

Let's Talk about Sext: How Adolescents Seek Support and Advice about Their Online Sexual Experiences

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ABSTRACT

We conducted a thematic content analysis of 4,180 posts by adolescents (ages 12-17) on an online peer support mental health forum to understand what and how adolescents talk about their online sexual interactions. Youth used the platform to seek support (83%), connect with others (15%), and give advice (5%) about sexting, their sexual orientation, sexual abuse, and explicit content. Females often received unwanted nudes from strangers and struggled with how to turn down sexting requests from people they knew. Meanwhile, others who sought support complained that they received unwanted sexual solicitations while doing so—to the point that adolescents gave advice to one another on which users to stay away from. Our research provides insight into the online sexual experiences of adolescents and how they seek support around these issues. We discuss how to design peer-based social media platforms to support the well-being and safety of youth.

Author Keywords

Adolescent Online Safety; Social Support Seeking; Online Sexual Experiences; Sexting; Sexual Risks; Peer Support.

CSS Concepts

• Human-centered computing~Social content sharing

INTRODUCTION

According to Pew Research [5], 95% of teens in the United States have access to a smartphone, and 45% say they are constantly online. As such, adolescent relationships are increasingly being mediated by their technology use. Over half (57%) of teens (ages 13-17) have started a new friendship online, and of the 35% of teens that have had a romantic relationship, 8% met their romantic partner online [30]. Another 55% of adolescents have used social media to flirt with someone they are interested in [30]. While the internet affords adolescents numerous opportunities to form new relationships and explore their sexual identities [47], the flip side is that it can also pose new sexual risks. For Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from Permissions@acm.org.

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instance, the Crimes against Children Research Center estimates that 23% of youth in the U.S. have experienced unwanted exposure to pornography, and 9% reported receiving unwanted sexual solicitations online [23]. Over half of youth in the U.S. (ages 10 to 17) have received at least one online sexual solicitation (wanted or unwanted) in the past year [37]. Therefore, examining the online sexual experiences of modern-day adolescents is an important, and growing area of research within the adolescent developmental psychology literature [19,25,44] and within the SIGCHI research community [6,7,20,34,39,53]. These online sexual experiences are a new manifestation of an age-old social computing phenomenon [14,35,41] that warrants our sustained attention.

Youth leverage the internet to seek support and advice about relationships [26] and their sexual health [25,44]. Yet, less is known about how they seek advice and support via the internet about their *online sexual experiences* (i.e., sexual interactions that are mediated by technology). In 2014, Weinstein et al. [51] found that using the internet as a means to seek intimacy with others has become a key stressor for adolescents. These researchers were among the first to analyze digital trace data from adolescents to gain deeper insights into their online experiences. We build upon this prior research by analyzing social media trace data from an online peer support platform to understand how adolescents seek support and advice regarding their online sexual experiences. We pose the following high-level research questions:

- **RQ1:** *For what purpose do adolescents post on online peer support platforms when discussing their online sexual experiences?*
- **RQ2:** *a) What types of sexual experiences do adolescents most frequently post about? b) What are key characteristics of these experiences?*
- **RQ3:** *What are the consequences of adolescents experiencing these online sexual interactions?*
- **RQ4:** *What are the key challenges associated with adolescents seeking online peer support about their online sexual experiences?*

To answer these questions, we conducted a thematic analysis of 4,180 posts made by 3,034 adolescents (ages 12-17) on an online peer support platform for youth and young

adults. We found that adolescents used the platform to seek support, connect with others, and give advice about their online sexual experiences. For the most part, females were the primary posters, asking for advice on how to combat peer pressure when a romantic interest or friend asked for nudes. A significant number of adolescents expressed concerns about unwanted sexual advances, while they were seeking support online—to the point that some posts warned adolescents about other malicious users. Another major theme was that adolescents tried to connect with others who had similar life experiences as them. Our study makes the following research contributions:

- Analyzes social media trace data to provide an unfiltered view into the lived online sexual experiences of over 3,000 adolescents.
- Provides a deeper understanding of peer support seeking behaviors for their online sexual experiences.
- Uncovers the challenges of online peer support and makes recommendations for design.

Our research makes empirical contributions to the fields of Human-Computer Interaction (HCI), adolescent online safety, and online peer support. Our findings will also help designers create online peer support forums that consider the vulnerability and online safety of adolescents.

BACKGROUND

The SIGCHI community has a history of engaging in important work related to sensitive online disclosures and sexual abuse [3,4,31,33]. For instance, Andalibi et al. [4] investigated self-disclosures by sexual abuse survivors and the relationships between anonymity, disclosure, and support seeking. Similarly, our work studies self-disclosures about sexual abuse but more broadly examines other online sexual experiences. In contrast, our research specifically focuses on adolescents, who are developmentally different than adults. Below, we situate our research at the intersection of technology, sexuality, and online risks for adolescents. We highlight the gaps within the literature to emphasize the contributions of our research.

Adolescents, Technology, and Sexual Exploration

Emergent technologies, such as social media and mobile smartphones, have provided new means for adolescents to explore, seek advice, and talk about sensitive topics, such as their sexuality, sexual health, and sexual experiences [17,44,52]. For example, Suzuki and Calzo [44] studied two online bulletin boards to understand the types of sexuality and relationship questions adolescents asked their peers. They found that adolescents often posted about their physical, emotional, and social selves. Romantic relationships and sexual health were the most common topics discussed. In contrast, Forte et al. [17] surveyed high school students about their social media and information-seeking behaviors. They found that students frequently asked their social networks about school-related topics, rather than sexual identity or health. While this work demonstrates that adolescents leverage the internet to seek

support and information, it also suggests that adolescents use online platforms differently based on the context (e.g., health) and audience (e.g., classmates). Further, this research gives us insights into how adolescents seek support for sexual health in general, rather than technology-mediated sexual experiences. We build upon this literature by examining how adolescents seek support about online sexual experiences via online platform for peer support.

Adolescent Online Safety and Sexual Risks

The bulk of research around adolescents and their online sexual experiences has primarily focused on sexual risks, including sexting (e.g., [13,24,28,37,40,48]), unwanted online sexual solicitations [36], and online sexual grooming [18]. In 2018, Sklenarova et al. [42] conducted a survey with German adolescents to understand their experiences with unwanted sexual solicitations. They found that 51% of adolescents had experienced online sexual interactions, mostly with peers. Only 10% of these experiences were perceived as negative or unwanted, but those who lacked social support received more unwanted solicitations [42]. While such findings are valuable, most of our knowledge about what adolescents are doing online, as well as the outcomes associated with these activities, is derived from large-scale surveys [23,29] or smaller-scale interview studies [9,32] that rely heavily on self-reports [39], which may be limited by recall bias [21] and social desirability bias [16]. Only a few studies have leveraged digital trace data of adolescents. In 2014, Doornwaard et al. [12] friended 104 Dutch adolescents on Facebook and conducted a content analysis of adolescents' friend-based interactions and uncovered that about a quarter of the profiles contained sexual and romantic references. A clear theme from the literature is that adolescents frequently experience sexual interactions online; yet, there is still more to uncover in terms of how adolescents seek support and advice regarding these online sexual interactions. Further, more research needs to examine the interplay between adolescent mental health, online peer support, and the online sexual experiences adolescents discuss via such platforms [50]. The contributions of our work lie at these intersections.

METHODS

We analyzed digital trace data from an online peer support platform. The platform operates primarily as a mobile app targeted towards youth to provide mental health support. The primary researcher licensed the dataset that contained about five million posts and 15 million comments made by approximately 400 thousand users. The dates of the posts ranged from 2011 to 2017. We anonymized the name of the platform to protect the identity of the adolescents included in our data analysis. Approximately 70% of the users on this platform are between the ages of 15-24 with 6% (21K users) between the ages of 12-15. We filtered posts by age to only include adolescents between the ages of 12-17. While nationality was not a variable in the dataset, most of these youth were English speakers primarily from the United States, United Kingdom, and Europe.

Considerations for Data Ethics

Our Institutional Review Board (IRB) determined that this research was exempt from human subjects' review because personally identifiable information (e.g., usernames) was removed prior to sharing the dataset with the researchers. However, we still took the utmost care to preserve the confidentiality and privacy of the adolescents within our dataset. Due to the complex nature of the dataset (e.g., open-ended text responses without images), we took an extra precaution of requiring all research assistants who had access to the dataset to complete IRB CITI Training for working with human subjects before working on this project. We also made sure that any personally identifiable information was removed prior to including any quotations within our results. We confirmed that none of the quotations included in this paper could be tied back to the original poster through a search on Google. Additionally, due to the explicit nature of many of the posts (e.g., describing sexual assault, sexual acts, self-harming behaviors, etc.), we took special care to continually assess the mental health vulnerabilities of our research team [2]. As a result, we revised our scoping criteria (as discussed below) to remove self-harm content that was less relevant to this analysis and reassigned one undergraduate research assistant to work on another project that was less triggering for them. There were no cases where we had access to personally identifiable information for individuals reporting sexual abuse or imminent risk to a minor. Therefore, we did not need to invoke our status as mandated child abuse reporters during this research project.

Scoping and Relevancy Coding Process

Given the dataset included over five million posts, the goal of our scoping process was to scale down the dataset to a practical size for qualitative analysis. Therefore, we focused our investigation on original posts (not comments) made by adolescents (ages 12-17) that discussed online sexual experiences, behaviors, or interactions. To do this, we first included search terms for popular social media platforms between the years 2011 to 2017 [55], which included Instagram, Kik, and others. Then, we searched for common sexual jargon used by adolescents [46]. Next, we supplemented these terms through an exploration of the dataset. research assistants read over 5,000 posts to generate a list of keywords relevant to our topic. Once we reached a saturation point where reading an additional 50 posts did not result in additional keywords, we concluded this process. The final lists of keywords (**Table 1**) were grouped conceptually at the intersection of "online" terms and "sexual" terms. The first author created a SQL query to identify posts that contained these terms, and the research team worked together to refine and optimize the query for relevance. The final data query resulted in a record set of 8,271 posts made by 6,351 adolescents. The posts were then divided among five research assistants for relevancy coding. Two independent coders read each post and coded it based on the following inclusion criteria:

Keywords
Online terms: Facebook, Instagram, Tinder, Bumble, Grinder, Snapchat, Craigslist, Skype, Hinge, Whatsapp, Kik, Discord, Messenger, Omegle, Vimeo, Vine, Tumblr, Myspace, 4chan, Reddit, forum, blog, video chat, Facetime, ft, message, dm, sent, send, pm, online, meet on, met on, webcam, gaming, cyber, blackmail, internet, AMOSC, f2f, LMIRL
Sexual terms: Sex, nude, naked, flirt, STI, STD, grooming, LDR, predator, rape, solicit, dick, threesome, 3some, pussy, vagina, penis, cock, cunt, anal, clit, clitoris, thick, boob, breast, tit, nipple, oral, sodomy, finger, handjob, touch, balls, fondle, birth control, BCP, plan b, condom, #metoo, nonconsensual, pedophile, catfish, BDSM, bondage, dominant, sadism, masochism, lesbian, gay, cougar, smash, virgin, underage, minor, nsfw, make out, made out, sugababy, horny, LEWD, blowjob, BJ, friends with benefits, DFT, hentai, porn, dry hump, Netflix and chill, thirsty, TDTM, cum, sperm, semen, cunnilingus, dildo, ejaculate, masturbate, erect, fellatio, foreplay, foreskin, genital, hepatitis, herpes, homo, hymen, IUD, lube, morning after, morning wood, libido, hickey, lick, one night stand, orgasm, rimming, scrotum, vibrator.

Table 1: Scoping Search Terms

1. The post involved an online component—beyond that adolescents were posting, and
2. The post discussed sexual topics, such as sexuality, sexual behaviors, and/or sexual experiences.

For example, the post below came up in our search results (based on the words in bold):

*"I **smashed** my iPod by accident and haven't been able to get a new one until now. Nothing serious.... I'm okay :) I'm hear for anyone who needs to talk to me... At ANYTIME!! <3 **Kik**: [Kik ID]" 14yr old Female*

The post was deemed irrelevant because it had an online component but did not discuss anything sexual (the term "smashed" was not used in a sexual manner). Posts were removed because they were surveys (26%), duplicates (5%), public service announcements (e.g., phone numbers to hotlines) (4%), unoriginal content (e.g., song lyrics) (3%), or were not written in English (<1%). We calculated Interrater Reliability [43] on our relevancy coding and found substantial agreement (Cohen's kappa=0.71). To resolve conflicts, we formed a consensus among all five coders. Our final dataset included 4,180 relevant posts.

Data Analysis Approach

We conducted a qualitative thematic analysis [10] of the adolescents' posts. First, two independent raters coded 10% (N=418) of the posts to generate initial codes for the analysis. Five research assistants split up these posts and met to form a consensus across their codes and create a master codebook. Then, two independent coders (of the same group of research assistants) recoded this data to confirm IRR, which ranged from substantial agreement (0.71) [43] to a complete agreement (1.00). Next, the remainder of the dataset was divided among the five coders

Purpose of Posts (RQ1)	Seeking Support (83%, N=3,474)	Trying to Connect (15%, N=635)	Giving Advice (5%, N=200)
Types of Teen Online Sexual Experiences (RQ2a)	<ul style="list-style-type: none"> • Sexting (78%, N= 2,706) • Sexual orientation (16%, N=549) • Sexual abuse (8%, N=292) • Explicit content (7%, N=237) 	<ul style="list-style-type: none"> • Sexual orientation (62%, N= 392) • Sexting (37%, N=234) • Sexual abuse (5%, N=30) 	<ul style="list-style-type: none"> • Sexting (62%, N=123) • Sexual orientation (27%, N=54) • Sexual abuse (21%, N=42)
Characteristics of Online Sexual Experiences (RQ2b)	Situational context	Codes: Initiator, Recipient (Unwanted)	
	Relationship context	Codes: Stranger, Acquaintance/Friend, Dating, Family	
	Coping response	Codes: Engaged, Rejected (Blocked or Reported), Did nothing	
Consequences of Online Sexual Experiences (RQ3)	Consequences	Codes: Mental Health, Bullying, Exposure, Blackmail, Positive Feelings	

Table 2: Final Codebook Dimensions, Themes, and Codes

for coding. Once the data coding was complete, the first author reviewed the codes and used an axial coding process [11] to merge similar codes, groups codes conceptually by theme, and identify emerging patterns. Table 2 presents the final codebook dimensions, themes, and codes. To address RQ1, we identified three primary types of posts: 1) Seeking support from others, 2) Trying to connect with others, and 3) Giving support to others. Across all three types of posts, we identified the following types of sexual experiences (RQ2a) being discussed:

- **Sexting:** Posts that mention sending or receiving sexually explicit messages or photos, cybersex, or other sexual exchanges online.
- **Sexual orientation:** Posts exploring one's gender identity or sexual orientation.
- **Sexual abuse:** Posts discussing a sexual violation, harassment, abuse, or aggressive sexual behavior.
- **Explicit content:** Posts about viewing sexual content online, such as pornography.

Finally, for the posts that sought support about online sexual experiences (N=3,474), we identified the following salient characteristics of the interaction (RQ2b):

- **Relationship context:** The relationship (e.g., stranger, acquaintance, or dating) between the adolescent and person in which they had the online sexual experience.
- **Situational context:** Whether they initiated or were the recipient of an unwanted solicitation.
- **Coping Response:** How they responded (e.g., engaged in the activity, rejected an advance, or did nothing).

Finally, we analyzed the consequences (RQ3) associated with each type of sexual experiences, which included mental health related problems, bullying or harassment, unwanted exposure, blackmail, or positive feelings. We allowed for double-coding and did not apply codes if they could not be determined from the post. Therefore, percentages in Table 2 may add up to slightly more or less

than 100% for each dimension coded. We present our findings in descending order based on the frequency of the coded dimensions within our dataset.

RESULTS

In this section, we present our results. We use Table 2 as the over-arching structure for this section.

Descriptive Characteristics of Adolescent Users

The 4,180 posts in our analysis were made by 3,034 unique adolescents. The adolescents were between 12 and 17 years old, with the average age (at the time of posting) being 15 years old. Most of the adolescents were 16 years old (28.2%), while the rest were 17 (26.3%), 15 (22.3%), 14 (15.5%), 13 (6.4%), and 12 (1.3%). Most of the posts were from female users (73%), with 16% from males, and 11% from non-binary or unspecified gender individuals. About 38% of the posts were posted anonymously. These adolescents had been active for an average of 7.5 months from the date they posted in the dataset. On average, the adolescents posted 206 original posts ($SD = 436$) and 898 comments ($SD = 2,040$). About a quarter of the posts (26%) specifically mentioned using other social media platforms. Of these posts, the majority mentioned Kik (43%), followed by the peer support platform (15%), Snapchat (12%), Instagram (8%), Facebook (8%), Skype (4%), Tumblr (4%), and Omegle (2%). Adolescents disclosed mental-health issues (18%), that they engage in self-harming behaviors (5%), and they thought about or attempted suicide (4%). They also mentioned that they have other mental health issues such as anxiety, personality disorders, etc. (4%). Adolescents posted on a range of topics, including their offline sexual experiences, relationship advice, hopes and dreams, family, dieting, mental health, self-harm, and suicidal ideation. However, we made the explicit choice to not conduct a person-based analysis that could unintentionally aggregate disaggregated data in a way that would make an individual adolescent identifiable.

Seeking Support for Online Sexual Experiences

Adolescents who sought support spoke generally to the crowd—asking everyone for advice, sharing their intimate personal experiences, or were just venting, so they could be heard. They openly complained about their problems, shared their stories, and recounted awkward situations for which they explicitly sought support and/or advice. We identified four different types of online sexual experiences for which adolescents sought support: 1) Sexting (78% of support seeking posts, N=2,706), 2) Sexual Orientation (16%, N=549), 3) Sexual Abuse (8%, N=292), and 4) Explicit Content (7%, N=237). In the subsections below, we describe each type of support seeking in more depth.

Seeking Support about Sexting

The most prevalent type of sexual interaction for which adolescents sought support was sexting. Of the posts about sexting, 66% involved requests to exchange sexual messages and/or nude photographs or videos. The other 43% discussed cybersex via real-time messaging or video-sharing apps. First, we analyzed these posts to understand the *situational context* of the experience—whether the adolescent said they were the initiator or recipient of the request. In almost half of the posts (46%) adolescents said that they received a request, rather than being the initiator (19%). Of the sexting posts where the adolescent was the recipient, 61% implied that the exchange was unwanted:

“GAH! I can't believe that I was talking to a guy for 5 minutes and out of nowhere he just sends me a naked pic. THE FUCK?! Honestly, WHY?” 13yr old Female

In cases where users initiated the interaction, they often thought sexting might bring their relationship to the next level. Sometimes, they offered to send nudes to a romantic partner but did not receive the response that they were expecting. Therefore, they sought advice on how to interpret the situation, after it took an unexpected turn:

“I have been going out with my boyfriend for like 5 months now and we haven't done anything past kissing. I offered to send a nude a few nights ago and he got really pissed and said how I shouldn't send nudes to people. we haven't talked since. Confused!?!?” 14yr old Female

In these situations, adolescents (mostly females) were often more concerned about how the sexting interaction changed the nature of their relationships with others, rather than the repercussions from having engaged in sexting itself. Other times, they posted because they sent a nude photo or engaged in cybersex, but then something negative happened (e.g., someone sharing the nude images to others at school) to make them regret their own actions. Youth sought advice on how to recover from these types of mistakes:

“I sent nudes to my friend. I know it's stupid but the compliments were so nice and made me not hate myself for a while, I trusted him...at school he showed half my grade. In so embarrassed I cut when I got home and filled the tub

with blood...I hate him so much, but I hate myself more. Please help :(“ 15yr old Female

In most cases, when adolescents said they initiated a sexting interaction, they expressed doubt, regret, and confusion. Their posts reflected the need to get feedback from others on how to recover from these situations.

Next, we explored the *relationship context* between the youth and the people in which the sexual exchange occurred. Most of the posts for sexting were regarding interactions with strangers (37%). Adolescents complained about unsolicited nudes and sexual advances and expressed disappointment that people just wanted to use them as a sexual object, rather than get to know them for who they were. When they talked about sexting requests from strangers, they were more likely to complain that the request seemed out of the blue or random. They were less likely to feel pressured or to reciprocate in the exchange. In contrast, 30% of the posts involved sexting interactions with a romantic interest. Usually, adolescents asked for advice on how to navigate sexting within their relationships. Male adolescents were more likely to ask for advice on why sexting exchanges stopped with a romantic partner, implying they wanted the interactions to continue:

“My girlfriend and I are long distance and before she met me in person we often did sexual things on Skype. Ever since she went back home we haven't done anything:/ Any advice” 17yr old Male

Meanwhile, many adolescents expressed excitement and nervousness when sexting became a part of their relationships. They were curious about these new sexual experiences and concerned about doing it safely:

“I just sexted with my boyfriend for the first time and he's 14 and I'm 15 but omg. idk. it was actually kinda fun...I haven't sent any nudes. so I'm safe...agh. idk. can't tell anyone cuz then they'd judge me.” 16yr old Female

Yet, females were also often frustrated that they were being pressured to share nudes, and scared that if they did not, they would be rejected by their love interest:

“I am worthless. All my bf like me for one stupid thing. Nudes pics. And when I refuse to send them they brake up w me! I want to slit my wrist so bad!” 15yr old Female

Females were also confused by their male friends, who made unwanted advances, struggling to set boundaries:

“One of my best friends from school is getting really weird... He was talking about sending me dick pics and now he's telling me he's really horny... I've just stopped replying because I don't want to go there with him... He means to much to me... Can I just ignore him?” 17yr old Female

We were also interested in understanding how adolescents *coped with or responded* to these sexting situations. For the posts in which they were recipients, most of them (33%) did not engage in the interaction (i.e., did not send nudes or

sexual messages). When the initiator of the request was a stranger (sometimes another user on the platform), it was easier for them to voice their desire not to engage:

“There’s a guy I message off here...he keeps trying to sext me and I’m constantly making it 100% clear I don’t want to do that 😡” 14yr old Female

Others either blocked or used in-app reporting features to stave off the unwanted request. Often, youth posted their annoyance about having to deal with unwanted solicitations when they were already dealing with other stressors.

“Some annoying fuck boy just sent me a dick pic. I blocked and reported him...this day has been annoying overall and he is the last thing I really needed.” 15yr old Female

Some (16%) did not take any actions in response to receiving a sexting request or receiving nudes. This occurred more often when the adolescent knew the person who made the request. For instance, when the initiator was an acquaintance, friend, or romantic interest. In these cases, they often ignored the request or receipt of nude material because they did not want to damage the relationship:

“The guy I really like keeps messaging me, he’s really nice but he keeps sending dick pics. I ignore them but he carries on...like wtf do I do?!” 17yr old Female

Meanwhile, 15% of the posts indicated that adolescents actively participated in the sexting exchange after someone else initiated it. Adolescents (mostly females) expressed regret (similar to when they initiated the exchange) and reflected on how they felt pressured. In some cases, they said that others threatened to self-harm or kill themselves if they did not comply with the request to send nudes:

“My friend told me she would kill herself if I didn’t send her a nude 😞 I feel used yet again I did it but... Idk what to feel anymore” 14yr old Female

Adolescents also received nude pictures from someone else (usually someone they knew), which made them aroused, so they reciprocated. Then, they sought advice on how to interpret how this might affect their relationships:

*“So I’ve liked this guy for 6 years and he’s like my best friend and we love each other so much but like as friends. He’s 14. And he just asked me to send pictures to him. Like naked.... And he sent me a pic of his d**k and it kinda turned me on. I kinda sent him a pic back. What does that mean?”* 14yr old Female

Many of the posts highlighted the complicated relationships within the adolescents’ lives, where best friends sometimes tried to cross the line to make the friendship sexual. Often, when they posted about sending/receiving nudes to others, even their romantic partners, they expressed reluctance, ambivalence, and guilt, asking advice as to whether they should be sending explicit photos at all. Peer-pressure emerged as a common theme, where female adolescents felt

like they had to exchange sexual images with their love interest if they wanted the relationship to continue:

“He finally said I love you. But then right after he started asking for nudes. And i realized that he only said it so I’d send him nudes. I don’t want to but I’m scared he’ll break up with me” 14yr old Female

In summary, adolescents often sought support about unwanted sexting solicitations from strangers but struggled the most when these solicitations came from people they knew. Next, we discuss the characteristics of the adolescent posts which sought support for their sexual orientation.

Seeking Support for Ones’ Sexual Orientation or Identity

Within the support seeking posts, 16% (N=549) were posts where adolescents were asking advice as they explored their sexual identity. These posts were often made by Lesbian, Gay, Bi-sexual, Transgendered, and/or Queer (LGBTQ) adolescents, or those who were still figuring out their sexual orientation. The *situational context* of these posts varied significantly from the posts about sexting; in most cases, adolescents were the initiator (44%) rather than the recipient (21%). Unlike support seeking posts about sexting, posts about sexual identity and orientation often did not involve another party, so adolescents were simply posting about their own experiences, so that others could help them disentangle their thoughts and emotions:

“So I feel very confused about my sexuality. I’ve had crushes on guys (I’m a girl) and I’ve never had a crush on a girl, I think lots of girls are hot/sexy/beautiful ect. And if I see a dick on tumblr, it just freaks me out and I just don’t like it at all really. If anyone could help me “find myself” that would be great.” 13yr old Female

Adolescents who posted about being the recipient of interaction about their sexual orientation often described a cyberbullying situation (see *Consequences* for more details). When we coded based on *relationship context*, 27% of such messages came from strangers. In some instances, random people tried to convince adolescents that they were wrong about their own sexual identity:

“A guy I didn’t know messaged me on kik asking me out after talking to me for twenty minutes. When I told him no and that I don’t like guys he said that I don’t know that and that being gay could be cured anyways. He kept trying to convince me that I wasn’t gay. He then proceeded to tell me that I’m just a girl with tomboyish tendencies and that I’m just childish when I told him I was gender fluid...” 17yr old Non-binary Adolescent

In about 26% of the posts, adolescents asked for advice about mixed messages they received from friends and/or acquaintances that made them question their friend’s sexual orientation, and sometimes, even their own:

“My best friend sends me nudes and flirts with me a lot when i ask her if she likes girls she says no .but that doesn’t

make any sense? and i kinda like her.btw im bi wif help 🙄” 15yr old Female

Fewer posts described a situation with a romantic partner (9%). In these cases, adolescents in non-heteronormative relationships sought advice on how to navigate disrespectful questions about their relationships:

“So Im dating this girl and we're constantly asked 'who's the man in the relationship?' I'm pissed cause 1st off were both females...Neither of us have figured out who is either submissive or dominate in this relationship...I didn't want shit like this.” 15yr old Female

In some cases (7%), posters described their challenges regarding their families. They expressed gratitude that they could come to the internet for advice when their families were not understanding. They wanted help on how to come out to their families. These adolescents expressed relief that they were receiving support for their choices and wanted to share that relief with others in the support community. In summary, they used the online peer support platform to explore their sexual identities and get advice on how to interpret their own internal struggles around gender and sexuality, as well as how to deal with how this identity affected their interactions with others, both on and offline.

Support Seeking for Sexual Abuse

A relatively small number of posts sought support for online sexual abuse (8% N=292). Some of these posts were about online sexual interactions leading to rape, while others described cyber-violations that emotionally harmed the adolescent given past sexual abuse. Since the posts were categorized as abuse, adolescents were in all cases the recipient of the sexual interaction, rather than the initiator. Many of these posts were significantly longer than posts in the previous categories, often using a narrative approach to tell their stories, as there was a lot for these adolescents to unpack. In several cases, posts that would have otherwise been classified as unwanted sexting interactions were coded as abuse due to the adolescents' personal history and emotional trauma. Often, someone unintentionally brought back memories of past sexual abuse that made the adolescents feel vulnerable, violated, and triggered:

“EEEEW!!!! some guy just randomly messaged me on Kik and asked if i had a big... i cant even stand to say it... i was raped when i was five and the dude that did that to me... kept saying "look at you, you have a peanut!!!!" #ImScared” 16yr old Male

In other cases, the unwanted interaction was with an adult that the adolescent knew and realized that the behavior was inappropriate. Below, the 16-year-old female asked the community whether she should entrap her predator to get him “sent down,” or whether doing this would be wrong:

“There's a man who's is my dads friend...he just asked me to send him a pic of me in my bra. Am I doing a bad thing or carry on and get him sent down? Obviously I have been

abused as a child and I hate pedophiles I'm just helping clear the world if a sicko I'm 15 he's 40 he has been messaging me for over a year.” 16yr old Female

In terms of *relationship context*, 45% of the posts involved a stranger. These adolescents recounted situations where they were forced to engage with someone else sexually online, often years after the abuse occurred:

“i was 11 when some 20 something year old man forced me to send him nudes and forced me to do gross things on facetime, telling me he'd kill me if i didn't, or that he'd send a video of me watching him jack off to all my contacts.” 16yr old Male

About 21% of the posts involved acquaintances. In these cases, the abuse occurred both online and offline. Like the previous example, posters often felt forced into a situation they could not control. Sometimes this involved past consensual interactions that the adolescent later regretted. They posted because they felt trapped and scared.

“I've been sexually abused/harassed online and in real life by these guys at my school but i can't actually get help because i... Did some stuff with one of them so if i try to tell someone, they have blackmail on me, and i could potentially get arrested and im terrified.” 15yr old Unspecified Gender

Another 17% of the online sexual abuse posts involved a significant other. Again, these posts often co-mingled offline and online abuse that happened in the past with an “ex.” Adolescents felt triggered and needed somewhere to share and these traumatic experiences. A small percentage (7%) of adolescents posts mentioned online sexual abuse involving a family member (e.g., parents, siblings, uncles).

“so last night I asked my brother if he wanted to smoke weed with me he said no so then after awhile he asked for my snapchat I gave it to him he asked me if I wanted to see his dick I said WHAT” 14yr old Female

A concerning trend across the sexual abuse posts was that the poster did not indicate reporting the abuse to the proper authorities. This was often because they felt trapped by their abusers or ashamed by their own actions.

Seeking Support for Sexually Explicit Content

The least common (7%, N=231) type of sexual interaction for which they sought support was sexually explicit content. In about 29% of the posts, they were the recipients of explicit content, while in 23% of the posts they consumed pornography at their own volition. In the posts where adolescents were the recipients, 19% indicated that the interaction was unwanted. In most cases, they complained about unwanted explicit content showing up in their social media feeds from the people they were connected to online:

“I'm sick off it seening half naked, nude, bra and undies on my feed Instagram, Facebook and everywhere. It's so disgusting 🙄” 17yr old Female

Adolescents also described situations that occurred with an acquaintance (15%) or romantic partner (15%). In these cases, they were often being pressured to consume sexually explicit content for the benefit of the relationship:

“I have a fear of sex and nudity. My boyfriend is nice he wanted to help me...He asked me to watch porn because he thought watching it would make me less scared. But turns out I got even more scared.” 15yr old Female

In summary, we discussed support seeking for different sexual categories and their characteristics. Next, we discuss the consequences of online sexual experiences.

The Consequences of Online Sexual Experiences

Next, we explored the *consequences* identified in the posts after adolescents were involved in online sexual interaction.

Negatively Impacted Mental Health

Many posts explicitly or implicitly described how online sexual experience negatively impacted the adolescent’s mental health. This was most prevalent within sexual abuse posts (48%), where adolescents described emotional and mental trauma, combined with guilt, shame, and fear:

“I’ve been raped by a guy I met online. I thought it would never happen to be because I wasn’t really insecure... I’ve been chatting with him for 1 1/2 years before he wanted to meet... It’s all my fault. I feel awful.” 15yr old Female

This sentiment was also present in 35% of the sexting posts when shared images were later used against them:

“i sent a nude to my now ex bf bout a year ago and he sent it to ppl and every1 keeps calling me a thot and just the worst things u could imagine at school i already planned everything out for suicidie” 13yr old Female

For explicit content, the most common mental health problem (29%) was addictive behaviors that made adolescents feel out-of-control and ashamed:

“Sending nudes is a bad thing? As long as watching porn? I’m a 14 year old girl and I want to stop doing the two of them but I always fail and feel really bad” 15yr old Female

When adolescents revealed their sexual orientation, they were often ostracized or ridiculed by others, which negatively impacted their mental health (24%). Losing the support of friends and family during a critical time in their sexual development was detrimental to their self-esteem:

“Bisexual and ashamed my friend blocked me off snapchat told all her friends they started removing me off their friend list just because I came out I cAnt even look in the mirror of myself 😞” 16yr old Female

Mental health consequences ranged greatly—from mild embarrassment, rage, hopelessness, self-harm, to suicidal ideation and actual attempts on the adolescent’s life.

Online Harassment Resulting from Sexual Interactions

Being bullied was also a direct consequence of online sexual experiences. In 15% of the online sexual abuse posts and 4% of sexting posts, insult was added to injury when the adolescents’ sexual abuse was recorded and shared with others, who then ridiculed them for being promiscuous or damaged goods:

“I was sexually assaulted by an ex I had and he put my assault on video and showed a bunch of people...which led me to being sexually harassed at school ... the guy is now my ex and he’s texting me saying that I’m a santa and a hoe for being sexually assaulted.” 15yr old Female

In some cases, this hurt the adolescents’ reputation and led to name-calling. Some more extreme cases often occurred once an intimate or trust relationship degraded to the point where the offending party used the digital imagery as a form of revenge porn or sextortion.

Other posts mentioned being bullied because of sexual orientation (10%). Adolescents complained recounted receiving hate messages from the people who harassed them over their sexual identity or orientation:

“Ok so I’m gay... And some how some random person found that out and messaged me that I’m a stupid ass lesbian and I should go die in a hole... And I’m fuck sick and tired of you people who can’t accept other people that are apart of the LGBT+ community.” 12yr old Female

Harassment compounded the problems adolescents experienced when trying to understand their sexual identity.

Positive Outcomes of Online Sexual Interactions

Although most posts indicated negative consequences from adolescents’ online sexual experiences (at least the ones they posted about in which to garner support), some adolescents expressed positive outcomes. For instance, sexting gave them pleasure or made them feel good about pleasing others when other life-situations made life seem depressing. To this extent, sexting was used as a coping mechanism to get some relief and a sense of empowerment.

“Recently I’ve found myself wanting to start to send nudes again. I know I shouldn’t, it’s illegal and over all just a thing that could come back and haunt me. I just feel so out of control with my life and so worthless at the moment that at least if I can give someone some sort of pleasure it’ll make me stop feeling this way.” 16yr old Female

In the next section, we describe the posts where adolescents were trying to connect with others.

Trying to Connect with Others

In addition to seeking support, some adolescents posted because they wanted to connect directly with others (15% N=635). These posts differed from support seeking posts because the adolescents were explicitly trying to make one-to-one connections for support, rather than seeking it broadly from the crowd. Most of these posts (62%, N=392)

were from LGBTQ youth trying to connect with other LGBTQ, while other posts were adolescents trying to make friends (37%, N=234) or to talk to someone else who was also sexually abused (5%, N=30). A common type of post in this category was an adolescent stating their sexual orientation and providing their Kik user ID to have other youths of that orientation contact them. In some cases, adolescents wanted to talk to someone who could help them come out to their families:

“Is anyone else bisexual on here? Need some advice, I don't know how to come out to my family. Could you leave your Kiks below. Thankyou ❤️” 15yr old Female

Several posts came from frustrated adolescents, who wanted to connect with others on a meaningful level but wanted to avoid sexual solicitations. These posts indicated that even though this platform was for support, adolescents often received unwanted sexual solicitations instead:

“Y'know what I really hate..? When I say on here “I really want to talk to someone.” and when I do all they want to do is sext or send dirty pictures. I really do want to just TALK..” 15yr old Female

Females were particularly forlorn that they were not receiving the support they came there to get:

“I just feel so lonely. Nobody really talks to me and when they do talk to me all they want from me is sex... I don't want to talk about sex and sending nudes...I want to talk about my problems without getting shut down about how I'm just complaining just to complain.” 16yr old Female

Some male users even acknowledged that most guys seemed to come to the platform to engage in sexual interactions. As a result, “guys” who joined the platform to make friends and talk had a hard time connecting with overly cautious “girls.” In the next section, we discuss the posts that aim to provide advice to others.

Giving Advice to Others

There was a small portion of posts (5%, N=200) that gave advice to others about online sexual risks. Of these posts, (62%) gave others advice on how to deal with unwanted sexting solicitations and even bad actors on the platform itself. Posts often included a general plea, an expression of frustration, and/or actionable advice on how to avoid such unwanted interactions. Other posts specifically warned others about users that they had negative interactions with in the past, so that they could stay away from predators:

“Stay the hell away from [ID] he is a perv all he wants is for girls to send him nudes he found my Kik on here and started texting me...” 14yr old female

Other adolescents posted pleas to potential offenders telling them to go elsewhere and not prey on vulnerable people.

DISCUSSION

We discuss the implications of our findings and present design recommendations for online peer support platforms.

Online Sexual Experiences as the New Norm

Exploring one's sexuality is a normal and healthy part of adolescence [19], and as adolescents spend more time online, online sexual experiences have become a normal part of their lives. Adolescents in our dataset often treated online sexual interactions as if they were a natural progression of romantic relationships. Similar to offline sexual interactions [44], adolescents in our study wanted help navigating these situations and were desperately reaching out to strangers for advice on how best to handle serious life decisions. Unfortunately, while there are extensive resources for adolescents to learn about healthy versus risky sexual experiences offline [27], the risk narrative around online sexual interactions has limited sexual health resources for these interactions from becoming a mainstream part of sex education. We recommend a societal shift that acknowledges that online sexual interactions are now part of a adolescents' everyday life; therefore, we need to teach adolescents how to engage in these sexual experiences *safely*. We urge researchers and practitioners to advocate for safe online sexual education for adolescents. For instance, educators could help adolescents weigh the benefits and risks of sexting and discuss safety and exit strategies.

The Double-Edge Sword of Online Peer Support

Our analysis uncovered that adolescents, specifically, ones struggling with their mental health, sexuality, and technology-mediated relationships, came to this online platform to seek support. Vulnerable youth (e.g., LGTBQ and survivors of sexual abuse) often reached out to others directly for help and to form personal connections based on shared life experiences. In this way, the platform empowered adolescents, gave them hope, a sense of community, and belonging—all positive characteristics that have been associated with online mental health peer support platforms [38]. Yet, while these adolescents were exposing their most intimate thoughts, desires, and personal details (e.g., Kik IDs) to receive support from their network, they also received unwanted sexual advances from strangers to the point that some adolescents posted to warn others about malicious users. Essentially, the platform was exposing adolescents to some of the same harmful experiences they were there to overcome. This raises the question as to whether the benefits of online peer support outweigh the potential risks—or how we might design these platforms in a way that optimizes benefits and mitigates risks. Therefore, we offer some recommendations for designing online peer support platforms to better meet the needs of adolescents.

Implications for Design

While the anonymity of the platform gave adolescents the opportunity to discuss topics they normally did not feel comfortable talking about in the real world, it also placed them at higher risk. One of the main themes that emerged in this paper was the problem of adolescents encountering “bad actors” [8] as they sought peer support and social connection with others online. A possible solution for

combating bad actors is to create safe spaces that are designed specifically for adolescents to have frank conversations about their online sexual experiences. These peer support platforms could be membership restricted by age and real identity but facilitate support through anonymity. Further, online peer support platforms could implement peer-based affinity spaces [1] that are restricted to adolescents who identify with certain groups (e.g., LGBTQ, females, by age, etc.). These affinity spaces might safeguard youth from encountering unwanted solicitations or online harassment about their sexual orientation. Ideally, these platforms would be moderated by trained peer counselors and sexual health professionals that understand the types of sexual interactions teens encounter online, so that parents can be assured that their adolescents are getting sound advice. Making such online resources accessible for adolescents could prevent them from going to less reputable websites or niche websites (such as ones geared towards mental health issues) to seek peer support. We might also reflect on whether designing platforms specifically for safe consensual sexting for adolescents would be beneficial.

While the platform studied was moderated and had clear community standards against online harassment and solicitations, it was clear from the posts that unwanted interactions that violated these standards still occurred. This problem could potentially be alleviated by leveraging machine learning approaches to identify such violations. For instance, Wohn et al. [54,56] recently proposed leveraging human-technology partnerships and algorithmic systems to alleviate the burden of human moderators. Combining this approach with Wisniewski's and De Choudhury's [57] concurrent efforts to create human-centered algorithms [45] to accurately detect adolescent online risks, could be a novel approach to ensuring the online safety of adolescents seeking online peer support. As such, an interesting design implication and future research problem is determining how human-centered approaches to machine learning could be used to disentangle online sexual abuse from other forms of normal online sexual exploration to improve risk detection. For instance, we found that relationship context was a salient feature in unequivocally unwanted sexual solicitations. Therefore, accurately classifying or allowing adolescents to categorize individuals as known or unknown contacts would help automated approaches distinguish between unwanted solicitations and more nuanced interactions. Such algorithms could then be embedded in peer support and/or social media platforms, so that these platforms share the social responsibility of protecting adolescents from sexual exploitation, while not inhibiting them from seeking support for or engaging in developmentally appropriate sexual behaviors online. Additionally, posts often disclosed sexual abuse, self-harming behaviors, and suicidal thoughts. Similar human-centered risk detection approaches could help identify these imminent risks to youth and offer real-time support and provide evidence-based interventions to mitigate harm.

Limitations and Future Research

Our analysis was based on posts made by adolescents on a mental health-oriented peer support platform for adolescents and young adults. Therefore, our results may not be generalizable to other populations. We likely encountered more negatively biased sexual experiences and abuse narratives given the nature of the platform. Future research should verify whether our results hold for more diverse adolescent populations. Second, the challenge of scaling big data for qualitative research is an open problem that multiple researchers in the SIGCHI community are currently trying to tackle [15,58]. Our dataset was scoped based on a grounded and iterative process of manually identifying relevant keywords in the data. It is possible that other relevant keywords exist but were not included in our query. For instance, the word "fuck" was intentionally removed because this sexualized language has become prevalent in youths' everyday discourse and resulted in a high number of irrelevant posts.

Most importantly, how to ethically conduct online research, particularly with vulnerable population [49] is an important open issue within the SIGCHI community that warrants continuous scrutiny [22]. Hallinan et al. [22] explains that there is no single solution to ensuring ethical research and one must think about the beneficence (i.e., benefits versus risks) of one's research "holistically." For instance, we considered the public's expectations of the platform based on the site's terms of service, which stated that the data may be used for research purposes. Yet, we felt this was insufficient protection by itself, which is why we made sure that our quotations were anonymized and not publicly searchable as to mitigate potential harm to the youth whose data we analyzed. For our future work, we plan to take the same care in examining the types of peer support and advice adolescents receive from strangers (i.e., comments on these posts) about these experiences.

CONCLUSION

The key take-away from this research is that online sexual interactions need to become part of the everyday discourse when educating adolescents about safe sex. We investigated the online sexual experiences of adolescents using real-world posts from a peer support platform. We found that online sexual experiences have become an irrevocable part of adolescents' sexual development and identified some of the benefits and challenges adolescents encounter when seeking support for these experiences.

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