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Dr. Van Ouytsel: Conceptualization, Investigation, Project administration, Writing - original draft, Writing - review & editing.

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# **Highlights**

- Sexting among young adults has increased over the past years.
- Sexting can be a normal form of contemporary sexual communication.
- Sextortion, pressured sexting, and nonconsensual sexting are problematic.
- Given its many conceptualizations, a uniform measure is warranted for future research.
- Sexting research needs to focus on both adolescents as well as adults of all ages.

#### **Abstract**

Sexting, herein defined as the sending of self-made sexually explicit images, is a modern-day form of sexual communication. This review discusses recent findings in sexting research among (young) adults. We find that despite its risks, sexting is increasingly used within dating and romantic relationships and can carry different meanings depending on the context in which the images are exchanged. Risks associated with sexting include pressure, experiences of unwanted sexting, unauthorized distribution, and coercion. Problematic forms of sexting can have significant consequences on the victims. We suggest the need for future research to make use of a uniform and nuanced measure of sexting and underscore the need to focus on adolescents as well as adults of all ages.

### 1. Introduction

From 'swiping' on Tinder and 'tapping' on Grindr, becoming 'Facebook Official' to stalking your ex-partner on Instagram, digital media have transformed how we initiate, maintain and terminate our intimate relationships [1, 2]. The characteristics of digital communication, such as invisibility, anonymity, the lack of non-verbal cues and the asynchronous nature of online communication, allow individuals to disclose information to their partners that they would otherwise not immediately share in offline settings (i.e., the online disinhibition effect) [3]. One of the prime examples of the 'online disinhibition effect' is cybersex, the use of the Internet for sexually gratifying activities [4, 5].

Over the past decade, research on the role of digital media in modern dating and romantic relationships has steadily grown. In this brief review, we will focus on the use of digital media to engage in sexting among (young) adults. Sexting is a more recent form of sexual communication that is used within casual and romantic relationships.

### 2. Sexting and it's complicated definition

Sexting can be broadly defined as "the sharing of personal, sexually suggestive text messages, or nude or nearly nude photographs or videos via electronic devices" [6; P.1]. Sexting has not been conceptualized uniformly across studies. Some studies use a broad definition, while others focus on specific types of content such as text messages or self-made sexually explicit images. The disagreement among scholars on how to define sexting makes it hard to accurately assess its prevalence and correlates [7, 8]. The term 'sexting' itself is mostly used in media coverage and scholarly discourse, young adults themselves refer to it as 'taking selfies' or 'sending nudes' [9].

Within this review, we focus on a more narrow definition of sexting, defined as the sending of self-made sexually explicit images [8]. Among young adults, sexting is a rather common behavior. A recent meta-analysis of sexting behaviors among emerging adults showed, that 38.3% of young adults had sent a sext, 41.5% had received a sext and 47.7% of emerging adults had engaged in reciprocal sexting [6]. The meta-analysis also found that the prevalence of sexting has increased over the years [6]. Potential explanations for the increase in sexting prevalence may be shifting social norms and the increase in smartphone ownership [10, 11]. Smartphone applications, such as Snapchat, have become popular mediums to engage in sexting.

# 3. Motivations for sexting

A majority of sexting research has focused on investigating the motivations for why individuals engage in sexting [12]. A sexting image may carry different meanings, depending on the context in which it is shared [13]. In the early stages of dating and romantic relationships, sexting messages can be exchanged within the context of (online) dating as a means to flirt or to express sexual interest [6, 9, 14]. The willingness to send a sext to a dating app match is associated with a lower perceived risk in sexting and a higher perceived number of friends that have engaged in sexting. Individuals are also more willing to sext with a dating app match if they hold positive views of others who sext through dating apps [14].

In a majority of cases, sexting messages are sent within the context of a formal dating relationship or an established romantic relationship [10, 15, 16]. Within established romantic

relationships images can also be used for relationship maintenance, and the images can carry the meaning of a token of love and trust [13, 17]. Unsurprisingly, sexts can also be used to flirt, for sexual experimentation, as foreplay, to build up sexual tension, or to signal a willingness to engage in offline sex, both in emerging as well as existing relationships [9, 13, 18, 19]. Sexting can also be used to replace physical intimacy, for example within the context of a long-distance relationship or during times of separation, such as school holidays or work trips [9, 18, 20]. Images can also be exchanged as a joke, a prank or as a bonding ritual [9, 10].

Although sexting can be a legitimate form of sexual communication for young adults, it remains associated with several risks. The images can be forwarded to others or posted on online websites or messaging boards without the consent of its creators. This is colloquially known as 'revenge porn', but is often called 'nonconsensual sexting', 'non-consensual pornography', 'secondary sexting', or 'image-based sexual exploitation/abuse' in scholarly discourse [21-24].

The recent meta-analysis found that, on average, 15% of emerging adults have forwarded a sexting image without consent, and 7.6% experienced that their images were forwarded [6]. Women are more likely to become a victim of nonconsensual sexting than men [6]. Motivations for sharing someone else's sexting images without consent vary. Sometimes images are exposed to others after a romantic break-up, as revenge on an ex-partner [9]. Other times sexting images are exposed to gossip about the person that is depicted, in order to boast to peers, or to use it as a trophy to gain peer status (e.g., a virtual equivalent of 'locker room talk') [9, 20]. In some cases, sexting images can also be used to coerce the victim to get back together in a relationship, to obtain additional images or sexual contact, or in cases of cybercrime, in order to extort money from the victim [20, 25].

Becoming a victim of nonconsensual sexting can have severe consequences [23]. Adult victims of nonconsensual sexting have missed out on professional or educational opportunities, or experienced bullying and harassment as a consequence of the exposure [21, 23]. Becoming a victim of nonconsensual sexting can also have negative psychological consequences and is coupled with the fear that the images may resurface at any time [9, 26]. A content analysis of nonconsensual pornography websites found that 91.8% of images on nonconsensual pornography websites featured women and that in around 18% of cases the victim's name was shown alongside the image [21].

### 4. Sexting and experiences of abuse

Young adults, and especially young adult women, also report they often experience pressure to engage in sexting [9]. The pressure can be subtle by making women feel obligated or by repeated asking [20, 27]. Women often feel they have to respond to the images to preserve their relationship or to avoid an argument with their partner [9, 19, 20, 28]. That sexting may sometimes occur under pressure or in amore coercive relationship is also echoed by studies who found associations between sexting and experiences of sexual coercion [27, 29], and sexual assault [30].

An underexplored area of sexting research is studies into receiving unsolicited sexual images [18, 24]. Women are more likely than males to report that they have received unwanted sexts [31]. Qualitative research found that this often occurs within the context of online dating [9, 24]. Receiving unwanted images can make victims feel unsafe, threatened and harassed in online spaces, and can be viewed as an online form of sexual harassment [9, 18, 24]. Indeed, young adults who reported receiving more than five unsolicited sexual images were

significantly more likely to report higher distress levels than those who did not receive such content [40].

### 5. Sexting and psychosocial correlates

Another line of research focuses on the associations between sexting and several health outcomes. It will come as no surprise that sexting sometimes leads to physical sex [32], as it is often a built-up to sexual contact. Sexting is also associated with risky sexual behaviors (e.g., sex without protection, or substance use before having sex) [33-36]. Sexting has also been associated with alcohol consumption [10, 30, 34, 35, 37-39].

One of the few exploratory studies on unsolicited sexting found that self-rated mate value (e.g., the belief that other people desire you as a partner) and Machiavellianism were associated with more positive attitudes towards sending unsolicited sexual images [41]. An experimental vignette study among college students indicated that respondents viewed it as significantly more socially acceptable for women to send unsolicited sexting images than for men [42].

Other studies found associations between sexting and negative psychosocial outcomes such as anxiety, depression and suicidal ideation [43, 44]. These studies use general measures of sexting behavior without taking into account the context. It may be possible that the associations between sexting and poor mental health outcomes are especially prevalent for those who engage in sexting under pressure or receive unwanted sexual images [27, 45]. For example, one study found no associations between poor mental health outcomes and sending and receiving sexting images. However, significant associations were found between receiving unwanted sexts and experiencing pressure to engage in sexting and poor mental health outcomes such as depression, anxiety, and stress [31]. This underscores the need to take into account the context in which sexting images are sent, as engagement in sexting in itself may not be necessarily a risk market of poor mental health [46].

Another interesting study on the associations between sexting and sleep health found that those who sext may even lose sleep over it. Sexual minority men, who were users of an online dating application and who engaged in sexting, had on average significantly shorter sleep durations. A potential explanation for this finding offered by the authors is that those who engage in sexting in their bedroom may experience disturbed sleep patterns because of heightened stress through arousal, or because of the prolonged exposure to the light of their cell phones [47].

### 6. Can sexting improve romantic and sexual relationships?

Given that sexting often occurs within the context of a romantic relationship, several studies have looked into the question of whether sexting can improve romantic relationships. Among adults, these studies have found mixed results. Some studies have found a positive relationship between sexting and relationship satisfaction [48], while others have found no associations between sexting with a romantic partner and sexual satisfaction or relationship satisfaction [15, 49]. Another study found an association between sexting and sexual satisfaction, but no positive relationship with relationship satisfaction [46]. Among married couples sexting was associated with relationship satisfaction but only for those with insecure attachment styles, and for the husbands but not for the wives [50], indicating that overall the associations between sexting and relationship satisfaction are limited.

## 7. Conclusions, Outlook and Future Research

The aim of this short review was to provide an overview of recent sexting research, with a focus on young and emerging adults. Research on sexting started around 2009 [51]. While significant progress has been made over the past decade, the field of research on online sexual communication, and specifically sexting, is still emerging [51]. We see several challenges for future research in the area of sexting among (young) adults.

First, while a majority of sexting research has focused on examining why individuals engage in sexting, far fewer studies have focused on problematic forms of sexting, such as sextortion, sexting under pressure, unsolicited sexting images, or nonconsensual sexting [6]. Research on what makes individuals likely to become victims or perpetrators of these behaviors and the related consequences is essential in order to prevent digital forms of sexual violence and abuse.

Second, another frontier is the need for sexting studies among the general adult population. While many studies have focused on adolescents and college students, only a handful of studies have focused on the experiences of adults who are not in college [8]. That is remarkable, given the fact that digital media use among adults is still increasing [52], and that they also may start online dating following a divorce or partner loss [53]. Older adults may be especially vulnerable to the challenges of sexting, as they have been generally overlooked by media literacy efforts [54] and are at higher risk for offline sexual risk behavior [55]. Future research could focus on how adults who are not in college engage in sexting and manage the related risks and challenges.

Third, there is a lack of evidence-based educational material that promotes safer sexting among young adults. Future research could focus on the development of prevention and educational materials that can inform young adults about the risks of sexting and that can provide strategies on how to navigate problematic forms of sexting, such as sexting under pressure and unsolicited sexting [56, 57].

Fourth, the majority of sexting research still relies on convenience samples and cross-sectional designs. The field would benefit from more innovative research designs such as longitudinal research that can track individuals' experiences over time, experimental research and vignette studies.

Finally, other challenges for the next decade of sexting research include a unified definition of sexting across studies, which will allow to establish cumulative evidence and to allow for a better comparison of results of the various sexting studies [58]. There is also a need for more nuanced sexting measures that sufficiently capture the context in which sexting takes place [46, 58]. Research on sexting among gender and sexual minority individuals is also warranted and urgently needed, as very few studies have focused on the experiences of sexual minority adults [59, 60]. Furthermore, sexting studies have mostly been conducted in Australia, Europe, and the United States. Evidence on sexting behaviors and preferably cross-cultural research from other parts of the world is needed to get a better view of sexting in different cultures and settings.

In conclusion, sexting has become a mainstream form of digital sexual communication. Prevalence rates show that it has grown into a normal, but risky form of sexual communication for many (young) adults. The next decade will be an exciting time for sexting research. As the field moves forward, it will allow generating knowledge that can help individuals to enjoy the benefits of sexual communication, while avoiding abuse and online forms of sexual harassment.

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