). Unlike risks with strangers, we found **sexting** in half of the conversations flagged with acquaintances (50.0%, N = 7). For example, P16 (16-years-old, female) responded and engaged with an acquaintance, **Other user**: "*you're thick not gonna lie*" **P16**: "*thic with how many c's?*" **Other user**: "*IDK, I haven't seen you in leggings in a while*" Moreover, compared to strangers, sexual spamming happened less frequently in conversations with acquaintances (42.9%, N = 6). Since spamming was usually associated with stranger or bot accounts, it is not shocking that there was a notable decrease in the occurrences of sexual spamming with acquaintances. Amongst the 14 flagged conversations, we found that most risks were in the form of text (78.6%, N = 11). Compared to risks with strangers, sexual risks with acquaintances had significantly less image or video-based media at an even rate of (14.3%, N = 2) for each non-text media. Another difference in sexual risks from strangers was that participants played mixed roles and had varying responses towards sexual encounters with acquaintances (**RQ2**). While adolescents were still the recipient for a majority of the conversations (64.3%, N=9), there was a notable increase in their role as a mutual party in the unsafe conversations (28.6%, N=4) with acquaintances, compared to those with strangers. This can be explained by the increase in sexting and comfort level with acquaintances. Moreover, there were also differences observed in the way the participants chose to respond to sexual risks. While

the majority of participants chose to **ignore** the risks (64.3%, N=9), participants were **more likely to say no** (21.4%, N=3) or engage (14.3%, N=2) with acquaintances, as opposed to conversations with strangers. In another instance of a sexual exchange with an acquaintance, P16 (16-years-old, female) got offended and attempted to set boundaries with the other user: **Other user**: "*I might wanna touch it just to let you know*", while responding to that acquaintance participant replied **P16**: "*That's really not ok. You're crossing a boundary that I am not ok with.*" Overall, while many participants ignored sexual solicitation/harassment or spamming with acquaintances, several participants showed mixed responses by either saying no or engaging in sexting with acquaintances.

3.3 Mutual Participation and No Boundary Setting during Sexting and Sexual Spamming with Friends

Participants were least likely to flag conversations that involved friends (3.2%, N=5). In contrast to the two previous relationships, sexual solicitation/harassment was the lowest risk to occur (20%, N=1). Instead, **sexual spamming** (40%, N=2) and **sexting** (40%, N=2) were both equally prominent sexual risks observed with friends, all in text-based mediums (100%, N=5) (**RQ1**). Similar to conversations with acquaintances, sexting was a commonly observed risk in conversations with friends. Adolescents **mostly played a mutual role** in flagged conversations with friends (80%, N=4), or confided about a sexual interaction with friends (20%, N=1) (**RQ2**). Unlike sexual risks with strangers and acquaintances, participants were never recipients or victims with friends. Therefore, participants were significantly more engaged in sexual experiences with friends (60%, N=3), and sometimes ignored these messages (40%, N=2). For example, P3 (15-years-old, female) engaged in sexting with their friend, encouraging the interaction: **Other user**: "*Wanna a nutting video with sound*" , **P3**: "*Nut while playing me a song at the same time*". Intriguingly enough, participants never said no, set boundaries, or rejected the sexual requests with their friends.

4 DISCUSSION

To counter sexual harassment risks with strangers that often escalated when ignored by adolescents, early detection and prevention of risks with strangers is the key. Automated approaches such as machine learning algorithms [20] with contextual information could be used to detect those risks [18, 22]. Additionally, we identified the

difference in media types of sexual risks across relationships (e.g., more image-based spam from strangers), which can be essential for protecting youth against largely spam sexual media coming from strangers. These findings add to the literature [2] about shared media in unsafe conversations. Our results indicate that sexting with platonic or intimate relations has become a normal part of adolescents' sexual development, which supports the paradigm shift towards promoting safer ways for adolescents to engage in consensual sexual conversations. Our study enables participants to efficiently handle any adversarial situations concerning with sexual risks. Moreover, we extended prior research by disentangling sexual risks and responses with acquaintances and friends (often treated as a single unit [9, 17]). We learned that adolescents are more likely to mutually engage with friends, and set boundaries with acquaintances, implying that adolescents find it hard to say no to sexting with their close friends. Therefore, we recommend future researchers and designers to customize safety features based on the users' history and relationship with the other person (e.g., conversation history, intimacy, mutual friends, etc). For example, the frequent risks from strangers causing unnecessary spam and discomfort may be filtered, whereas automated recommendations could be provided to reject sexual requests with acquaintances, or to leave the conversation if they feel uncomfortable while sexting with friends [1, 4]. A limitation of our study is that we analyzed relatively small data set of 156 conversations from 58 participants to understand sexual risks with different relationships. Another limitation is that we were unable to access many of the unavailable media within risky conversations, leaving some gaps in our interpretation. Lastly, our analysis is only based on the conversations provided by the victims. In future work, we plan to analyze more private data for understanding sexual risks and how they evolve over time, such as indicators leading to the risk. Eventually, this will help with training data sets for detecting and countering sexual risks online.

5 CONCLUSION

Our investigation showed how adolescents' sexual risks and reactions to those risks differed amongst three types of relationships. We found that ignoring unsolicited sexual requests from strangers often escalated to harassment. Adolescents frequently managed sexual harassment from acquaintances by saying no to sexual requests. However, youth had challenges setting boundaries with friends and engaged in sexting without limitations. Our work underscores the value of considering relationship and media types for developing automatic approaches for sexual risks detection and mitigation based on perspective of the youth victimized in private conversations.

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