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The association between adolescent sexting, psychosocial difficulties and risk behavior: Integrative review

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Integrative review

Abstract

When a sexting message spreads to an unintended audience, it can adversely affect the victim's reputation. Sexting incidents constitute a potential school safety risk. Just as with other types of adolescent risk behavior, school nurses might have to initiate the first response when a sexting episode arises, but a school nurse's role goes beyond intervention. They can also play an important role in prevention of sexting and its related risks. This article reviews the links between adolescent sexting, other types of risk behavior and its emotional and psychosocial conditions. Seven databases were examined and nine studies remained for further review. The review of the literature shows that adolescent sexting is cross-sectionally associated with a range of health-risk behaviors. Youth who engage in sexting are also found to experience peer pressure and a range of emotional difficulties. The results can guide school nurse education and practice.

Sexting can be situated in adolescents' relationship formation process and their sexual development. It has gained growing attention and concern among parents, teachers and other school personnel. Not in the least as some tragic cases attracted high media attention. At the same time, sexting is increasingly the focus of scholarly research. Although it encompasses a range of behaviors, sexting can be defined as the exchange of "sexually explicit content communicated via text messages, smartphones, or visual and web 2.0. activities such as social networking sites" (Ringrose, Gill, Livingstone, & Harvey, 2012, p. 9). According to a US national representative study, 9.6% of respondents reported "appearing in or creating nude or nearly nude images or receiving such images in the past year" (Mitchell, Finkelhor, Jones, & Wolak, 2011, p. 16). Youth engage in sexting for several reasons. Sexting can play a role in the communication between teenagers within a romantic relationship, for instance as a means of keeping intimacy (Lenhart, 2009; Walker, Sanci, & Temple-Smith, 2013). Qualitative studies have found that sexting is influenced by existing gender relations, with girls often being pressured into engaging in sexting behavior, and boys collecting sexting messages as a means of gaining status amongst their peers (Ringrose et al., 2012; Walker et al., 2013). Some scholars have argued that sexting might also be a secure alternative to engaging in physical intercourse, because the behavior is not explicitly prohibited by religious rules and youth who engage in sexting do not run the risk of getting pregnant or being infected by sexually transmitted diseases (STDs) (Chalfen, 2009; Lippman & Campbell, 2014). However, adolescents engaging in sexting run the risk that their intimate messages might get exposed to a wider audience than they intended. In turn, this might lead to bullying and adversely affect the victim's reputation (Ringrose et al., 2012). When such a sexting episode happens at school, it might affect the school climate. Sexting as such might constitute a serious school safety issue. Just as with many other

behavioral health emergencies (Ramos et al., 2013), school nurses might be among the first to know when a student is involved in sexting and might have to act as a first responder when a sext has spread to an unintended audience.

Baumgartner, Sumter, Peter, and Valkenburg (2012) found that online sexual risk behavior, such as searching for someone to talk about sex on the internet, was related with offline sexual risk behavior, such as having unprotected sex. Online and offline sexual risk behavior shared common predictors such as gender, education level and sensation seeking. These findings suggest that, for some youth, a sexting episode could be symptomatic of other offline psychosocial problems and risks. When a sexting incident arises, school nurses could screen victims and perpetrators of sexting abuse for additional risk behaviors and emotions that are associated with sexting behavior in search of potential underlying causes. Alternatively, they could ask students if they have engaged in sexting in order to probe whether they are also more likely to engage in other risk behaviors. Some researchers have suggested that adolescents might be more willing to talk about their experiences with sexting than to open up about more severe types of risk behavior they are involved in (e.g., substance abuse or sexual risk taking behavior) (Temple et al., 2012). In order to engage in such prevention and intervention efforts, school nurses need to have a clear overview of the associations of sexting with other (risk-taking) behaviors. Therefore, the purpose of this article is to review psychosocial, emotional and behavioral factors that are associated with sexting and to inform school nursing prevention, education and screening programs. The research questions (RQ) can be summarized as followed:

- RQ1: How is adolescent sexting associated with other types of risk behavior?
- RQ2: Which emotional and psychosocial conditions are linked with engaging in adolescent sexting behavior?

Method

The search strategy

Using the term “sexting”, the databases *Communication & Mass Media Complete*, *ERIC (CSA/Proquest)*, *Francis*, *PubMed*, *Web of Science*, *SafetyLit archive database* and *SwetsWise* were searched during the third week of March 2014 for English-language peer-reviewed journal articles published between 2008 and 2014. The records were screened and duplicate search results were removed.

Inclusion and exclusion criteria

The remaining full-text articles were analyzed using the following criteria. Firstly, only articles reporting on quantitative studies were included. Abstracts, conference proceedings, commentaries, editorials and qualitative papers were not eligible for further review. Secondly, the article should investigate sexting among adolescents attending middle or high school between 10 and 21 years old. We decided to only include studies with a sample of middle and high school students to ensure the relevance of the findings for school health prevention and intervention. Thirdly, the article should relate to our research questions and should discuss the links between sending sexting messages and deviant behavior, risk behavior, emotional and psychosocial conditions. Studies that, for example, only report on the prevalence of sexting in certain populations were not included as they did not address the research questions posed in this review. The selection process is summarized in Figure 1. The final sample was comprised of nine manuscripts. They were assessed by two researchers independently using the Rating System for Levels of Evidence from Melnyk and Fineout-Overholt (2011). The scale consists of seven

levels, with Level I being evidence from a systematic review or meta-analysis to Level VII consisting of expert opinions.

[PLEASE INSERT FIGURE 1 ABOUT HERE]

Results

Overview of the studies

Table 1 summarizes the evidence related to the research questions. All reviewed articles were published between 2012 and 2014. Six studies were conducted in the United States, two in Belgium and one in South-Korea. The research used cross-sectional surveys to study sexting behavior amongst adolescents. All articles were found to contain Level IV evidence (Melnyk and Fineout-Overholt, 2011) which encompasses evidence from case-control or cohort studies.

All respondents were between 10 and 20 years old. Five of the nine studies randomly selected participants or the respondents' class (Dake, Price, Maziarz, & Ward, 2012; Lee, Moak, & Walker, 2013; Mitchell et al., 2011; Rice et al., 2012; Vanden Abeele, Campbell, Eggermont, & Roe, 2014). A sixth study conducted by Houck et al. (2014) used a purposive specific sample of at-risk early adolescents, who were diagnosed with symptoms of behavioral or emotional difficulties by school counselors, nurses and administrators. The three remaining studies used a convenience sample (Temple et al., 2014; Temple et al., 2012; Walrave, Heirman, & Hallam, 2014). Two of the nine studies defined the theoretical frameworks that were used to develop the respective questionnaires: the Social Learning Theory (Lee et al., 2013) and the Theory of Planned Behavior (Walrave et al., 2014). All other studies did not mention specific theoretical frameworks.

Sexting was differently defined across the studies. A majority of the studies measured sending sexting messages through a cell phone or the internet or they did not specify the medium through which sexting took place. Three studies measured sexting behavior through means of a mobile phone (Rice et al., 2012; Vanden Abeele et al., 2014; Walrave et al., 2014). The following three different categories were used to define the characteristics of a sexting message: (a) sexting messages as both visual and textual sexually suggestive messages (Dake et al., 2012; Houck et al., 2014; Rice et al., 2012; Walrave et al., 2014), (b) sexting messages as sexually suggestive pictures (Mitchell et al., 2011; Temple et al., 2014; Temple et al., 2012) and (c) engagement in sexting by asking whether certain body parts were depicted (e.g., being semi-naked or taking pictures of sexual intercourse) (Lee et al., 2013; Vanden Abeele et al., 2014).

[PLEASE INSERT TABLE 1 ABOUT HERE]

The integrative review of the literature is structured by three major themes: (a) how sexting is correlated with sexual behavior, sexual risk behavior and other health risk behavior, (b) sexting and its links with conduct problems and (c) the psychosocial correlates of sexting behavior.

Adolescent sexting and its links with sexual behavior, sexual risk behavior and other health risk behavior

A large body of literature focuses on the link between the engagement in offline sexual behaviors and sexting, a kind of sexual behavior mediated by information and communication technology. Three studies found associations between involvement in sexting and having had sexual intercourse (Dake et al., 2012; Rice et al., 2012; Temple et al., 2012). Likewise, Houck et al. (2014) found that engagement in sexting in their sample of at-risk early adolescents, who were

diagnosed with symptoms of behavioral or emotional difficulties, was associated with a range of sexual behaviors (e.g., making out, making out with someone from the same gender, touching genitals over/under clothes, touching genitals from someone of the same gender, friends with benefits (i.e., sexual actions with someone who wasn't boyfriend/girlfriend), oral sex and vaginal sex). The middle school students who reported having engaged in sexting, also reported higher intentions to engage in sexual activity in the coming six months. The study of Houck et al. (2014) further found that the mode of sexting used, was linked with adolescents' level of involvement in sexual behaviors. Compared to youth who only send textual sexts, youth who send sexting pictures were more likely to engage in a range of sexual behaviors, such as touching genitals over and under clothes and having had oral and vaginal sex.

Adolescents who had been involved in sexting, seemed also more likely to exhibit sexual risk behavior. Dake et al. (2012) found a significant association between having engaged in sexting and having had unprotected sex during the last sexual encounter. By contrast, in the study of Rice et al. (2012) the latter association was present but not statistically significant ($p < 0.10$). Dake et al. (2012) also found that youth who engaged in sexting were more likely to have had multiple sexual partners than youth who had not been involved in sexting. Temple et al. (2012) only found this significant relationship between the amount of sexual partners and sexting behavior amongst girls, but not amongst boys. Girls who engaged in sexting were more likely to have taken alcohol or drugs before having had sex in the year prior to the study than girls who had not been involved in sexting (Temple et al., 2012).

Sexting is not only associated with sexual risk behavior but also with other types of health risk behavior. One study found a relationship between engagement in sexting and smoking, the consumption of alcohol, binge drinking and using marijuana in the 30 days prior to

the study (Dake et al., 2012). Temple et al. (2014) found a similar significant relationship, using a single item question measuring whether the respondents “had ever used alcohol, marijuana, or other illicit substances (cocaine, inhalants, ecstasy, non-prescribed prescription drugs)” (Temple et al., 2014, p. 34). The study showed that 78.8% of the students who had sent a sext had used these substances versus 55.9% of the students who had never engaged in sexting (Temple et al., 2014).

Adolescent sexting and its link with conduct problems

Although a substantial amount of research focuses on the correlates between sexting and health risk behavior, few studies assessed the links between sexting and being confronted with other types of problem behavior.

One study among middle and high school students in South Korea, found that students who engaged in sexting were also more likely to have been involved in behaviors that were defined by the authors as “delinquent” (Lee et.al., 2013). One study found that adolescents who engaged in sexting, were more likely to ever have become victim of traditional forms of bullying, such as verbal bullying and indirect bullying, as well as cyberbullying (Dake et al., 2012). The same researchers also observed that students who engaged in sexting were also more likely to ever have been forced to have sexual intercourse and having been slapped or physically hurt by their partner in the year prior to the survey, than students who were not involved in sexting (Dake et al., 2012).

Only one study assessed the associations between sexting and adolescents’ academic performance. Vanden Abeele et al. (2014) found that students in less academic school tracks of

the Flemish education system were more likely to have engaged in sexting. When controlling for gender differences, the relationship remained significant for boys only.

The emotional and psychosocial associations of adolescent sexting behavior

Lee et al. (2013) found that youth who engage in sexting behavior also hold more positive attitudes towards the practice. Walrave et al. (2014) observed, likewise, that adolescents who hold positive attitudes towards sexting have a higher intention to engage in this behavior. Girls were more likely to hold negative attitudes towards sexting than boys. However, the authors found that the attitudes towards sexting were not the most important predictors for engagement in this behavior. The subjective norm, young people's perceived social pressure by peers and romantic partners, had a higher impact on the students' intention to engage in sexting than their own attitudes towards the behavior.

Three other studies confirmed that peers might play an important role in adolescents' engagement in sexting behavior. One study found that students who had sexted were more likely to know someone else who had engaged in sexting compared to students who had not previously sent a sexting message (Rice et al., 2012). Houck et al. (2014) found that engagement in sexting by at-risk teens was significantly associated with the perceived approval of this behavior by friends, parents and the media. Furthermore, Lee et al. (2013) observed that sexting was positively associated with peer pressure. "Peer pressure" was operationalized using 9 items that measured whether and in which way the respondents' friends talked about sexting, how often the respondents witnessed sexting behavior among their friends and items about how their friends tried to involve them in sexting behavior (e.g., "My friends talked to me about taking sexy pic./video with cell phones", "My friends coaxed me to send sexy pic./video to him/her", "My

friends excluded me from conversations because I have not taken or sent sexy pic./video with cell phone” (Lee et al., 2013, p. 11)).

Vanden Abeele et al. (2014), however, did not find a significant association between sexting and perceived peer pressure. The authors used three general questions about peer pressure adapted from the “Relations Inventory-Relational Quality Version (NRI-RQV)” (Buhrmester, 1992): (1) “How often do your friends push you to do things that you don’t want to do?,” (2) “How often do your friends try to get you to do things that you don’t like?,” and (3) “How often do your friends pressure you to do the things they want?” (Vanden Abeele et al., 2014, p. 16).

Vanden Abeele et al. (2014) further found that having engaged in sexting was significantly associated with need for popularity and self-perceived popularity with the other sex. For girls, having engaged in sexting behavior was significantly associated with a lower perceived same-sex popularity. The authors offered two explanations for this finding. Sexual permissiveness of girls who engage in sexting might negatively affect their popularity with other girls. On the other hand, girls who are unpopular among other girls might seek out acceptance by their peers by engaging in sexting behavior (Vanden Abeele et al., 2014).

Several studies investigated the association between sexting and emotional difficulties. Houck et al. (2014) found in their sample of at-risk adolescents, that youth who engaged in sexting had lower awareness and understanding of their emotions and experienced more difficulties with regulating their emotions. They also had a lower perceived self-efficacy in regulating their emotions than at-risk youth who did not engage in sexting. Temple et al. (2014) found an association between sexting and impulsivity.

Furthermore, engagement in sexting behavior was linked with a range of negative emotions. Dake et al. (2012) found that adolescents who had engaged in sexting were more likely, in the year previous to the study, to have felt sad or hopeless for more than two weeks, to have contemplated suicide and to have attempted suicide. The study of Temple et al. (2014), however, did not establish a significant relationship between engagement in sexting behavior and depression symptoms. Mitchell et al. (2011) found that respondents who had sent a sexting message felt significantly more afraid as a result than respondents who had only received a sexting message. The study of Temple et al. (2014), however, did not observe significantly more anxiety symptoms among youth who had sent sexts and youth who had not engaged in sending sexting messages.

[PLEASE INSERT TABLE 2 ABOUT HERE]

Discussion

The purpose of our review was to analyze whether sexting was associated with (1) other types of risk behavior and (2) to assess the emotional and psychosocial associations of sexting behavior. The main findings of our review are summarized in table 2.

With regards to the first research question, our analysis of the literature shows that adolescents' involvement in sexting can be indicative of their engagement in a range of other sexual behaviors (Dake et al., 2012; Rice et al., 2012; Temple et al., 2012), even in a sample of early adolescents, aged 12 to 14 years old, with emotional and behavioral difficulties (Houck et al., 2014). Moreover, sexting might be demonstrative of sexual risk taking behavior such as having unprotected intercourse, having multiple partners or having taken alcohol or drugs before having sex (Dake et al., 2012; Rice et al., 2012; Temple et al., 2012). Furthermore, engagement

in sexting was also associated with smoking and substance abuse (Dake et al., 2012; Temple et al., 2014), suggesting that sexting might also be symptomatic of other types of health risk behavior. The link between consumption of alcohol or drugs and sexting might be troubling, as these substances might lower user's inhibitions and impair their judgment. Research among adults found that substance use can thus play a mediating role in sexting behavior (Dir, Cyders, & Coskunpinar, 2013). Few studies focused on the links between engagement in sexting and other types of problem behavior. Scarce research on this topic indicates that students who engaged in sexting were more likely to be enrolled in less academic school tracks (Vanden Abeele et al., 2014) and to have become victim of bullying (Dake et al., 2012). One study also found a link between sexting and delinquency (Lee et al., 2013). The variable "delinquency" used in the multivariate regression, was a sum score (ranging between 6 and 54) of nine behaviors (Lee et al., 2013, p. 11): (1) stealing money and/or materials, (2) hitting friends, (3) drinking, (4) smoking, (5) having sex, (6) running away from home, (7) absence to school without permission, (8) patronizing stores prohibited to underage (e.g., clubs, bars, etc.) and (9) having sex for money. However, drinking, smoking and having sex do not necessarily have to be counted as delinquent behavior but could be better described as potential health risk behavior, or "deviant" behavior. The varying severity of the different items assessing the construct "delinquency" might have skewed the results. Future research could assess the influence of different types of behavioral problems separately and especially discern serious problem behavior from other activities.

This review study also intended to hone in on the psychological and emotional conditions linked with adolescent sexting behavior. The review of the literature demonstrated that sexting occurs under the influence of peer pressure (Lee et al., 2013) and might be influenced by the

dynamics of the peer group (Walrave et al., 2014). Vanden Abeele et al. (2014) did not find a significant association between sexting and peer pressure. However, as suggested by the authors, this non-significant relationship might be explained by the broad conceptualization of the latter construct, which focused on general peer pressure rather than pressure by specific peers to engage in sexting (Vanden Abeele et al., 2014). Need for popularity, lower same-sex popularity (Vanden Abeele et al., 2014), knowing other students who have engaged in sexting (Rice et al., 2012) might, amongst other factors, lower one's inhibitions to engage in sexting behavior. When developing prevention and intervention campaigns, practitioners might want to take into account the unique peer group dynamics that influence engagement in sexting behavior (Vanden Abeele et al., 2014). It might be important for practitioners to find new ways to empower youth to develop resilience to peer pressure. Inspiration might be found in successful anti-bullying programs such as the evidence-based Olweus Program (Limber, Nation, Tracy, Melton, & Flerx, 2004) or the KiVa-program (Salmivalli, Poskiparta, Ahtola, & Haataja, 2013). Moreover, young people could be reminded that sexting is not normative among youth (Ringrose et al., 2012).

As Houck et al. (2014) explained, the links between sexting and a range of emotional difficulties suggested youth experiencing emotional deficits might encounter difficulties with communicating, which might lead them to use electronic forms of communication, such as sexting to express themselves. This might be of particular concern to practitioners who could develop ways to teach adolescents to express their feelings about sexuality in a more safe way.

When interpreting the results, readers have to be aware that all reviewed studies used a cross-sectional survey design. A cross-sectional survey design is well suited to investigate sensitive topics amongst an adolescent sample. However, cross-sectional designs do not allow establishment of causation and therefore do not allow for defining the direction of the

relationships between variables. Consequently, the current research is not able to define whether some of the correlates found in the literature are an antecedent or a consequence of engaging in sexting behavior. The relationships between the variables discussed below could also be reciprocal.

Implications for school nurses

The continuing education of school nurses in the field of behavioral health topics (Ramos et al., 2013) should not remain limited to offline risk behavior but has to be extended to risks adolescents are confronted with in the online world. The findings presented in this review can be of use for school nurse training and education. Furthermore, continuing education could include information on the latest online trends and most popular internet-applications, which might enable school nurses to better help students when internet-related incidents such as cyberbullying or sexting arise (Van Ouytsel, Walrave, & Vandebosch, 2014).

School nurses can be at the forefront of sexting prevention. As they can play a pivotal role in providing sexual education in schools (Brewin, Koren, Morgan, Shipley, & Hardy, 2014), they can make sure that, in consultation with health teachers, awareness about the risks associated with sexting is incorporated within the framework of sexual education. When conducting school safety surveys or students' health assessments, questions about sexting behavior could be included to measure the prevalence of sexting within the school community, to detect its correlation with other risk behaviors, to inform prevention and intervention programs and to justify the investment of resources in the prevention of the issue (Freeman, Rosenbluth, & Cotton, 2013; Mitchell et al., 2011; Strom, Strom, Wingate, Kraska, & Beckert, 2012).

Knowledge of the correlations between online and offline risk behavior might help school nurses identify at-risk students and effectively engage in risk prevention. Asking students whether they are familiar with the online exchange of sexually explicit pictures or text messages (i.e., sexting) might be an additional, indirect, opportunity to screen their involvement in other types of risky behavior and provides an opportunity to discuss topics related to sexual education (Houck et al., 2014; Temple et al., 2012). Likewise, when students are victimized or are perpetrators of certain risk behaviors or exhibit psychosocial traits that are associated with engagement in sexting, school nurses can explore whether these students already have engaged in sexting and educate them about the related consequences. However, when screening for problem behavior, school nurses are confronted with ethical and legal challenges, such as respecting students' confidentiality and privacy. Given the sensitive nature of sexting, school nurses should consult federal and state laws and local guidelines and policies and reflect on the ethical challenges of asking students about their involvement in sexting to ensure that they can provide appropriate counseling and screening within the boundaries of the ethical and legal framework (Bartlett, Holditch-Davis, & Belyea, 2007).

As sexting is linked to a range of health risks and psychosocial correlates, school nurses might have to act in a first response role in assisting victims of sexting abuse. Just as with cyberbullying, students might also feel more at ease in disclosing their engagement in sexting behavior to school nurses because of their independent position within the school community (Cooper, Clements, & Holt, 2012). Because of its sensitive nature and the possible legal risks for adults involved (e.g., privacy and child pornography laws) (Hinduja & Patchin, 2013; Matthey & Diliberto, 2013), school nurses might, together with the school administration, school counselors and school psychologists, play a key role in the development of protocols and procedures that

can be followed when a sexting incident is reported (Khubchandani, Telljohann, Price, Dake, & Hendershot, 2013; NASN Position Statement, 2012). Such a protocol and procedure could help school nurses and team members protect themselves against potential legal liabilities and ensure appropriate treatment of the victim. Sexting laws are still continuously evolving (Mattey & Diliberto, 2013) and different in each state (Hinduja & Patchin, 2013). In order to make sure that school team members are protected from potential legal liabilities when a sexting incident arises, legal counseling should be sought whilst preparing the school's protocol and procedures. Furthermore, students should be informed of the potential legal liabilities that perpetrators, victims and witnesses of sexting abuse face. Several publications show the complexity of the legal aspects surrounding sexting. Hinduja & Patchin (2013) give an overview of the sexting laws in each state. Mattey & Diliberto (2013) discuss the potential legal issues minors, who are involved in sexting incidents, could face.

School nurses should assess which role they can play within an interdisciplinary school team and to whom they can refer victims of sexting incidents for additional care and counseling (Khubchandani et al., 2013; Ramos et al., 2013). Additionally, a school-wide and interdisciplinary prevention and intervention program could be developed. Just as with other adolescent health risks, like adolescent dating violence, the school staff, faculty, administrators and parents should be informed about the risks of sexting and the associated risk behavior, in order to ensure that victims receive appropriate assistance when a sexting incident occurs (Khubchandani et al., 2013).

Limitations and implications for future research

Although this review contains important findings for school nurse education and practice, several limitations on both the review-level and the level of the assessed studies should be acknowledged. First, the results found in the studies might be impacted by publication bias, which means that manuscripts which report on significant results might have had a better chance of being published (Easterbrook, Gopalan, Berlin, & Matthews, 1991) and consequently, being included in this review. Studies which did not find significant relationships between adolescent sexting and risk behavior might have not reported these results in their research papers or their results might not have been published at all. Furthermore, studies published in peer-review journals that were not indexed in one of the seven databases searched, could not be included in our review of the sexting literature. Finally, additional evidence could have been identified when a search for literature published in non-English journals and a search for grey literature, such as dissertations had been conducted. The reviewed studies also come with several limitations, some of which were acknowledged by the authors of the respective studies. First, some studies did not use a randomized sample, which might limit the generalizability of these findings for the general adolescent population. Furthermore, all studies used a cross-sectional survey design, which does not allow to establish causality. The relationships between sexting and other types of risk behavior might all be the consequences of a single underlying cause and sexting might therefore be part of a pattern of differing risk and problem behaviors that share the same underlying causes (Donovan & Jessor, 1985). Future research would benefit from a longitudinal approach that enables researchers to identify the antecedents and consequences of engaging in sexting behavior and its links with different types of violence and (dating) abuse. Moreover, all studies relied on self-report data. Some youth might have under-reported or over-reported their engagement in sexting behavior. Studies in which students were asked whether they had exchanged “sexually

explicit” content, might have suffered from differing attitudes among respondents of what constitutes as sexually explicit material. Likewise, studies that measured what was depicted in the sexting images (e.g., “did you sent pictures in underwear”), might have counted certain messages as sexting, although they were not intended to be sexually explicit (e.g., pictures from a day at the beach). A combination of different measurements of sexting behavior might strengthen the research design of future studies. None of the reviewed studies distinguished between different contexts or motives for engaging in sexting behavior. The behavioral correlates and motives to engage in sexting might, for instance, be impacted by whether sexts are exchanged between two romantic partners or whether it occurs outside of a romantic relationship. One might argue that sexting might not be considered as risky when it occurs within the context of a trusting romantic relationship. Therefore one could hypothesize that some of the associations between sexting and risk behavior might not hold true when controlling for the context in which it was created. Further research could also adopt a comparative cross-cultural perspective, as currently a majority of studies on sexting is conducted within the United States. Finally, the research field would benefit from a standardized definition of sexting behavior, which would make it easier to compare and interpret the findings of different studies.

Conclusion

Adolescent sexting is a serious school safety risk that is associated with several types of health risks and a range of psychosocial conditions. The overall evidence about the risks associated with sexting is still limited and further research is warranted. However, the findings of this review can already be used to inform and shape prevention and intervention efforts. By being aware of the risks and consequences associated with sexting school nurses might be at the

forefront of promoting a healthy and safe internet use, and thus contributes to a safer and healthy school community.

Resources

School nurses can find more information about sexting and sexting prevention in the following publications:

- The article “Sexting – It’s in the Dictionary” in NASN School Nurse, which reviews the prevalence of sexting, the legal issues associated with sexting behavior and gives an overview of resources to promote online safety (Mattey & Diliberto, 2013)
- State Sexting Laws. A Brief Review of State Sexting Laws and Policies by the Cyberbullying Research Center (http://www.cyberbullying.us/state_sexting_laws.pdf)
- Brochure: ‘So you got naked online?’ (<http://www.saferinternet.org.uk/ufiles/Sexting%20Toolkit.pdf>)
- National Center for Missing & Exploited Children’s NetSmartz Workshop Program web page on sexting (<http://www.netsmartz.org/sexting>)
- ‘Before You Text...’ a local Texas-based Sexting Prevention Educational Program (<http://beforeyoutext.com/>)
- The internet safety website of the American Academy of Pediatrics (<http://safetynet.aap.org/>)
- OnGuardOnline.gov (Department of Homeland Security) (<http://www.onguardonline.gov/>)
- Media Smarts Canada, a center for Digital and Media Literacy (<http://mediasmarts.ca/>)
- The UK Safer Internet Centre (<http://www.saferinternet.org.uk/>)

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Figure and Table captions

Figure 1: Number of articles eligible for the study

Table 1: Data Reduction Displaying Key Elements of the Reviewed Studies (NS = not significant)

Table 2: Summary: Correlates of adolescent engagement in sexting

Figure 1: Number of articles eligible for the study

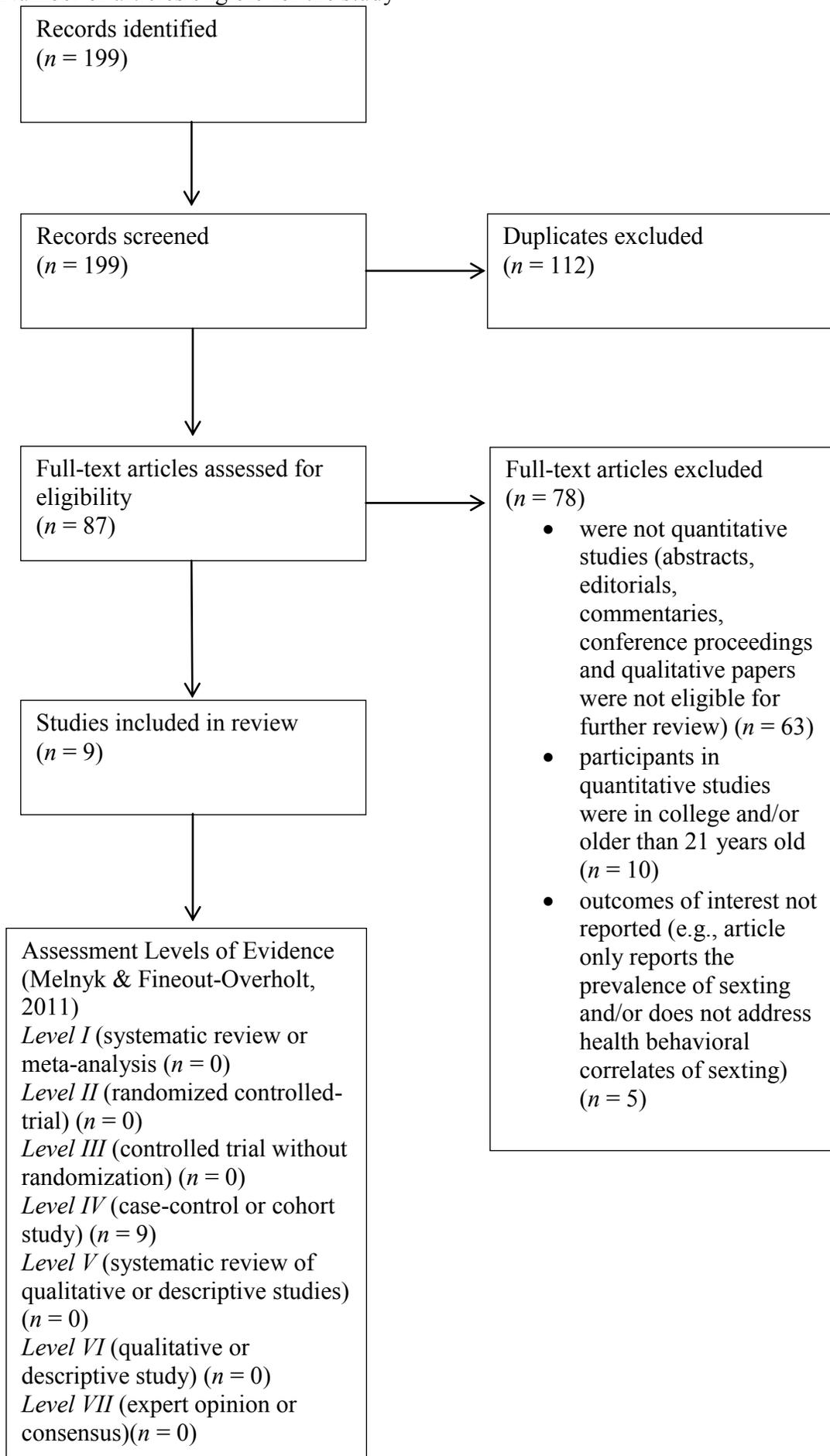


Table 1: Data Reduction Displaying Key Elements of the Reviewed Studies
(ns = not significant; N/A = not applicable)

| Authors, year & country | Participants | Research design, purpose of the study and item used to measure sexting | Data analysis & findings |
|-------------------------|--|--|--|
| Dake et al., 2012 - USA | Stratified random sample of high school and middle school classes in tree Midwestern counties. 1889 students between 12-18 years old completed the survey which was part of larger health survey | <p>Method: Cross-sectional survey</p> <p>Purpose: “[...] to examine the demographic, health risk behavior, and emotional health issues of adolescents that are associated with sexting.”</p> <p>Item used to measure sexting: The item used to measure sexting was not reported. Sexting was defined in the study as: “sending receiving, or forwarding sexually explicit messages or nude, partially nude, or sexually suggestive digital images of one’s self or others via a cell phone, e-mail, Internet, or SNS” (Dake et al., 2012, p. 2)</p> | <p>Data analysis software used: SPSS 17.0</p> <p>Data analysis technique: Logistic regression adjusted for sex, age and living arrangements</p> <p><u>Sexting and association with sexual behaviors</u> <i>Ever had sexual intercourse</i> (OR = 5.40; 95% CI: 3.49-8.35, $p < 0.05$), <i>ever had oral sex</i> (OR = 12.98; 95% CI: 8.17-20.61, $p < 0.05$), <i>ever had anal sex</i> (OR = 10.03; 95% CI: 3.97-25.35, $p < 0.05$), <i>number of sex partners 1</i> (OR = 3.87; 95% CI: 2.28-6.58, $p < 0.05$), <i>number of sex partners 2</i> (OR = 5.83; 95% CI: 2.99-11.37, $p < 0.05$), <i>number of sex partners 3</i> (OR = 10.82; 95% CI: 4.33-27.03, $p < 0.05$) <i>number of sex partners 4 or more</i> (OR = 11.15; 95% CI: 5.47-22.73, $p < 0.05$), <i>did not use contraceptives during last intercourse</i> (OR = 5.22; 95% CI: 1.99-13.72, $p < 0.05$).</p> <p><u>Sexting and association with substance abuse</u> <i>Smoked 1+ cigarettes in the past 30 days</i> (OR = 2.82; 95% CI: 1.75-4.53, $p < 0.05$), <i>drank alcohol in past 30 days</i> (OR = 3.56; 95% CI: 2.39-5.30, $p < 0.05$), <i>binge drank 5+ in the past 30 days</i> (OR = 3.27; 95% CI: 2.10-5.09, $p < 0.05$), <i>used Marijuana in past 30 days</i> (OR = 2.97; 95% CI: 1.78-4.96, $p < 0.05$)</p> <p><u>Sexting and association with being a victim of bullying and violence</u> <i>Experience with being a victim of physical bullying</i> (OR = 1.54; 95% CI: 0.84-2.80, $p > 0.05$), <i>experience with being a victim of verbal bullying</i> (OR = 1.66; 95% CI: 1.10-2.51, $p < 0.05$), <i>experience with being a victim of indirect bullying</i> (OR = 2.16; 95% CI: 1.40-3.35, $p < 0.05$), <i>experience with being a victim of cyber bullying</i> (OR = 3.66; 95% CI: 2.15-6.24, $p < 0.05$), <i>ever been forced to have sexual intercourse</i> (OR = 4.63; 95% CI: 2.34-9.18, $p < 0.05$).</p> |

0.05), *been hit, slapped, physically hurt by boyfriend or girlfriend in the past year* (OR = 2.77; 95% CI: 1.53-5.00, $p < 0.05$)

Sexting and association with emotions

Felt sad/hopeless for 2+ weeks in past year (OR = 1.87; 95% CI: 1.24-2.82, $p < 0.05$), *contemplated suicide in past year* (OR = 3.37; 95% CI: 2.02-5.61, $p < 0.05$), *attempted suicide in past year* (OR = 5.27; 95% CI: 2.67-10.40, $p < 0.05$)

Houck et al. 2014
- USA

418 seventh grade adolescents (aged between 12-14 years old) completed a computer-based survey as a part of a sexual risk prevention trial for at-risk adolescents in 5 urban public schools in Rhode Island between 2009 and 2012. Participants were identified as 'at-risk' by school counselors, nurses and administrators for symptoms of behavioral or emotional difficulties.

Method: Cross-sectional survey

Purpose: To assess the association of sexting behavior with a range of sexual activities, intentions to have sex, perceived approval of sexual activity, and emotional regulation skills in a sample of at-risk middle school students.

Item used to measure sexting:

"In the last 6 months"; "... have you texted someone a sexual picture of yourself?"; "... have you texted someone a sexual message to flirt with them?"; "... have you e-mailed or messaged (like on Facebook) someone a sexual picture of yourself?"; "... have you e-mailed or messaged (like on Facebook) someone a sexual message to flirt with them?"

Data analysis software used: PASW Statistics Software 18

Data analysis technique:

Logistic regression was used to test the association between sexting and sexual behaviors and the relationship between textual types of sexting and sexual behaviors.

Association between sexting and sexual behaviors and *making out* (OR = 5.97; 95% CI: 3.59-9.94; $p < 0.01$), *touched genitals over clothes* (OR = 7.34; 95% CI: 4.54-11.89; $p < 0.01$), *friends with benefits (sexual actions with someone who wasn't boyfriend/girlfriend)* (OR = 4.86; 95% CI: 3.14-7.55; $p < 0.01$), *touched genitals under clothes* (OR = 5.38; 95% CI: 3.41-8.49; $p < 0.01$), *oral sex* (OR = 5.40; 95% CI: 3.32-8.80; $p < 0.01$), *vaginal sex* (OR = 5.01; 95% CI: 2.99-8.40; $p < 0.01$), *same sex: made out* (OR = 4.45; 95% CI: 2.19-9.06; $p < 0.01$) and *same sex: touched genitals* (OR = 4.63; 95% CI: 2.37-9.05; $p < 0.01$)

Logistic regression comparing visual versus textual forms of sexting

Making out (OR = 1.10; 95% CI: 0.53-2.25; $p = 0.81$), *touched genitals over clothes* (OR = 1.98; 95% CI: 1.06-3.70; $p < 0.05$), *friends with benefits* (OR = 1.77; 95% CI: 0.99-3.19; $p = 0.06$), *touched genitals under clothes* (OR = 1.85; 95% CI: 1.08-3.17; $p < 0.05$), *oral sex* (OR = 2.66; 95% CI: 1.49-4.73; $p < 0.01$), *vaginal sex* (OR = 2.23; 95% CI: 1.26-3.95; $p < 0.01$), *same sex: made out* (OR = 2.18; 95% CI: 1.07-4.43; $p < 0.05$), *same sex: touched genitals* (OR = 1.71; 95% CI: 0.87-3.37; $p = 0.12$)

Effect sizes for risk-related cognitions and emotional competency were computed using partial η^2 and converted to Cohen's d using standard conversion formulas.

Association between having engaged in sexting and sexual intentions (Cohen's $d = 0.69$; 95% CI: 0.48-0.89; $p < 0.01$), *association of having engaged in sexting and perceived peer approval of sexual behavior* (Cohen's $d = 0.46$; 95% CI: 0.26-0.66; $p < 0.01$), *association of having engaged in sexting and perceived media approval of sexual behavior* (Cohen's $d = 0.40$; 95% CI: 0.20-0.59; $p < 0.01$), *association of having engaged in sexting and perceived parental approval of sexual behavior* (Cohen's $d = 0.43$; 95% CI: 0.23-0.62; $p < 0.01$), *association between having engaged in sexting and lack of emotional awareness* (Cohen's $d = 0.28$; 95% CI: 0.08-0.47; $p < 0.01$), *association between having engaged in sexting and lack of emotional regulation skills* (Cohen's $d = 0.19$; 95% CI: 0.00-0.39; $p = 0.07$), *association between having engaged in sexting and self-efficacy for managing their emotions* (Cohen's $d = 0.42$; 95% CI: 0.22-0.61; $p < 0.01$)

There were no significant relations between the aforementioned Risk-related cognitions and the mode of sexting (i.e., photo versus text)

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| Lee et al., 2013 - South Korea | 1612 randomly selected South Korean middle and high school students in the national capital region (aged between 13-19 years old). | <p>Method: Cross-sectional survey</p> <p>Purpose: To assess which criminological theory best explains sexting behaviors</p> <p>Item used to measure sexting:</p> <p>Sexting behavior – self consisted of 8 items measuring:</p> <ul style="list-style-type: none"> Taking pic/video of own legs. Taking pic/video of own hips Taking pic/video of own breast Taking pic/video of masturbation Taking pic/video of own sexual intercourse Taking pic/video of own underwear Sending above pic/video of self to others | <p>Data analysis software used: N/A</p> <p>Data analysis technique:</p> <p>A range of different items measuring taking sexting pictures of oneself and of others was combined into two different scales. Multivariate regressions were used to assess the association between sending sexting pictures of oneself and others and prior delinquency.</p> <p><i>Significant association between taking sexting pictures and positive attitudes towards sexting</i> ($B = 0.01$, $SE = 0.01$, $\beta = 0.07$, $p < 0.05$)</p> <p><i>Significant association between taking sexting pictures of someone else and positive attitudes toward sexting</i> ($B = 0.02$, $SE = 0.01$, $\beta = 0.06$, $p < 0.01$)</p> <p><i>No significant association between taking sexting pictures of</i></p> |
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| | | <p>Sexting behavior – others consisted of 8 items measuring:</p> <ul style="list-style-type: none"> Taking pic/video of friends’ legs Taking pic/video of friends’ hips Taking pic/video of friends’ breast Taking pic/video of friends’ masturbation Taking pic/video of friends’ having sex Taking pic/video of friends’ underwear Taking pic/video of dressing/shower room Sending above friend’s pic/video to others | <p><i>oneself and self-control</i> (B = -0.01, SE = 0.01, β = -0.03) <i>No significant association between taking sexting pictures of someone else and self-control</i> (B = -0.01, SE = 0.01, β = -0.01) <i>No significant association between taking sexting pictures of oneself and social bond to parents friends and teachers</i> (B = -0.01, SE = 0.01, β = -0.05) <i>Significant association between taking sexting pictures of someone else and social bond to parents friends and teachers</i> (B = -0.02, SE = 0.01, β = -0.09, $p < 0.01$) <i>Significant association between taking sexting pictures of oneself and peer pressure</i> (B = 0.12, SE = 0.02, β = 0.23, $p < 0.01$) <i>Significant association between taking sexting pictures of someone else and peer pressure</i> (B = 0.28, SE = 0.02, β = 0.43, $p < 0.01$) <i>Significant association between taking sexting pictures of oneself and prior delinquency</i> (B = 0.04, SE = 0.01, β = 0.17, $p < 0.01$) <i>Significant association between taking sexting pictures of someone else and prior delinquency</i> (B = 0.06, SE = 0.01, β = 0.20, $p < 0.01$)</p> |
| Mitchell et al., 2012 - USA | 1560 youth internet users, ages 10 through 17 between August 2010 and January 2011. | <p>Method: Cross-sectional telephone survey. The interviewer first spoke to the parent then requested permission to speak to the child</p> <p>Purpose: “To obtain national estimates of youth involved in sexting in the past year [...], as well as provide details of the youth involved and the nature of the sexual images.”</p> <p>Item used to measure sexting: “1. Has anyone ever sent you nude or nearly nude pictures or videos of kids who were under age 18 that someone else took”; “2. Have you ever forwarded or posted any nude or nearly nude pictures or videos of other kids who were under the age of 18 that someone else took?”; “3. Have you ever taken nude or nearly nude pictures of yourself?”; “4. Has someone else ever taken nude or nearly nude pictures or videos of you?” and “5. Have you ever taken nude or nearly nude pictures or videos of other kids who were under the age of 18?”</p> | <p>Data analysis software used: N/A</p> <p>Data analysis technique: The relationships between the variables was examined using χ^2</p> <p>21 percent of youth who had appeared in or created sexting images felt upset, embarrassed or afraid as a consequence of the sending of a sexting image.</p> <p>Respondents who had appeared in or created sexting images felt significantly ($\chi^2 = 4.3, p \leq 0.05$) more afraid than respondents who had received a sexting image.</p> |

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| Rice et al., 2012 - USA | Probability sample of 1839 adolescents aged between the 12-18 years, as a supplemental, self-report, questionnaire of a 2011 Youth Risk Behavior Study in Los Angeles' High Schools. | <p>Method: Cross-sectional survey</p> <p>Purpose: to assess the correlates of sexting behavior and associations between sexting and sexual risk-taking</p> <p>Item used to measure sexting: "Have you ever sent a sexually explicit message or photo of yourself by cell phone?"</p> | <p>Data analysis software used: N/A</p> <p>Data analysis technique: Logistic regression</p> <p><i>Association with engagement in sexting behavior by peers (OR = 16.87; 95% CI: 9.62-29.59), association with having ever engaged sexual intercourse (OR = 7.17; 95% CI: 5.01-10.25, p < 0.05), students who engaged in sexting exhibited a trend towards sexual risk-behavior (i.e., unprotected sex during their last sexual encounter) (OR = 1.41; 95% CI: 0.97-2.04; p < 0.10)</i></p> |
| Temple et al., 2012 - USA | 937 adolescents aged between 14-18 years old of 7 public high schools in Southeast Texas. | <p>Method: Cross-sectional survey</p> <p>Purpose: "To examine the prevalence of sexting behaviors was well as their relation to dating, sex, and risky sexual behaviors using a large school-based sample of adolescents."</p> <p>Item used to measure sexting: (1) "Have you ever sent naked pictures of yourself to another through text or e-mail", (2) "Have you ever asked someone to send naked pictures of themselves to you", (3) "Have you ever been asked to send naked pictures of yourself through text or e-mail", (4) "If so, how much were you bothered by this (not at all, a little, a lot, or a great deal)"</p> | <p>Data analysis software used: SPSS Version 19.0 and SAS version 9.2.</p> <p>Data analysis technique: The relationships between the variables was examined using chi square test. χ^2-values were not reported in the article.</p> <p><u>Girls:</u> Sending a sexting message and the association between <i>dating (p < 0.001), ever had sex (p < 0.001), having had more than one sex partner in the last year (p < 0.005), having taken alcohol or drugs before having sex in the last year (p < 0.02).</i> Asking for a sexting message and the association between <i>dating (p < 0.01), ever had sex (p < 0.01), having had more than one sex partner in the last year (p < 0.01), having taken alcohol or drugs before having sex in the last year (p < 0.05).</i></p> <p><u>Boys:</u> Sending a sexting message and the association between <i>dating (p < 0.001), ever had sex (p < 0.001), having had more than one sex partner in the last year (p = 0.80), having taken alcohol or drugs before having sex in the last year (p = 0.93).</i> Asking for a sexting message and the association between <i>dating (p < 0.001), ever had sex (p < 0.001), having had more than one sex partner in the last year (p = 0.97), having taken alcohol or drugs before having sex in the last year (p = 0.11).</i></p> |

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| Temple et al., 2014 - USA | 937 adolescents aged between 14-18 years old of 7 public high schools in Southeast Texas. | <p>Method: Cross-sectional survey</p> <p>Purpose: to examine “whether adolescents who report sexting exhibit more psychosocial health problems compared to their non-sexting counterparts.”</p> <p>Item used to measure sexting: “Have you ever sent naked pictures of yourself to another through text or e-mail?”</p> | <p>Data analysis software used: N/A</p> <p>Data analysis technique: Logistic regression assessed the relationship between sexting and depression symptoms, anxiety symptoms, substance use and impulsivity, while controlling for prior sexual behavior, age, gender, race/ethnicity and parent education.</p> <p><i>No significant relationship between sexting and depression symptoms (OR = 1.44; 95% CI: .99-2.11), no significant relationship between sexting and anxiety symptoms (OR = 1.30; 95% CI: .89-1.89), significant relationship between sexting and substance use (OR = 1.07; 95% CI: 1.01-1.13, $p < 0.05$), significant relationship between sexting and impulsivity (OR = 2.14; 95% CI: 1.38-3.31, $p < 0.001$)</i></p> |
| Vanden Abeele, 2014 - Belgium | A random stratified sample of 1943 respondents aged between 11 and 20 years in 12 schools in Flanders, Belgium | <p>Method: Cross-sectional survey.</p> <p>Purpose: to examine how (self-perceived) same-sex popularity, (self-perceived) other-sex popularity, perceived peer pressure and need for popularity are associated with sexting and mobile porn use among Flemish teenagers</p> <p>Item used to measure sexting: Respondents were asked whether they had ever used their mobile phone to send a picture or video from themselves in which they were naked or semi-naked (e.g., in their underwear)</p> | <p>Data analysis software used: N/A</p> <p>Data analysis technique: Hierarchical logistic regression</p> <p><i>Sexting behavior and the association with a lower level school track (B = -0.35, SD = 0.13 Wald statistic (1) = 7.01, $p = 0.008$). The relationship holds true for boys (B = -0.44, SD = 0.18 Wald statistic (1) = 6.11, $p < 0.05$) but not for girls (B = -0.24, SD = 0.20 Wald statistic (1) = 1.39, ns), when analyzed separately.</i></p> <p><i>Significant relationship between sexting behavior and having divorced or separated parents (B = 0.42, SD = 0.21 Wald statistic (1) = 4.05, $p = 0.044$), the relationship holds true for boys (B = 0.55, SD = 0.28 Wald statistic (1) = 4.03, $p = 0.045$) but not for girls (B = 0.29, SD = 0.33 Wald statistic (1) = 0.79, ns), when analyzed separately.</i></p> <p><i>Having engaged in sexting behavior was significantly associated with a perceived lower same-sex popularity (B = -0.28, SD = 0.11, Wald statistic (1) = 6.47, $p < 0.05$). The relationship held true for girls (B = -0.49, SD = 0.16, Wald statistic (1) = 9.82, $p < 0.01$) but not for boys (B = -0.09, SD = 0.16, Wald statistic (1) = 0.32), when analyzed separately.</i></p> |

Sexting behavior and self-perceived popularity with the other sex ($B = 0.53$, $SD = 0.13$, Wald statistic (1) = 17.07, $p < 0.001$). The relationship remained significant when boys ($B = 0.46$, $SD = 0.18$, Wald statistic (1) = 6.41, $p < 0.05$) and girls ($B = 0.56$, $SD = 0.19$, Wald statistic (1) = 8.60, $p < 0.01$) were analyzed separately.

Sexting behavior associated with need for popularity ($B = 0.49$, $SD = 0.11$, Wald statistic (1) = 21.67, $p < 0.001$). The relationship remained significant when boys ($B = 0.42$, $SD = 0.14$, Wald statistic (1) = 8.95, $p < 0.01$) and girls ($B = 0.69$, $SD = 0.17$, Wald statistic (1) = 15.83, $p < 0.001$) were analyzed separately.

Sexting behavior not significantly associated with perceived peer pressure ($B = -0.03$, $SD = 0.11$, Wald statistic (1) = 0.09, ns). There was also no significant relationship between perceived peer pressure and sexting when boys ($B = 0.03$, $SD = 0.14$, Wald statistic (1) = 0.05, ns) and girls ($B = -0.15$, $SD = 0.18$, Wald statistic (1) = 0.75, ns) were analyzed separately.

Walrave et al., 2014 - Belgium

489 adolescents aged between 15-18 years old of 2 secondary schools in Belgium

Method: Cross-sectional survey.

Purpose: testing the applicability of the Theory of Planned Behavior as a predictor of sexting behavior

Item used to measure sexting:

“Have you sent sexts in the last two months”. Sexting was defined in the study as: “Sexting encompasses sending naked or semi-naked pictures of yourself or sending a sexually exciting text message with your mobile phone or smart phone”

Data analysis software used: Mplus 6.11

Data analysis technique: Structural equation modelling

Significant relation between the attitudes towards sexting and the intention to engage in sexting behavior ($\beta = 0.17$, $p < 0.05$). *Girls had a more negative attitude towards sexting than boys did* ($\beta = -0.20$, $p < 0.001$). *Students in a romantic relationship had a stronger positive attitude towards sexting* ($\beta = 0.17$, $p < 0.001$).

Significant association between the intention to engage in sexting and the belief that sexting leads to... ‘getting more attention’ ($\beta = 0.314$, $p < 0.001$), *‘increased opportunities to find a romantic partner’* ($\beta = 0.120$, $p < 0.05$), *‘lower likelihood of getting an STD’* ($\beta = 0.237$, $p < 0.001$)

No significant association between the intention to engage in sexting and the belief that sexting leads to... ‘higher likelihood of being blackmailed’ ($\beta = -0.045$, ns), *‘getting a bad reputation’* ($\beta = -0.019$, ns) and *‘being misinterpreted by the person to whom you*

sent a sext' ($\beta = -0.056$, ns).

Significant positive relationship between the intention to perform sexting and the subjective norm ($\beta = 0.69$, $p < 0.001$). Romantic partners ($\beta = 0.327$, $p < 0.001$) and friends ($\beta = 0.350$, $p < 0.001$) were the only two sources of social pressure that were significantly associated with the intention to engage in sexting behavior. Siblings ($\beta = -0.040$, ns), parents ($\beta = 0.094$, ns) and teachers ($\beta = -0.008$, ns) did not play a significant role in the motivation to perform sexting. Students in a relationship were found to have a stronger positive subjective norm than singles ($\beta = 0.19$, $p < 0.001$).

Perceived behavioral control did significantly influence the intention to engage in sexting ($\beta = 0.09$, $p < 0.05$). Students in a romantic relationship also had a higher perceived behavioral control ($\beta = 0.14$, $p < 0.05$).

Table 2: Summary: Correlates of adolescent engagement in sexting

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| Adolescent sexting and its links with sexual behavior, sexual risk behavior and health risk behavior |
| Engagement in sexual behaviors (Dake et al., 2012; Houck et al.,2014; Rice et al., 2012; Temple et al., 2012) |
| Engagement in sexual risk behavior (Dake et al., 2012; Temple et al., 2012) |
| Substance use (Dake et al.,2012; Temple et al., 2014) |
| Adolescent sexting and its link with conduct problems |
| Delinquency (Lee et al., 2013) |
| Being a victim of bullying/cyberbullying (Dake et al., 2014) |
| Enrollment in a less academic school track (Vanden Abeele et al., 2014) |
| The emotional and psychosocial associations of adolescent sexting behavior |
| Having positive attitudes towards sexting (Lee et al., 2013; Walrave et al., 2014) |
| Knowing someone who had engaged in sexting (Rice et al.,2012) |
| Perceived peer approval of sexting (Houck et al.,2014) and perceived approval of romantic partners and friends (Walrave et al., 2014) |
| Peer pressure (Lee et al., 2013) |
| Perceived lower same-sex popularity (girls) (Vanden Abeele et al., 2014) |
| Self-perceived popularity with the other sex (Vanden Abeele et al., 2014) |
| Feeling afraid (Mitchell et al., 2012) |
| Feeling sad or hopeless (Dake et al., 2012) |
| Impulsivity (Temple et al., 2014) |
| Contemplating or attempting suicide (Dake et al., 2012) |
| Lack of emotional awareness, lack of emotional regulation skills, lack in self-efficacy for managing emotions (Houck et al., 2014) |
