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Sexting Among Adolescents: Examining the Association Between Sexting and Self-esteem

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ABSTRACT

Purpose: This paper provides a systematic review of the published literature examining the association between sexting and self-esteem in adolescents. It further attempts to identify gaps in the current literature and provide recommendations for future research as well as patient care and education.

Methods: Electronic databases (CINAHL Plus with Full Text, Iceberg, and PsycINFO) were searched with publication dates between January 1, 2014 and September 30, 2019. The keywords used to conduct the search were: *sexting, adolescents, self-esteem, youth, and teenagers*. All records were screened to meet established criteria. The inclusion criteria included the following: a) articles written in the English language, b) study includes a comparison between sexting and self-esteem, c) study includes human subjects, and d) age of subjects is between 13 and 19. Studies where cyberbullying was the main component of the study methodology and consisted of instruments with lack of validity evidence were not included in the review. The review was conducted in concurrence with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

Results: In total, 7 studies were included in the systematic review. Results suggest that sexting and self-esteem are associated, with an increased likelihood of sexting in adolescents with low self-esteem. Adolescents engaged in sexting behavior reported lower emotional self-efficacy ($p <$

0.01, 95% CI [0.22-0.61]) and self-esteem ($p < 0.05$, 95% CI [1.02-1.12]). Female adolescents were more likely to engage in sexting than male adolescents.

Conclusions: Although research in sexting is no longer in its infancy, more research examining the association between sexting and self-esteem is needed. With an increasing prevalence of sexting behavior, it is also important for schools, parents, and clinicians to incorporate the discussion of sexting and its negative effects with adolescents. Thus, a greater emphasis on developing and implementing programs and interventions is necessary.

Keywords: Sexting; Adolescents; Self-esteem; Teenagers; Youth

Implications and Contributions

Studies have suggested long-term consequences of sexting due to its impulsive nature and the inaccurate belief that sexting is harmless. Self-esteem is an important factor in adolescents' psychosocial well-being. Findings suggest that adolescents with low self-esteem engage in sexting more than those with high self-esteem and report lower emotional self-efficacy.

Conflicts of Interest: The authors have no conflicts of interest to declare.

Disclaimer: The findings and conclusions in this manuscript are those of the authors and do not represent the official position of the Physician Assistant Studies Program and Dominican University of California.

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Within the past decade, new technological advancements have influenced the development of innovative ways to manage social interactions and relationships [1,5,12,18]. Media-based communications through the invention of the smartphone and social platforms such as Instagram, Snapchat, and Twitter, have become vehicles for exploring and expressing sexuality [3,9,18,23]. With the spread of new technology, the prevalence of sexting has increased, especially amongst the adolescents [1,2,4,11]. A general definition of “sexting” is the exchange of sexual material (images, videos, or text/email messages) through electronic means [16,19,26,33]. “Sexting” was not well-defined in the earlier studies due to its varying nature and context, but it has now been further defined as including: the behavior in question, the type of material exchanged, and the recipients of the material (intimate partner, third parties, social peers) [1,24,27,32]. Research on sexting is no longer in its infancy, as the prevalence of sexting has grown, and has accumulated more public and scientific attention in the recent years [1,3,25,31].

There have been several publications on the legal implications of sexting, but there are still existing gaps in our knowledge of its clinical implications, its prevalence, and its repercussions, especially in the adolescent population [4,28,34,35]. A systematic review of literature that was published in 2014 [11], found many studies with significant limitations and somewhat inconsistent reports of prevalence (range from 5% to more than 44%) [3,4,34]. The inconsistent reports of prevalence are primarily attributed to the lack of standardized definition of “sexting” and the high variance among study populations. With a lack of consistency on the prevalence of sexting and its repercussions, developing future research, policy, and interventions to be used by clinicians becomes even more challenging.

Current research has demonstrated that sexting can affect adolescents' physical and psychosocial well-being, often involving symptoms of depression and suicidal ideation [14,16-20,38]. Adolescents who engage in sexting are associated with higher rates of substance use, impulsivity, anxiety, conduct issues (e.g., delinquency), risky behaviors, multiple sexual partners, lack of contraceptive use, cyberpornography, domestic/dating violence victimization, relational issues, aggression, body dissatisfaction, and low self-esteem [44,46,53-56]. Peer acceptance is an important component that plays a vital role in adolescents' psychosocial development, and studies have shown that the need for gaining popularity and acceptance by peers serve as sexting motivations [1,49-51,54]. The consequences of sexting differ in female adolescents compared to male adolescents, where females seem to experience more harm since they tend to be at the receiving end of insults, humiliation, and damaged reputation [1,19,45-48]. Self-esteem, an important determinant of adolescent mental health and development, has not been included in the past systematic reviews of literature and meta-analyses. Only a few studies have examined its association to sexting [1,35,36,55].

Self-esteem, a reflection of self-worth, involves beliefs about oneself and an emotional response to those beliefs [56]. Previous studies have shown that low self-esteem has been associated with a variety of physical, psychological, and social consequences that can transition into adulthood, such as depression, anxiety, suicide, eating disorder, obesity, violent behavior, early initiation of sexual activity, substance use, and greater likelihood of joblessness and financial difficulties [56,57-62]. Considering the reviewed literature, identification of modifiable risk factors for low self-esteem, such as sexting, is important in developing interventions and screening tools that clinicians can use with adolescents. Identifying and better understanding the impact of sexting may contribute to the prevention of sexting and its negative consequences to

help preserve adolescents' psychosocial well-being. The primary objective of this study is to provide a systematic review of the published literature, examining the association between sexting and self-esteem in adolescents, and to identify gaps in existing knowledge to provide recommendations for future research.

METHODS

In September 2019, electronic literature searches of peer-reviewed studies written in the English language were conducted using the following databases: CINAHL Plus with Full Text, Iceberg, and PsycINFO. The search included articles published between January 1, 2014 and September 30, 2019. The keywords used were “sexting,” “adolescents,” “teenagers,” “youth,” and “self-esteem.” The abstracts of all retrieved articles were then read and assessed for eligibility. Studies were deemed eligible if the following inclusion criteria were met: (a) measure(s) of interest included sexting and self-esteem, (b) study included human subjects, (c) age of subjects between 13-19 years, (c) “sexting” and “self-esteem” defined appropriately in comparison to current literature, and (d) “self-esteem” measured using instruments with validity evidence. Retrieved studies that focused on other online activities such as cyberbullying, were excluded.

Figure 1 illustrates the search process. The initial database search returned 1,498 articles. Twenty duplicate records were removed, resulting in 1,478 articles. Abstracts were then screened for potential eligibility, resulting in 434 full-text articles. Of these, 7 were retained for review. The reasons for exclusion are provided in Figure 1. The reference lists of the included studies were also manually screened for studies that may have been missed in the initial database search.

For quality assurance, this systematic analysis was conducted following the standards set by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

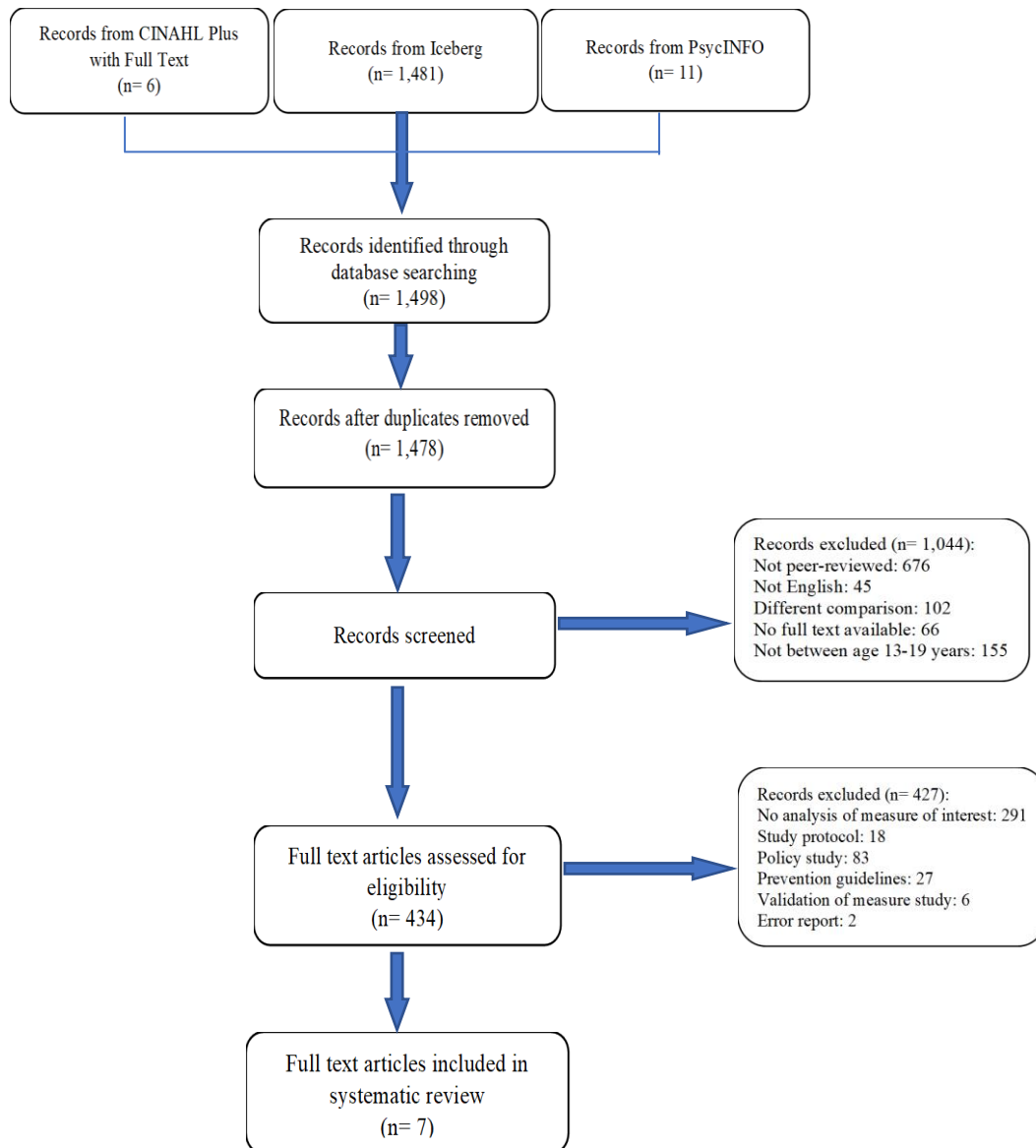


Figure 1. Flowchart of the study selection process.

RESULTS

Of the 7 studies that met inclusion criteria and were included in the systematic review, the most common study design was empirical and quantitative research. All studies focused on self-esteem as the exposure and participation in sexting as the outcome. The study population ranged from ages 13-19 years. Participants were enrolled students in middle and high schools. The number of participants ranged from 418 to 3,772, all with approximately 1:1 ratio of male to female participants in each study. Other details of the studies are provided in Table 1.

In this systematic review, we examined the association between sexting and self-esteem. Six of the 7 studies found that sexting and self-esteem are associated, with an increased likelihood of sexting in persons with low self-esteem. Of the 7 studies, only one study by Hudson and Fetro [63] showed no statistical significance between the association of sexting and self-esteem. Adolescents with high self-esteem were just as likely to engage in sexting as persons with low self-esteem. Adolescents were deemed to have high self-esteem if score from the *Rosenburg Self-esteem Scale* was 1 standard deviation or greater above the sample mean. As Table 2 illustrates, there was statistical significance between sexting behavior and self-esteem. Adolescents engaged in sexting behavior reported lower emotional self-efficacy ($p < 0.01$, 95% CI [0.22-0.61]) and self-esteem ($p < 0.05$, 95% CI [1.02-1.12]). According to Ybarra and Mitchell [29], female adolescents ($p < 0.003$, 95% CI [0.2-0.7]) were more likely to engage in sexting behavior than male adolescents ($p < 0.005$, 95% CI [0.1, 0.7]). Data suggest that adolescents who engaged in sexting were less likely to have self-reported high self-esteem.

Table 1

Details of studies included in the systematic review

#	Author	Year	Study Design	Location	Sample	N % males % females	Age range, Median (SD)
1	Houck et al.	2014	Quantitative; Cross-sectional	Rhode Island (U.S.)	NP; middle school students participating in Project TRAC ^a	N= 418 (/) % males (/) % females *not provided	12-14 years; / (/)
2	Hudson and Fetro	2015	Descriptive, cross-sectional, correlational	Midwest (U.S.)	NP; undergraduate students from 1 university	N= 697 49.8% males 50.2% females 0.6% unidentified	18-19 years; / (/)
3	Jonsson, Priebe, Bladh, and Svedin	2014	Empirical study; Quantitative study	Sweden	P; Swedish high school students	N= 3,288 45.8% males 54.2% females	16-22 years; 18.3 (/)
4	Jonsson, Bladh, Priebe, and Svedin	2015	Empirical study; Interview; Quantitative study	Sweden	P; high school students in Swedish Educational Registry	N= 3,432 46.4% males 53.6% females	16-18 years, 17 (/)
5	Rial et al.	2018	Empirical study; Quantitative study	Spain	NP; high school students in 2 provinces (A Coruña and Pontevedra)	N= 3,772 49.8% males 50.2% females	12-17 years, 14.41 (1.64)
6	Wachs et al.	2016	Empirical study; Quantitative study	Germany, Netherlands, U.S., and Thailand	P; German, Dutch, American, and Thai middle and high school students	N= 2,162 45.4% males 54.6% females	11-19 years; 14.49 (1.66)
7	Ybarra and Mitchell	2014	Empirical study; Quantitative study	U.S.	P; adolescents across the U.S.	N= 3,715 43.4% males 56.6% females	N= 3,715 43.4% males 56.6% females

P= probability sample; NP= non-probability sample

^a Project TRAC (Talking About Risk and Adolescent Choices): a sexual risk prevention trial for at-risk adolescents that enrolled in 5 urban public middle schools in Rhode Island

Table 2
Associations between sexting and self-esteem

Study #	Exposure	Outcome	Measures of Association		p-value; 95% CI (/ = not provided)
1	emotional self-efficacy	effect size for sexting vs no sexting	Cohen's $\delta = 0.42$		$p < 0.01$; 0.22-0.61
2	self-esteem	all sexting behaviors	$B = -0.090$, Std error = 0.054, $\beta = -0.050$		/
3	low self-esteem	engaging in sexting	OR = 1.07		$p < 0.05$; 1.02-1.12
4	low self-esteem	a) No sexting b) Met online, sex online c) Posted sexual pictures d) Sold sex online	a) 568 (19.9%) b) 19 (31.7%) c) 36 (29.8%) d) 12 (52.2%)		a/b ($p < 0.05$); / a/c ($p < 0.01$); / a/d ($p < 0.001$); /
5	self-esteem	active sexting	$t = 4.57$		$p < 0.001$; /
6	low self-esteem	likelihood of sexting	OR = 0.80		$p = 0.024$; CI: 0.65-0.97
7	high self-esteem	no sexting vs sexting	Males: OR = 0.3 No sexting: 268 (18.1%) Sexting: 5 (4.4%)	Females: OR = 0.3 No sexting: 299 (15.0%) Sexting: 9 (5.2%)	Males: $p < 0.005$; 0.1-0.7 Females: $p < 0.003$; 0.2-0.7

DISCUSSION

The literature search identified a multitude of articles that encompassed sexting, but only 7 studies focused on sexting and self-esteem in adolescents. Of the 7 studies, 6 studies suggested

that sexting and self-esteem were associated. There was an increased likelihood of sexting in adolescents with low self-esteem, and adolescents engaged in sexting reported low emotional self-efficacy than those with high self-esteem. The one study that showed no statistical significance between sexting and self-esteem did not have enough study participants with low self-esteem to conclude that there was no association between sexting and self-esteem [63]. In previous studies, high collegiate status was associated with higher level of self-esteem, and adolescents with low self-esteem were less likely to earn a higher education than those with high self-esteem [63-65].

Previous studies to date have identified sexting as a modifiable risk factor for low self-esteem and the need to develop clinical interventions and programs to better incorporate the discussion of sexting into adolescents' developmental care [56,57-62]. This systematic review shows that there is still more to assess when examining the association between sexting and self-esteem. The authors believe this study is the first to conduct a systematic review specifically focusing on the association between sexting and self-esteem. Prior reviews have highlighted links between sexting and mental health, focusing on depression, anxiety, risky social behaviors, and cyberbullying [70-72]. Research findings suggest a significant relationship between cyberbullying and sexting, where sexting may be a form of victimization, which also results in an increased likelihood of depression and anxiety [6,70,73,74]. Both depression and anxiety have been shown in previous studies to be associated with low self-esteem [56-62].

There has also been an increased number of suicides related to sexting, creating a shift in research to examine sexting and mental health repercussions in adolescents and young adults [70,78]. However, there are still a limited number of studies addressing the relationship between sexting and negative effects on adolescents' psychosocial well-being [14,26,70,80]. This may be

attributed to the variability in the definition of sexting and sampling, their measurements, and methodologies used [3,70,78].

The limitations of this study pertain to the scarcity of research examining the relationship between sexting and self-esteem. Both systematic reviews and meta-analyses rely on the methods used in the included studies. With a noted variability in definitions and sampling in each study, it is difficult to accurately examine and compare the many parameters of sexting and self-esteem. The studies in this systematic review were conducted in developed countries with established educational systems, which may limit the generalizability to other countries or settings.

With an understanding that limitations exist, it is still important to appreciate the statistical significance of the association between sexting and self-esteem. The research is still in its infancy, and future research needs to consider the limitations as described above. Some suggestions for future research include assessing self-esteem at multiple timepoints and stratifying different age groups, to improve the generalizability of the findings. Many studies have suggested potential long-term consequences of sexting due to its impulsive nature and the inaccurate belief that sexting is harmless [11,70-72]. Thus, a greater emphasis on developing and implementing educational programs and interventions surrounding sexting at schools, primary care offices, and other community-based programs is necessary. The introduction and ongoing discussion of sexting and its effects should also be encouraged at home, to provide better insight and prevention of the negative effects of sexting on adolescents' psychosocial well-being and development.

CONCLUSION

Current findings show that there is an association between sexting and self-esteem, where those with low self-esteem are more likely to engage in sexting. This review also identified gaps in the current literature on sexting and self-esteem, such as the lack of an accurate prevalence rate of sexting, the variability in definitions and sampling, and the limited generalizability of study findings. This review also offered recommendations for future research as well as clinical and educational application.

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