How do adolescents experience sexting in dating relationships? Motivations to sext and responses to sexting requests from dating partners

Lauren A. Reed[a],*, Margaret P. Boyer[b], Haley Meskunas[b], Richard M. Tolman[c], L. Monique Ward[d]

[a] Arizona State University, School of Social Work, United States
[b] Counseling, Clinical, and School Psychology, University of California, Santa Barbara, United States
[c] University of Michigan, School of Social Work, United States
[d] University of Michigan, Department of Psychology, United States

ABSTRACT

Although most sexting among adolescents occurs in the context of a dating relationship, less is known about adolescents' motivations to sext and the emotional experience of sexting within dating relationships. The current study surveyed 947 high school students about their sexting behaviors, motivations to sext, and emotional reactions to sexting requests from dating partners. Although both girls and boys reported sexting behaviors, girls were more likely to report receiving pressure to sext and negative emotional responses to sexting requests from a dating partner. Among girls, greater self-sexualization, lower religiosity, perceiving peer sexting as more common, and being older predicted more positive emotional reactions to sexting requests from a partner. Greater attachment anxiety, lower self-sexualization, greater religiosity, and being younger predicted more negative emotional reactions for girls. Among boys, lower attachment avoidance, greater self-sexualization, and lower religiosity predicted more positive emotional reactions to sexting requests. Only lower levels of self-sexualization predicted negative emotional reactions to sexting requests for boys. These findings support that sexting is a gendered experience for adolescents in dating relationships and that although most sexting between partners is wanted, certain adolescents may be more at risk for experiencing negative consequences from sexting.

1. Introduction

Sexting, defined as the creating, sharing and forwarding of sexually suggestive or nude images (Lenhart, 2009) through mobile phones and/or the internet, is a salient phenomenon in adolescent relationships. Prevalence estimates of adolescent sexting behavior vary depending on definition and methodology (Madigan, Ly, Rash, Van Ouytsel, & Temple, 2018). A systematic review of adolescent sexting behavior concluded that 14.8% of adolescents engage in sending sexts, and 27.4% of adolescents receive sexts (Madigan et al., 2018). Across the emerging literature, age has been found to be a significant factor influencing sexting behavior, with older adolescents and adults sexting more often than younger adolescents (Dake, Price, Maziarz, & Ward, 2012; Klettke, Hallford, & Mellor, 2014; Madigan et al., 2018; Rice et al., 2012; Strassberg, McKinnon, Sustaíta, & Rullo, 2013). Although adolescents engage in sexting with strangers, acquaintances, peers, and potential and current dating partners (Burkett, 2015), sexting most often occurs between romantic partners (Cooper, Quayle, Jonsson, &

Svedin, 2016; Lenhart, 2009; Strassberg, Rullo, & Mackaronis, 2014).

Although initial framing of discussions around sexting was previously dominated by concerns that sexting is a risk behavior (e.g., Brinkley, Ackerman, Ehrenreich, & Underwood, 2017; Delevi and Weisskirch, 2013; Rice et al., 2012), these conversations are becoming more nuanced. Recent literature supports that sexting largely occurs within normative developmental exploration concerning identity, sexuality, and intimacy (Bianchi et al., 2017; Crimmins & Seigfried-Spellar, 2014; Hasinoff, 2012; Levine, 2013; Lippman & Campbell, 2014; McDaniel & Drouin, 2015). This is not to say that sexting is never associated with risks for negative outcomes; in some studies, sexting has been linked with sexual risk behaviors, depression, substance use, and suicidal ideation (Dake et al., 2012; Klettke et al., 2014; Morelli, Bianchi, Baiocco, Pezzuti, & Chirumbolo, 2017; Temple et al., 2014). Others, however, found no association between sexting and psychological outcomes (Hudson & Fetro, 2015; Morelli, Bianchi, Baiocco, Pezzuti, & Chirumbolo, 2016b). Taken together, the growing body of literature concerning adolescent sexting suggests that rather being

wholly positive or negative for adolescents, sexting should be contextualized with attention to motivations, the relationship between participants, individual characteristic, and other social factors. Exploring these nuances of sexting, scholars have documented subtypes of sexting, classified loosely as consensual or experimental sexting versus nonconsensual, pressured, and coercive sexting (Choi, Van Ouytsel, & Temple, 2016; Englander, 2015; Kernsmith, Victor, & Smith-Darden, 2018; Morelli, Bianchi, Baiocco, Pezzuti, & Chirumbolo, 2016a, 2016b; Wolak, Finkelor, & Mitchell, 2012). Nonconsensual forms of sexting are common; for example, Englander and McCoy (2017) found that almost half their sample of adolescent sexters reported that a photo was released without their consent.

Scholars have also argued that the experience of sexting and its associated outcomes are likely to differ depending on the motivations for engaging in these behaviors (Bianchi, Morelli, Nappa, Baiocco, & Chirumbolo, 2018; Morelli et al., 2016a, 2016b), and that these experiences and motivations may differ depending on who is receiving the sext (e.g. a stranger, a dating partner, etc.) (Burén & Lunde, 2018; Rice et al., 2012). Motivations to sext might include to be fun and flirtatious, to be sexy, to gain attention from a partner, as a "joke" or means of gaining status with peers, for self-expression, sexual experimentation, or pressure or coercion (Albury & Crawford, 2012; Burkett, 2015; Choi et al., 2016; Drouin, Vogel, Surbey, & Stills, 2013; Englander, 2015; Goggin & Crawford, 2011; Henderson & Morgan, 2011; Kernsmith et al., 2018; Lenhart, 2009; Ringrose, Gill, Livingstone, & Harvey, 2012). For example, Kernsmith et al. (2018) found that 12% of their teen sample reported experiencing coercive sexting, and 8% reported pressuring their dating partner to sext.

Recent work on sexting motivations has developed a model of three primary types of sexting motivations: "sexual purposes (sexual expression and exploration), body image reinforcement (looking for feedback about body adequacy), and instrumental/aggravated reasons (exploitation of sexual content for relational aggression or to obtain something else)" (Bianchi et al., 2018, p. 4). These authors suggest that instrumental/aggravated reasons drive harmful, coercive sexting and have linked them to both dating violence victimization and perpetration (Bianchi et al., 2018). It should be noted that this sexting motivation model may not capture sexting that is meant as a "joke" or an attempt to bond with or gain status among peers. Sending sexts as a joke or for social reasons has each been identified in qualitative research as an important context that warrants attention (Burkett, 2015; Ringrose et al., 2012).

Although most adolescent sexting occurs between dating partners, limited research has focused on sexting within romantic relationships. Similar to sexting more broadly, research suggests that the context of sexting in relationships matters. A common use of sexting in relationships is for relationship maintenance or to create intimacy in long distance relationships (Albury & Crawford, 2012; Lenhart, 2009). Sexting may play a positive role by increasing intimacy and sexual exploration in a relationship or by helping to start a new relationship. In qualitative research with adolescents, sexting was found to play a key role in flirtation during early stages of a relationship (Ringrose et al., 2012, p. 13). Conversely, sexting may play a role in sexual risk taking or may be a tool for coercion and pressure (Cooper et al., 2016), perhaps by serving as a form of "relationship currency" in which boys ask for sexual photos and girls are pressured to share them (Ringrose et al., 2012, p. 13).

1.1. Sexting and gender

Gender has emerged as one of the primary factors that shapes sexting experiences. Although youth of all genders are engaging in sexting, sexting is a gendered experience that has more negative outcomes for girls (Cooper et al., 2016). There has not been consensus about rates of sexting across gender, although most studies and a recent meta-analysis found no gender differences in frequency of sexting in

adolescent samples (Campbell & Park, 2014; Dake et al., 2012; Lenhart, 2009; Madigan et al., 2018; Rice et al., 2012). However, several qualitative and quantitative studies agree that girls are more likely than boys to experience both implicit and explicit pressure, harassment, and threats to sext (Choi et al., 2016; Englander, 2015; Kernsmith et al., 2018; Klettke et al., 2014; Ringrose et al., 2012; Ringrose, Harvey, Gill, & Livingstone, 2013; see Madigan et al., 2018 for an exception finding no sex differences for nonconsensual sexting). Girls are more likely to report having negative feelings after sexting (Burén & Lunde, 2018; Temple et al., 2014). There are also gender differences in sexting motivations, as boys have reported more instrumental/aggravated motivations than girls (Bianchi, Morelli, Nappa, Baiocco, & Chirumbolo, 2017, Bianchi et al., 2018). This category of motivations is most strongly linked to violence and abuse in dating relationships. Girls are more likely than boys to send sexts of themselves to others because they received pressure to do so (Henderson & Morgan, 2011; Lippman & Campbell, 2014) or to gain attention and status among peers (Bianchi et al., 2017; Lippman & Campbell, 2014).

Furthermore, previous research has found that the *emotional* experience of sexting is gendered. Salter, Crofts, and Lee (2013) posited that sexting belongs in the same category as other types of offline sexual negotiations that are shaped by heterosexual gender norms and stereotypes. Engaging in sexting has different social consequences for girls and boys; for boys, it is considered a way to express and reinforce masculinity in a way that gains status with peers (Lippman & Campbell, 2014; Ringrose et al., 2013). Boys are encouraged to take and share sexually explicit photos of girls as a way to bond with their male friends and appear sexually experienced (Burkett, 2015). Conversely, for girls, sexting is a double-bind in which girls are encouraged to perform sexiness like the women they see in mainstream media, but are met with 'slut-shaming' and judgement when they engage in these behaviors (Ringrose et al., 2013). Lippman and Campbell (2014) added that even if girls decline to participate in sexting, they are often still met with name-calling and negative social consequences (e.g., 'being a prude'). Even when pressure to sext is not explicit, girls may comply with sexting requests to please their partners or receive other relational benefits (Lippman & Campbell, 2014; Ringrose et al., 2012).

Both qualitative and quantitative research has examined differential impacts and social consequences of sexting for girls and boys. Burkett (2015) described how our sexualized culture and the pressure for girls to be sexy complicates the idea of agency and choice when it comes to sexting, making it difficult to determine when and how girls might be empowered by sexting. Bindesbøl Holm Johansen, Pedersen, & Tjørnøj-Thomsen (2019) conducted ethnographic work that uncovered nonconsensual sexting being used by teens as a form of "visual gossip" which reproduces and reinforces traditional gendered ideas of sexuality, judging girls' and boys' sexual behaviors differently. A quantitative survey study found that in response to pressure to sext from a dating partner, girls were more likely than boys to be distressed by this pressure and to try to engage in discussion or conflict (Reed, Tolman, & Ward, 2017). Because of the importance of the dating relationship context to gender norms and sexting, the current study examined the experience of requesting a partner to sext.

1.2. Individual differences in sexting experiences

Previous research has most closely investigated age and gender as predictors of sexting behavior and the experience of sexting, but less research has been conducted on other individual factors that might influence how adolescent girls and boys experience sexting. We therefore explore five individual difference factors as potential correlates: attachment orientation, self-sexualization, gender beliefs, religiosity, and perception of peer norms.

Attachment orientation. Adult attachment orientation is one potential factor that may influence the experience of sexting for adolescents. Adult attachment is a theoretical framework for understanding

how adolescents develop relational patterns across their lifespan (Bowlby, 1969), and may be a useful construct for interpreting schemas that adolescents bring into their relationships that subsequently influence their on-line and off-line behaviors. Adult attachment is typically conceptualized along two orthogonal dimensions: anxiety and avoidance (Brennan, Clark, & Shaver, 1998; Hazan & Shaver, 1987). Anxiously attached individuals tend to desire intense closeness, while simultaneously fearing abandonment and separation (Hazan & Shaver, 1987; Mikulincer & Shaver, 2003). Consequently, anxiously attached individuals seek high levels of intimacy with their partners and experience distress when their emotional needs are not met. Those demonstrating avoidant attachment tend to intensely fear dependence and intimacy, and as a result choose to be self-reliant and independent, even in the context of close relationships (Hazan & Shaver, 1987; Mikulincer & Shaver, 2003).

Existing research has linked attachment orientation and sexting among college students, showing that this association may be moderated by gender. Drouin and Landgraff (2012) found that higher levels of anxious and avoidant attachment were associated with more frequent sexting behavior. However, anxiously attached women were more likely than men to send sexual texts, and avoidant men were more likely than women to send both sexual texts and pictures (Drouin & Landgraff, 2012). Drouin and Landgraff (2012) speculated that anxiously attached women engage in sexting to supplement closeness when other forms of intimacy (e.g., in-person conversations) are not possible. Moreover, it is possible that men with higher levels of attachment avoidance use sexting as a form of casual sex or as a way to maintain distance from partners by avoiding physical intimacy (Drouin & Landgraff, 2012; Gentzler & Kerns, 2004).

Among both college women and men, anxious attachment has also been associated with endorsing positive attitudes towards sexting and actively propositioning a partner to sext (Weisskirch & Delevi, 2011). In a more recent study, Drouin and Tobin (2014) reported that women, but not men, with higher levels of anxious attachment were more likely to participate in sexting when they did not want to (mediated by wanting to avoid an argument). Accordingly, the current study will add to this literature by investigating whether associations between attachment orientation and sexting also occur among adolescents, and whether anxiety or avoidance are potential predictors of girls' and boys' reactions to sexting in their dating relationships.

Self-sexualization attitudes. A second individual characteristic that may be associated with the experience of sexting among adolescents is self-sexualization. Self-sexualization is sexualization that is applied by the self and occurs when individuals value themselves mainly for their sexual appeal, to the exclusion of other characteristics; when they define attractiveness as sexiness; or when they self-objectify, viewing themselves as an object to be used for others' sexual pleasure (APA Task Force on the Sexualization of Girls, 2007; Ward, Seabrook, Lippman, Manago, & Reed, 2016). There has been considerable debate as to whether self-sexualization is a manifestation of oppression for girls (Gill, 2008; Liss, Erchull, & Ramsey, 2011), or whether enjoying sexualization might be empowering (Kipnis & Reeder, 1997). Even when girls report enjoying sexualization, some researchers speculate that this might be "false empowerment," as this enjoyment occurs within a society that rewards and values women primarily for their physical attractiveness and sexual appeal (APA, 2007; Gill, 2008). Indeed, more research has found support that self-sexualization attitudes have negative outcomes for girls (Liss et al., 2011). Little attention has been paid to the process of self-sexualization for boys.

As there is not one scale that captures all aspects of self-sexualization named above, we chose to focus on one component here: enjoyment of sexualization. This construct reflects the extent to which adolescents enjoy the sexual attention that their bodies draw; we investigate how this enjoyment might be associated with emotional reactions to sexting requests from partners (Ward, Seabrook, Lippman, Manago, & Reed, 2016). As previously discussed, some researchers have

linked societal expectations for girls to present themselves as sexy by displaying their body with potential pressure to engaging in sexting (Burkett, 2015; Ringrose et al., 2013). In a recent study of Dutch adolescents and young adults, van Oosten and Vandenbosch (2017) found that posting sexually suggestive social networking content about oneself was associated with willingness to engage in sexting for girls only, showing a potential link between self-sexualization and sexting behavior among girls. Other research on adolescents found associations between sexting motivations and self-objectification (Bianchi et al., 2017) such that those who sext for sexual purposes were more strongly influenced by their perception of what others think of their body, perhaps as a means to test their perceptions and build self-esteem. Additionally, those who reported more internalization of mass media ideals of beauty were more likely to sext for body image reinforcement. These motivations to sext are considered consistent with the normative adolescent developmental milestones of exploring sexual identity and developing body image (Bianchi et al., 2017). The current study will build on this work by examining whether level of enjoyment of sexualization is associated with responses to sexting behaviors in a dating relationship.

Stereotypical gender beliefs. A third individual characteristic that may be associated with sexting experiences is the endorsement of stereotypical gender beliefs. Society dictates distinct behavioral scripts for girls and boys, especially in regards to heterosexual relationships. These scripts expect girls to be sexually passive, act as sexual gatekeepers, prioritize romantic relationships, and be sexually appealing to men (Kim et al., 2007). Boys are expected to be sex-obsessed, prioritize sex over other forms of intimacy, and to treat women as sexual objects (Kim et al., 2007). Adhering to stereotypical gender beliefs might influence how adolescents feel about sexting, for example, because they may believe that it is normative and expected for girls to present themselves as sexual objects in sexts, and for boys to be overtly sexual and enjoy seeing girls as sexual objects.

As previously discussed, scholars have suggested that societal norms and heterosexual gender roles about dating and sex influence the experience of sexting for boys and girls (Burkett, 2015; Lippman & Campbell, 2014; Ringrose et al., 2012; Ringrose et al., 2013). One study found that girls' endorsement of the belief "men should be sex-focused" was associated with engagement in sexting *or* posting a sexual message to or about someone on the internet (Jewell & Brown, 2013). Therefore, the current study investigated the association between stereotypical gender beliefs related to dating in heterosexual relationships as a potential factor in the experience of sexting with dating partners.

Religiosity. A fourth factor that may be associated with the experience of sexting is religiosity. A survey of college students reporting retrospectively on high school sexting behaviors found that girls and boys who reported high levels of religiosity were less likely to sext or receive a sext than those who were not religious (Strassberg et al., 2014). This sample had an overrepresentation of participants (more than half) who were members of the Church of Jesus Christ of Latter-Day Saints, relied on retrospective reports, and did not specify the dating relationship context. We therefore examined whether high religiosity, regardless of religious denomination, was associated with sexting experiences using a more religiously diverse sample of teens who reported on sexting requests from their dating partners.

Perceived peer sexting frequency. Finally, adolescents' ideas about how common sexting is among their peers and their perception of peers who sext may also influence their sexting experience with partners. In one study, girls were more likely than boys to report that their peers would engage in sexting (Symons, Ponnet, Walrave, & Heirman, 2018). Boys and girls were both most likely to report that a boy asking their girlfriend to send a sext was the most normative sexting script. Additionally, participants in this study perceived that their peers were more likely than they themselves were to engage in sexting (Symons et al., 2018). Sexting behavior has been explained using social learning theory, suggesting in a large survey study of 1612 teens in South Korea

that teens' sexting behaviors were heavily influenced by peer pressure (Lee, Moak, & Walker, 2016). Similarly, Jewell and Brown (2013) found that in their study of 250 college students, peer norms about sexual behavior were the strongest predictor of sexting, higher than endorsement of sexual gender stereotypes. However, another study of 1943 Flemish teens found that while a desire to be popular was associated with sexting behavior, peer pressure was not (Vanden Abeele et al., 2014). To contribute to this discussion, we explored teens' perceptions of peer sexting frequency and tested whether these beliefs influence their experience of sexting requests from a dating partner.

1.3. The current study

For the current study, we sought to extend previous research to further explore why and how girls and boys engage in sexting, focusing on the dating relationship context. We sought to investigate the following research questions: (1) What are girls' and boys' motivations for engaging in sexting, and are there gender differences? (2) How do girls and boys respond to sexting requests from dating partners, and are there gender differences in these responses? (3) Are there other individual factors beyond gender identification that are associated with girls' and boys' emotional reactions to sexting requests from partners? Drawing on previous literature, we investigated age, attachment anxiety and avoidance, self-sexualization, religiosity, endorsement of stereotypical gender beliefs, and perception of peer sexting frequency as potential individual factors that may influence teens' reactions to sexting requests.

2. Method

2.1. Design

This study was conducted as part of a larger cross-sectional survey study of high school students at a large Midwestern suburban high school campus (see Reed, Tolman, & Ward, 2017; Reed, Tolman, Ward, & Safyer, 2016 for other studies from these data). We strove to get a representative sample of students from various grade levels who were enrolled in both required core curriculum courses and elective courses.

2.2. Procedure

Parent/guardian consent forms were distributed to participants under 18 years of age. Consent and assent forms were distributed to all students in participating classrooms, with a 67.28% response rate for returned forms. Participation was both voluntary and anonymous, and a $5 gift card was awarded to students as compensation. Students were asked to complete the survey using school computers, under the supervision of the research team. Data were collected from 2013 to 2014. Analyses were conducted using SPSS Version 24.

2.3. Participants

A total of 947 students completed surveys for a study on digital media use and dating violence. Participants ranged in age from 13 to 19 years (M = 16.32, SD = 3.05), 56% identified as women, and participants identified their race/ethnicity as White (72.2%), Black (7%), Asian (6.7%), Middle Eastern (4.7%), Latino/a (1.7%), and Multiracial (5.6%). Participants identified their religion as Christian-Catholic (43.3%), Christian-Other (20%), No religious identification (9.3%), Christian-Protestant (8.4%), Islam (5.1%), Atheist (3.9%), Hindu (2.3%) and Agnostic (2.3%). Less than one percent of participants identified as any of the following, respectively: Jewish, Buddhist, Jehovah's Witness, or Church of Jesus Christ of Latter Day Saints. Relative to freshman (29.3%) and seniors (29.2%), fewer surveys were completed by sophomores (12.8%) and juniors (20.1%). The race/ethnicity of participants and the distribution of student from each grade

level was similar to school-wide demographics (See Reed et al., 2016 for information on school demographics). Some participants (12.7%) participated in a free/reduced lunch program.

Most participants (96.2%) owned a cell phone at the time of the study, 90.7% of cell phone-users owned a "smartphone," and all participants had access to a home computer. The majority also reported having had at least one dating partner (74.2%), and close to a third (27.1%) reported that they were currently in a dating relationship at the time of the survey. Girls were marginally less likely (71.9%) than boys (77.5%) to report ever having had a dating partner, χ^2 (1, N = 936) = 3.77, p = .052, but girls (70.1%) were significantly more likely than boys (30.7%) to report currently being in a dating relationship, χ^2 (1, N = 694) = 8.24, p = .004. A small subsample of participants reported same-sex dating behavior, as 4.7% of girls and 2.2% of boys reported currently being in a relationship with or having their most recent relationship with a same-sex partner. Only two participants identified their gender identity as transgender or gender queer, and these cases were excluded from analyses because we do not know the specifics of how these individuals identify to appropriately include them in the male-identified or female-identified groups in the gender difference analyses.

2.4. Measures

Religiosity. To measure religiosity, we used the following three items that have been widely used in past media and sexuality research (e.g., Ceglarek & Ward, 2016; Stanton, Jerald, Ward, & Avery, 2017) that capture participants' affect and personal and institutional practice: "How religious are you?" "How often do you go to religious services (like a church or temple)" and "How often do you pray?" Participants used a 5-point Likert scale to respond to each item, and a mean religiosity score was computed across the 3 items.

Sexting behaviors. All participants in the study answered sexting experience questions created for use in this study. Participants were given the prompt: "Which of the following, if any, have you personally done or experienced? Please check all that apply," which was followed by a list of potential sexting experiences. Four items, "*Received* a sexual or nude photo FROM someone (through text, Snapchat, etc.)," "*Sent* a sexual or nude photo OF YOURSELF to someone (through text, Snapchat, etc.)," "Were *asked* to send a sexual or nude photo OF YOURSELF to someone you know," and "Were *asked* to send a sexual or nude photo OF YOURSELF to a dating partner" were used in this study to assess sexting behaviors. Sexting frequency and motivation analyses were conducted for these four items by using single-item scores reflecting whether the participants had or had not experienced that behavior.

Sexting motivations. If participants reported sending a sext, they received a follow-up item that asked, "Why did you do this? Please think about any/all of those you've ever sent and mark all that apply." Respondents were given a checklist of 17 possible motivations, including "to get or keep someone's attention" and "to feel sexy." These items were created for use in this study, adapted from a public national survey (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2008). Motivations were then further categorized into "coercive," meaning that participants engaged in sexting because they were motivated by pressure from someone, and "non-coercive," in which they were not motivated by pressure from someone. See Table 1 for a list of all possible motivations organized by "coercive" and "non-coercive."

Reactions to sexting requests from a partner. Participants were asked to think about actual or hypothetical emotional reactions to "being asked to SEND a sexually suggestive/nude photo of you to a dating partner" and "RECEIVING a sexually suggestive/nude photo of your dating partner." The prompt was "For each of the following behaviors, you will be asked to describe how the behavior would make you feel. Please indicate how you think you would feel (or have felt) on

Table 1
Sexting motivations for all participants (N = 169).

Coercive motivations	Someone pressured you to send it
	Dating partner repeatedly asked for it until you gave in
	Pressure from friends
Non-coercive motivations	To get or keep someone's attention
	As a sexy present for a boyfriend or girlfriend
	To feel sexy
	To get someone to like you
	To get positive feedback or compliments
	To prove that you trust someone
	To show that you care about someone
	To be fun/flirtatious
	To get noticed
	In response to a photo/video you received from someone
	It was a joke
	I was drunk/high at the time
	I don't know
	Other

a normal day when involved in the activity with someone(s) you are in IN A DATING RELATIONSHIP WITH. If you have never had a dating partner, please answer with how you THINK you would respond." Respondents were given a checklist of 12 potential emotions and asked to select all that apply. These items were previously used to assess sexting reactions among undergraduate college students (Reed, Tolman, & Ward, 2016). Positive emotional responses included *amused, happy, and excited*. Negative emotional responses included *annoyed, creeped out, and angry* (See Table 2 for full list). Count variables were created to indicate how many positive and how many negative emotions each participant reported. The count variables for positive and negative reactions to sexting requests by a dating partner ranged from 0 to 7 for negative reactions and from 0 to 5 for positive reactions.

Attachment orientation. Romantic attachment orientation was assessed using the Experiences in Close Relationships Scale-Short form (ECR-S; Wei, Russell, Mallinckrodt, & Vogel, 2007), which has been validated using samples of undergraduate college students (Wei et al., 2007). The scale was comprised of 12 items that measured two dimensions, Anxious attachment and Avoidant attachment, on a 7-point scale from "*Strongly Disagree*" to "*Strongly Agree*." Sample items include "I try to avoid getting too close to my partner" for avoidance (α = 0.63) and "I worry that romantic partners won't care about me as much as I care about them" for anxiety (α = 0.68). Mean scores were computed for each subscale such that higher scores indicate higher levels of that

construct.

Self-sexualization. Participants' self-sexualization was measured with the 8-item Enjoyment of Sexualization Scale (Liss et al., 2011). Example items included "It is important that men/women are physically attracted to me" and "I love to feel sexy" on a 6-item Likert scale from "*Strongly Disagree*" to "*Strongly Agree*." Mean scores were calculated (α = 0.89) such that higher scores indicate greater enjoyment of sexualization.

Heterosexual script. The extent to which participants endorsed heterosexual dating and relationship norms was assessed by a shortened, preliminary version of the Heterosexual Script Scale (Seabrook et al., 2016). The final measure contains 22 items, but only 18 from an early version were used here. Sample items include "Girls should be more concerned about their appearance than guys" and "Guys are always ready for sex." Response are provided on a 6-point scale from "*Strongly Disagree*" to "*Strongly Agree*." Mean scores were computed (α = 0.87) such that higher scores indicate stronger endorsement.

Perceived peer sexting frequency. Participants' perceived peer sexting frequency was assessed with one item asking how common they thought "Sending sexually suggestive messages/pictures using the Internet or cell phones to someone else" is among people their age, which was created for use in this study. Responses were provided on a 4-point scale anchored by "*Not at all common*" and "*Very common*." This item was created for use in this study.

2.5. Data analysis

Analyses were conducted using SPSS software (Version 24). Descriptive analyses revealed participant demographics, sexting frequency, and sexting motivation frequency. Chi-square analyses were conducted to investigate gender difference in sexting behavior, sexting motivations, and actual and hypothetical emotional responses to sexting requests and receiving sexts from a dating partner. Zero-order correlations were conducted between all individual factor variables and positive and negative emotional reactions to sexting requests from a dating partner. These correlations were analyzed separately for girls and boys. Independent samples t-tests were conducted to test gender differences in the individual factors of interest. Finally, four poisson regression analyses were conducted: two for boys to predict actual or hypothetical positive and negative reactions, and two for girls to predict actual or hypothetical positive and negative reactions. Independent variables included in the model were attachment avoidance and anxiety, self-sexualization, endorsement of the heterosexual script, religiosity, perception of peer sexting frequency, and age.

Table 2
Percentage of girls and boys who reported each actual or hypothetical emotional reaction to sexting requests and receiving sexts from a dating partner and gender differences in these reactions.

Emotional Reaction	Asked to send a sext		Chi square test (χ^2)	Receiving a sext		Chi square test (χ^2)
	Girls (N = 358)	Boys (N = 268)		Girls (N = 343)	Boys (N = 272)	
Negative reactions						
Annoyed	**58.1%**	18.7%	98.42***	**33.2%**	5.5%	70.33***
"Creeped out"	**43.3%**	26.9%	17.92***	**52.2%**	13.6%	99.11***
"Turned off"	**50%**	19.4%	61.62***	**36.2%**	5.9%	79.05***
Angry	**32.1%**	7.5%	55.10***	**20.7%**	2.2%	47.37***
Scared	**26.8%**	13.4%	16.50***	**20.7%**	5.9%	27.42***
Disappointed	**41.3%**	16.8%	43.32***	**32.4%**	12.1%	34.62***
Embarrassed	**25.7%**	12.7%	16.14***	**20.7%**	5.5%	29.08***
Positive reactions						
Amused	8.4%	**32.1%**	57.07***	15.7%	**36.4%**	34.63***
"Turned on"	5.6%	**27.6%**	58.26***	14.9%	**62.1%**	147.49***
Excited	3.9%	**19.4%**	39.00***	7.6%	**44.5%**	113.592***
Happy	2%	**13.4%**	31.56***	5.2%	**43.4%**	128.09***
Sexy	7.3%	**17.9%**	16.67***	3.2%	**27.6%**	74.88***

Note. ***p < .001. Greater percentage for significant gender differences shown in bold.

3. Results

3.1. Frequency of sexting

To address the first research question, we examined frequency of sexting behaviors by gender for the entire sample regardless of dating experience. Using chi square analyses, we found that the rates of receiving a sexually suggestive or nude photo from someone were lower for girls (35.9%) than boys (44.4%), χ^2 (1, N = 922) = 6.70, p = .010, but that a significantly higher proportion of girls (20.7%) than boys (15.3%) reported having sexted a photo of themselves to someone; χ^2 (1, N = 922) = 4.35, p = .037.

For those with dating experience, the rates of receiving a sexually suggestive or nude photo were similar between girls (44.9%) and boys (51.9%), χ^2 (1, N = 682) = 3.34, p = .068, and a significantly higher portion of girls (28.1%) than boys (19.5%) reported having sexted a photo of themselves to someone, χ^2 (1, N = 682) = 6.80, p = .009.

3.2. Motivations for sexting

Chi-square analyses were conducted to explore gender differences in motivations to sext regardless of dating experience, for those who responded to motivations to sext items (N = 169). Girls' top motivations to sext included *to be fun or flirtatious* (56%), *someone pressured you to send it* (39.4%), *as a sexy present for a boyfriend or girlfriend* (36.7%), and *a dating partner repeatedly asked for it until you gave in* (33%). Among teen girls with sexting experience, 71.6% reported at least one non-coercive motivation for sexting, 52.3% reported at least one coercive motive for sexting, and 32.1% reported at least one non-coercive *and* at least one coercive motive for sexting.

Boys' top motivating reasons to sext included *to be fun or flirtatious* (55%) and *as a sexy present for a boyfriend or girlfriend* (53.3%). Among teen boys with sexting experience, 76.7% reported at least one non-coercive motive for sexting, 23.3% reported at least one coercive motive for sexting, and 16.7% reported at least one non-coercive motive and one coercive motive for sexting. These results indicate that, although girls and boys are both most often motivated to be "fun or flirtatious," girls are also more often motivated by pressure to sext than are boys.

Significant gender differences were found for the following motivations to sext: *someone pressured you to send it* (39.4% of girls versus 15% of boys), χ^2 (1, N = 169) = 10.86, p = .001, *as a sexy present for a boyfriend or girlfriend* (36.7% of girls versus 53.3% of boys), χ^2 (1, N = 169) = 4.38, p = .036, and *dating partner repeatedly asked for it until you gave in* (33% of girls versus 15% of boys), χ^2 (1, N = 169) = 6.44, p = .011. There was no significant gender difference in endorsing at least one positive motive for sexting (71.6% of girls versus 76.7% of boys), χ^2 (1, N = 169) = .517 p = .472, but there was a significant gender difference for endorsing at least one pressure motive for sexting (52.3% of girls and 23.3% of boys), χ^2 (1, N = 169) = 13.32, p < .001 and for endorsing at least one positive

motive *and* one pressure motive for sexting (32.1% of girls and 16.7% of boys), χ^2 (1, N = 169) = 4.72, p = .030. These results suggest that many motivations for sexting differ among girls and boys, with girls reporting experiencing more coercion to sext than boys.

3.3. Emotional reactions to sexting with dating partner

Chi-square analyses were also used to investigate how girls and boys reacted emotionally to sext requests and receiving sexts from their dating partner. Participants were asked to think about a time when this happened, and if they have not had this experience, they were asked to report how they might hypothetically react. See Table 2 for a summary of the percentage of boys and girls who reported each emotional reaction and gender differences. Notably, girls with dating experience and boys with dating experience differed significantly on all potential emotional responses to being asked to *send a sext* by a dating partner. Girls reported feeling significantly more annoyed, creeped out, turned off, angry, scared, disappointed, and embarrassed than did boys; each of the possible negative responses. Conversely, boys were more likely to report all positive responses, feeling significantly more amused, happy, sexy, turned on, and excited than did girls.

Similar patterns were found for girls' and boys' emotional reactions to *receiving* a sext. Girls were more likely to report all possible negative responses; reporting feeling significantly more annoyed, creeped out, turned off, angry, scared, disappointed, and embarrassed than did boys after receiving a sext from a partner. Again, boys reported more positive responses, feeling significantly more amused, happy, sexy, turned on, and excited than did girls. Therefore, sexting seemed to be a more negative experience for girls and a more positive experience for boys in dating relationships. These analyses were also run with the full sample (including teens who did not report dating experience), and these gender differences remained.

3.4. Individual factors associated with experiences of sexting requests from a partner

Zero-order correlations. Zero order correlations were conducted between all individual factor variables and positive and negative emotional reactions to sexting requests from a dating partner. These analyses only included boys and girls who reported that they had dating experience (N = 696). Because gender differences were a primary hypothesis for this study, zero-order correlations were shown separately for girls (see Table 3) and boys (see Table 4).

Gender differences in individual factors. We conducted independent samples t-tests to examine gender differences for our variables of interest among girls and boys with dating experience. Boys' reported self-sexualization (M = 4.11) was significantly higher than girls' (M = 3.94); $t(6\,9\,3)$ = −2.25, p = .025. Boys (M = 3.58) also reported greater endorsement of the heterosexual script than did girls (M = 3.22); $t(6\,9\,2)$ = −6.12, p < .001. Girls (M = 2.88) reported greater religiosity than did boys (M = 2.63); $t(6\,9\,4)$ = 3.02, p = .003,

Table 3
Zero-order correlations between variables of interest for girls with dating experience.

Variable	1	2	3	4	5	6	7	8	9
1. Positive Emotional Reaction	1								
2. Negative Emotional Reaction	−0.40***	1							
3. Attachment Avoidance	0.02	0.07	1						
4. Attachment Anxiety	0.10	0.04	0.04	1					
5. Self-Sexualization	0.24***	−0.17**	0.001	0.27***	1				
6. Heterosexual Script Endorsement	0.02	−0.05	0.02	0.17**	0.37***	1			
7. Religiosity	−0.11**	0.17***	−0.08	−0.07	−0.04	−0.01	1		
8. Perception of Sexting Peer Norms	0.15***	−0.08	−0.01	0.19***	0.15**	0.02	0.004	1	
9. Age	0.18***	−0.24***	−0.08	−0.03	0.08	−0.10	0.01	0.07	1

Note. ***p < .001; **p < .01; *p < .05. Two-tailed correlations.

Table 4
Zero-order correlation between variables of interest for boys with dating experience.

Variable	1	2	3	4	5	6	7	8	9
1. Positive Emotional Reaction									
2. Negative Emotional Reaction	−0.53***								
3. Attachment Avoidance	−0.21**	0.16*							
4. Attachment Anxiety	0.05	−0.01	−0.16**						
5. Self-Sexualization	0.28***	−0.29***	−0.20***	0.25***					
6. Heterosexual Script Endorsement	0.12	−0.15*	−0.01	0.11	0.51***				
7. Religiosity	−0.11	−0.02	−0.08	−0.003	0.12*	0.09			
8. Perceptions of Sexting Peer Norms	0.16*	−0.09	−0.09	−0.05	0.10	0.10	−0.13*		
9. Age	0.14*	−0.08	0.06	−0.001	−0.03	0.03	0.05	−0.07	

Note. ***$p < .001$; **$p < .01$; *$p < .05$. Two-tailed correlations.

and girls ($M = 1.98$) perceived great peer sexting frequency than boys ($M = 1.79$); $t(625.11) = 2.56, p = .011$. Attachment avoidance did not differ by gender (Girls Mean = 14.75; Boys Mean = 14.95; $t(675) = −0.51, p = .661$), and girls ($M = 22.45$) were significantly more anxiously attached than boys ($M = 21.42$); $t(661.58) = 2.12, p = .034$.

Regression analyses. Poisson regression analyses were conducted to predict variance on count variables (Coxe, West, & Aiken, 2009). Four poisson regression analyses were conducted: two for boys to predict actual or hypothetical positive and negative reactions, and two for girls to predict actual or hypothetical positive and negative reactions. Independent variables included in the model were attachment avoidance and anxiety, self-sexualization, endorsement of the heterosexual script, religiosity, perception of peer sexting frequency, and age. These analyses again included boys ($N = 314$) and girls ($N = 382$) who reported dating experience. All four of the overall models predicted positive reactions of girls (Pearson $\chi^2/df = 1.57$; Omnibus likelihood ratio $\chi^2 = 69.44, p < .001$), positive reactions of boys (Pearson $\chi^2/df = 1.44$; Omnibus likelihood ratio $\chi^2 = 56.92, p < .001$), negative reactions of girls (Pearson $\chi^2/df = 1.15$; Omnibus likelihood ratio $\chi^2 = 52.51, p < .001$), and negative reactions of boys (Pearson $\chi^2/df = 1.33$; Omnibus likelihood ratio $\chi^2 = 33.85, p < .001$) fit significantly better than the intercept-only models.

For girls, we found that greater self-sexualization, lower religiosity, perceptions of peer sexting as more frequent, and being older predicted more positive emotional reactions to sexting requests (see Table 5). For boys, lower attachment avoidance, greater self-sexualization, and lower religiosity predicted more positive emotional reactions to sexting requests (see Table 5). For girls, we found that greater attachment anxiety, lower self-sexualization, greater religiosity, and being younger predicted more negative emotional reactions to sexting requests (see Table 5). For boys, the only significant predictor of negative emotional reactions to sexting requests from a dating partner was lower levels of self-sexualization (see Table 5).

4. Discussion

This study focused on the context of sexting behaviors for adolescent girls and boys, exploring motivations to sext and the experience of sexting with dating partners. Our findings showed gender differences in both *why* adolescents are sending these messages and how they *feel* about these experiences. Beyond the gender identity of participants, this study also identified important individual factors associated with how girls and boys experience receiving sexting requests from their dating partners. This study expanded on the emerging literature on the developmental importance of sexting for adolescents and their dating relationships and lent support to the notion that sexting occurs within a broader context of gender socialization.

4.1. Sexting and gender in dating relationships

Contrary to expectations, girls in our sample were more likely than boys to report sending a sext, both in our full sample and in those who reported dating experience. As predicted, girls were more likely to experience pressure to sext – both in general and from a dating partner. Both girls and boys were most likely to report being "fun and flirtatious" as their motivation to sext, consistent with previous research (Albury & Crawford, 2012; Drouin et al., 2013; Henderson & Morgan, 2011). A growing literature supports that sexting is commonly used for sexual arousal, body image management, and increasing intimacy between partners (Bianchi, Morelli, Baiocco, & Chirumbolo, 2019; Hudson & Marshall, 2018).

Girls were also more likely to report negative emotional responses to sexting requests from a dating partner and receiving a sext from a dating partner. This finding is consistent with our predictions and with previous literature suggesting that girls experience more pressure to sext and have a more negative emotional experience (e.g., Burén & Lunde, 2018; Klettke et al., 2014; Ringrose et al., 2013). Taken together, these findings add to a developing picture of adolescent sexting as a normative behavior meant to achieve developmental milestones

Table 5
Predictors of actual and hypothetical emotional reactions to sexting requests from a dating partner.

	Positive				Negative			
	Girls		Boys		Girls		Boys	
	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Att Avoidance	0.01	1.01	**−0.04****	0.96	0.01	1.01	0.02	1.02
Att Anxiety	0.01	1.01	−0.002	1.00	**0.01***	1.01	0.02	1.02
Self-Sexualization	**0.65****	1.92	**0.32****	1.37	**−0.10***	0.91	**−0.27****	0.76
Heterosexual Script	−0.18	0.84	0.01	1.01	−0.02	0.98	−0.04	0.96
Religiosity	**−0.19***	0.83	**−0.14***	0.87	**0.12****	1.12	0.02	1.02
Peer Norms	**0.31***	1.37	0.12	1.12	−0.04	0.96	−0.09	0.91
Age	**0.03****	1.03	0.004	1.00	**−0.01****	0.99	−0.003	1.00

Note. ***$p < .001$; **$p < .01$; *$p < .05$. Significant predictors are bolded. Att Avoidance = Attachment avoidance; Att Anxiety = Attachment anxiety; Het Script = Heterosexual Script endorsement; Peer norms = Perception of sexting as common among peers.

that is *usually* consensual and enjoyable for both boys and girls; however, girls are more likely than boys to have negative experiences around sexting that warrant concern. This study also found that some boys have negative experiences with sexting, highlighting that societal expectations to engage in certain sexual behaviors may also be harmful for boys.

We also explored potential differences in girls' and boys' emotional reactions to sexting requests from a dating partner. Our results replicated findings among college students (Reed et al., 2016) and teens (Burkett, 2015), demonstrating that younger girls in dating relationships are also more likely to have more negative emotional responses to sexting with dating partners. This finding reveals that sexting within dating relationships is not always positive, and that girls and boys may feel very differently about the role that sexting plays in their relationships. It is possible that social desirability influenced boys' responses to these items and led them to respond more positively about sexting than they actual feel, but previous qualitative research has also shown that boys are more likely to experience sexting as a positive expression of their masculinity (Ringrose et al., 2013) and receive social rewards and status for engaging in sexting (Burkett, 2015; Lippman & Campbell, 2014; Ringrose et al., 2013). Future research could test this social desirability hypothesis by directly measuring social desirability and conducting cognitive testing on how boys process and respond to these types of survey items.

This study investigated gender in two different ways: one concerning the identity of participants and their partners, and a second concerning their attitudes about gender roles within heterosexual relationships. It was unexpected that heterosexual script endorsement was not a significant predictor of positive or negative responses to sexting requests from a dating partner. It was predicted that stronger endorsement of these rigid stereotypical beliefs about girls and boys in relationships would be associated with more positive responses to sexting requests for girls, as the heterosexual script dictates that girls should be sexually desirable to their male partners but not promiscuous, and sexting may be a means of performing sexiness without engaging in face-to-face sexual behavior (Kim et al., 2007). There are several possible reasons for this lack of association. First, perhaps heterosexual script endorsement is associated with frequency of sexting or sexting requests, but not how girls and boys *feel* about sexting requests from a partner. Perhaps how girls and boys feel about sexting request is more driven by other factors, such as those included in the current study. Previous work found that girls' endorsement of the belief "men should be sex-focused" was associated with sexting (Jewell and Brown, 2013); however, this study did not assess how girls felt about engaging in these behaviors.

Second, it is possible that sexting in dating relationships does not fit neatly within the heterosexual script for girls and boys, as the script does not describe digital dating behaviors. As sexting becomes a more frequent aspect of dating relationships, perhaps girls and boys are negotiating where sexting fits within the heterosexual script. Girls who endorse the heterosexual script might still be negotiating whether sexting is an active or passive sexual behavior, whether it is a way for "good girls" to be sexual without having sex, or whether sexting is a promiscuous behavior they should avoid. Conversely, it may mean something differently for a girl to ask her male partner to sext, and boys who endorse the heterosexual script may not know how to interpret these requests. Other scholars have written about how sexting is a no-win situation for girls, while boys do not suffer social consequences for engaging in or declining to engage in sexting behavior (e.g., Burkett, 2015; Lippman & Campbell, 2014; Ringrose et al., 2012). Hasinoff (2012) also argues that viewing sexting among girls as a form of "media production" provides girls the opportunity to control and negotiate their sexual images in a digital world, which may run counter to stereotypical scripts for girls. It appears that sexting has a complex place in the heterosexual script discourse, and it is worth considering further how societal beliefs about teens and sexuality shape conversations about sexting.

4.2. Individual factors associated with reactions to sexting

Individual factors beyond gender that were associated with positive or negative emotional responses to sexting requests from dating partners included religiosity, self-sexualization, age, and attachment avoidance and anxiety. For girls, being younger was associated with more negative emotional responses to sexting requests. This link is consistent with findings from reviews of the sexting literature for adolescents, which show that older adolescents and adults are more likely to sext than younger adolescents (Madigan et al., 2018). It is unclear why this effect was not shown for boys. Previous literature did not examine how younger teens might *feel* about their sexting experience, just that they were more likely to sext. Perhaps because we focused on the emotional experience of sexting requests with a partner, these results differed. Previous literature explains that there is a positive association between age and sexting because older adolescents are more likely to have dating experience, sexual experience, and access to mobile devices (Klettke et al., 2014). Future research should further examine this association beyond frequency and explore whether older adolescents also feel more positively about their sexting experiences.

For both girls and boys, lower levels of religiosity predicted positive emotional responses to sexting requests from a dating partner. The converse, that higher levels of religiosity predicted more negative emotional responses, was found only for girls. Research has shown that more religious teens tend to have less permissive attitudes about premarital sexual activity (Werner-Wilson, 1998). Therefore, religious teens might also be less accepting of sexting behaviors. Consistent with expectations and previous research that depended on college students' retrospective reports of high school sexting behavior (Strassberg et al., 2014), our results from adolescents in high school support that more religious high school students are less likely to respond positively to sexting with a dating partner.

Greater enjoyment of sexualization also predicted more positive responses to sexting requests for both girls and boys, and lower levels of enjoyment predicted more negative responses. Consistent with previous work by Hasinoff (2012), if adolescents enjoy viewing themselves as sexual objects or highly value their sexual desirability, sexting may be a way to express and have agency over their sexuality. Previous literature found links between societal expectations around the importance of girls displaying their body to appear desirable to boys and sexting (Burkett, 2015; Ringrose et al., 2013), and an association between self-objectification and body image reinforcement and sexting (Bianchi et al., 2017). This study expanded on these findings by demonstrating that higher levels of self-sexualization are linked to sexting frequency *and* experiencing sexting requests from partners as more enjoyable. These findings contribute to the conversation about the role of sexting in sexual agency and intimacy in relationships. However, our findings do not illuminate the link between sexting and other aspects of self-sexualization, or whether self-sexualization has other consequences for adolescent mental health, self-objectification, or likelihood for risky sexual behaviors.

Perceptions of peer sexting also predicted girls' responses to sexting requests from dating partners. Girls who perceived sexting as more common among their peers were more likely to report positive emotional responses to sexting requests. Girls, therefore, seem to feel more positively about engaging in a behavior that they view as more socially acceptable – consistent with their developmental period in which adolescents seek conformity and social acceptance (Fuligni, Eccles, Barber, & Clements, 2001). This finding supports previous work that found that girls who believed sexting was more common among their peers engaged in more sexting (Symons et al., 2018), showing that girls who perceive sexting as more frequent among peers also have more positive experiences with sexting in relationships. However, we did not find similar influences of perceptions of peer sexting frequency for boys.

Symons et al. (2018) also found that adolescents reported that it was the most normative for boys to request a sext from a female partner. As the majority of our sample was heterosexual, it is possible that the boys were more confused about how to interpret sexting requests from female partners because this is a less normative sexual script for sexting. Perceptions around peers' sexting and its influence on adolescent behavior are shaped by gender and other individual and social characteristics, and this nuance may not be captured in a single survey item.

Finally, as we hypothesized, attachment avoidance and anxiety were also significant predictors of emotional responses to sexting requests for girls and boys, although they were not among the most salient factors. Preliminary research on the link between attachment and sexting suggested that anxiously attached girls may engage in sexting to create intimacy and closeness in their relationships, and avoidant boys may use sexting to "keep things casual" or avoid intimacy with a partner (Drouin & Landgraff, 2012; Gentzler & Kerns, 2004). However, we found the opposite for girls: greater attachment anxiety predicted negative emotional responses to sexting requests. Our findings for boys were consistent with expectations, and boys with lower level of attachment avoidance reported more positive emotional responses to sexting requests. It is possible that anxiously attached girls in our study had more negative emotional responses to sexting requests because of a difference in sexting between acquaintances or casual sex partners and between dating partners. With dating partners, anxiously attached girls may feel distress when receiving sexting requests from partners if they do not want to engage in sexting and fear that refusal may lead to conflict in their relationship. Another possibility is that previous research found that a desire for intimacy and closeness was a *motivation* for sexting, but does not indicate that intimacy and closeness were the actual *outcome*; rather, perhaps if sexting requests from a partner did not bring about intimacy, it might lead to a more negative emotional experience. Future research should investigate the dynamics of attachment and sexting in adolescent dating relationships, as anxious or avoidant teens may be more at risk for emotional distress from sexting than other teens.

4.3. Limitations and future directions

Although our findings build nicely on existing analyses of sexting, we acknowledge several limitations that future research should address. First, our data were self-reported and cross-sectional. Therefore, caution should be taken when interpreting these results. There may be reporting bias inherent in asking adolescents about a potentially stigmatized sexual behavior, and we do not know whether their reactions to and motivations for sexting change over time. Second, we cannot generalize these findings beyond a primarily white suburban adolescent population from one high school campus. Third, some survey questions were given to all participants regardless of dating experience, and others were only presented to those who reported having a past dating partner.

There were also limitations in how some of our dependent variables were measured. The Chronbach's alphas for the attachment insecurity measure subscales were not as high as expected; therefore, these results should be interpreted with caution. Several measures asked participants to report on actual or hypothetical emotions or behaviors. It is difficult to untangle whether participants were thinking of an actual dating relationship, several relationships, or hypothetical situations when responding to these items. Our key dependent variable was "reactions to being asked to sext by a dating partner." This is one specific circumstance out of many possible sexting experiences, and we cannot generalize our regression results to other sexting situations or to sexting outside of a dating relationship. Finally, our independent variable measuring perceptions of peer sexting frequency relied on a single item.

Our findings warrant further research in several areas related to adolescent sexting. First, measurement of sexting behavior should be specific to the relationship context between the sender and receiver,

and should measure frequency, emotional experience, and consequences of sexting behavior. Sexting should be considered an important part of adolescent intimacy and sexuality expression both within and outside dating relationships, and most sexting is with dating partners and is motivated by a desire to have fun and be flirtatious. However, more research is needed to examine when and how nonconsensual and pressured sexting impacts adolescents, especially for girls who are more likely to experience pressure. We have also raised several other individual factors worthy of further study for their influence on sexting, particularly the association between self-sexualization and sexting, attachment anxiety and sexting for girls, and peer norms and the emotional experience of sexting.

5. Implications

The current study makes important contributions to the literature on sexting motivations and the role of sexting within adolescent dating relationships. Our findings support that sexting behaviors are situated in distinct social and emotional contexts for girls and boys. Thus, if we are to intervene at any level, we must account for the robust gender-related contextual differences in which sexting occurs and provide gender-relevant recommendations. This context might include the recognition that although both girls and boys are sexting, girls might be experiencing many more emotional and social consequences as a result of this involvement. The current study highlights the heterogeneity in sexting experiences among girls and boys, and documents which adolescents might be most at risk for negative consequences from sexting involvement. We recommend that future researchers, practitioners, and educators are mindful of contextual factors and specifically address coercive sexting situations that may include pressure and lack of consent. Given the urgency of public discussion and the limited understanding of this topic, thoughtful research and intervention are particularly important.

CRediT authorship contribution statement

Lauren A. Reed: Conceptualization, Investigation, Data curation, Writing - original draft, Writing - review & editing, Project administration. **Margaret P. Boyer:** Methodology, Formal analysis, Writing - original draft. **Haley Meskunas:** Writing - original draft. **Richard M. Tolman:** Conceptualization, Writing - review & editing, Supervision. **L. Monique Ward:** Conceptualization, Writing - review & editing, Supervision.

References

Albury, K., & Crawford, K. (2012). Sexting, consent, and young people's ethics: Beyond Megan's story. *Continuum: Journal of Media and Cultural Studies, 26*, 463–473.

American Psychological Association, Task Force on the Sexualization of Girls. (2007). Report of the APA Task Force on the Sexualization of Girls. Retrieved from the APA Task Force on the Sexualization of Girls. Retrieved from < http://www.apa.org/pi/women/programs/girls/report-full.pdf > .

Bianchi, D., Morelli, M., Baiocco, R., & Chirumbolo, A. (2019). Individual differences and developmental trends in sexting motivations. *Current Psychology,* 1–10.

Bianchi, D., Morelli, M., Nappa, M. R., Baiocco, R., & Chirumbolo, A. (2017). Sexting as a mirror on the wall: Body-esteem attribution, media models, and objectified-body consciousness. *Journal of Adolescence, 61C*, 164–172. https://doi.org/10.1016/j.adolescence.2017.10.006.

Bianchi, D., Morelli, M., Nappa, M. R., Baiocco, R., & Chirumbolo, A. (2018). A bad romance: Motivations and teen dating violence. *Journal of Interpersonal Violence,* 1–21.

Bindesbøl Holm Johansen, K., Pedersen, B. M., & Tjørnhøj-Thomsen, T. (2019). Visual gossiping: Non-consensual 'nude' sharing among young people in Denmark. Culture, Health & Sexuality, 21, 1029–1044.

Bowlby, J. (1969). *Attachment and loss: Attachment.* John Bowlby: Basic Books.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult

attachment: An integrative overview.

Brinkley, D. Y., Ackerman, R. A., Ehrenreich, S. E., & Underwood, M. K. (2017). Send and receiving text messages with sexual content: Relations with early sexual activity and borderline personality features in late adolescence. *Computers in Human Behavior, 70,* 119–130.

Burén, J., & Lunde, C. (2018). Sexting among adolescents: A nuanced and gendered online challenge for young people. *Computers in Human Behavior, 85,* 210–217.

Burkett, M. (2015). Sex(t) talk: A qualitative analysis of young adults' negotiations of the pleasures and perils of sexting. *Sexuality & Culture, 19,* 835–863.

Campbell, S. W., & Park, Y. J. (2014). Predictors of mobile sexting among teens: Toward a new explanatory framework. *Mobile Media & Communication, 2,* 20–39. https://doi.org/10.1177/2050157913502645.

Ceglarek, P., & Ward, L. M. (2016). A tool for help or harm? How associations between social networking use, social support, and mental health differ for sexual minority and heterosexual youth. *Computers in Human Behavior, 65,* 201–209.

Choi, H., Van Ouytsel, J., & Temple, J. R. (2016). Association between sexting and sexual coercion among female adolescents. *Journal of Adolescence, 53,* 164–168.

Crimmins, D. M., & Seigfried-Spellar, K. C. (2014). Peer attachment, sexual experiences, and risky online behaviors as predictors of sexting behaviors among undergraduate students. *Computers in Human Behavior, 32,* 268–275.

Cooper, K., Quayle, E., Jonsson, L., & Svedin, C. G. (2016). Adolescents and self-taken sexual images: A review of the literature. *Computers in Human Behavior, 55,* 706–716.

Coxe, S., West, Stephen G., & Aiken, L. S. (2009). The analysis of count data: A gentle introduction to poisson regression and its alternatives. *Journal of Personality Assessment, 91,* 121–136.

Dake, J. A., Price, J. H., Maziarz, L., & Ward, B. (2012). Prevalence and correlates of sexting behavior in adolescents. *American Journal of Sexuality Education, 7,* 1–15.

Delevi, R., & Weisskirch, R. S. (2013). Personality factors as predictors of sexting. *Computers in Human Behavior, 29,* 2589–2594.

Drouin, M., & Landgraff, C. (2012). Texting, sexting, and attachment in college students' romantic relationships. *Computers in Human Behavior, 28,* 444–449.

Drouin, M., & Tobin, E. (2014). Unwanted but consensual sexting among young adults: Relations with attachment and sexual motivations. *Computers in Human Behavior, 31,* 412–418.

Drouin, M., Vogel, K. N., Surbey, A., & Stills, J. R. (2013). Let's talk about sexting, baby: Computer-mediated sexual behaviors among young adults. *Computers in Human Behavior, 29,* A25–A30.

Englander, E. (2015). Coerced sexting and revenge porn among teens. *Bullying, Teen Aggression & Social Media, 1,* 19–21.

Englander, E., & McCoy, M. (2017). Pressured Sexting and Revenge Porn in a Sample of Massachusetts Adolescents. *International Journal of Technoethics, 8,* 16–25.

Fuligni, A. J., Eccles, J. S., Barber, B. L., & Clements, P. (2001). Early adolescent peer orientation and adjustment during high school. *Developmental Psychology, 37,* 28–36.

Gentzler, A. L., & Kerns, K. A. (2004). Associations between insecure attachment and sexual experiences. *Personal Relationships, 11,* 249–265.

Gill, R. (2008). Empowerment/sexism: Figuring female sexual agency in contemporary advertising. *Feminism & Psychology, 18,* 35–60. https://doi.org/10.1177/0959353507084950.

Goggin, G., & Crawford, K. (2011). Movable types: Youth and the emergence of mobile social media in Australia. *Media Asia Journal, 37,* 224–232.

Hasinoff, A. A. (2012). Sexting as media production: Rethinking social media and sexuality. *New Media & Society, 15,* 449–465.

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52,* 511.

Henderson, L., & Morgan, E. (2011). Sexting and sexual relationships among teens and young adults. *McNair Scholars Research Journal, 7* http://scholarworks.boisestate.edu/mcnair_journal/vol7/iss1/9.

Hudson, H. K., & Fetro, J. V. (2015). Sexual activity: Predictors of sexting behaviors and intentions to sext among selected undergraduate students. *Computers in Human Behavior, 49,* 615–622. https://doi.org/10.1016/j.chb.2015.03.048.

Hudson, H. K., & Marshall, S. A. (2018). Consequences and predictors of sexting among selected southern undergraduates. *International Journal of Sexual Health, 30,* 20–27.

Jewell, J. A., & Brown, C. S. (2013). Sexting, catcalls, and butt slaps: How gender stereotypes and perceived group norms predict sexualized behavior. *Sex Roles, 69,* 594–604. https://doi.org/10.1007/s11199-013-0320-1.

Kernsmith, P. D., Victor, B. G., & Smith-Darden, J. P. (2018). Online, offline, and over the line: Coercive sexting among adolescent dating partners. *Youth & Society, 50,* 891–904.

Kim, J. L., Sorsoli, C., Collins, K., Zylbergold, B. A., Schooler, D., & Tolman, D. L. (2007). From sex to sexuality: Exposing the heterosexual script on primetime network television. *Journal of Sex Research, 44,* 145–157.

Kipnis, L., & Reeder, J. (1997). White trash girl: The interview. In M. Wray, & A. Newitz (Eds.). *White trash: Race and class in America* (pp. 113–130). New York, NY: Routledge.

Klettke, B., Hallford, D. J., & Mellor, D. J. (2014). Sexting prevalence and correlates: A systematic literature review. *Clinical Psychology Review, 34,* 44–53.

Lee, C. H., Moak, S., & Walker, J. T. (2016). Effects of self-control, social control, and social learning on sexting behavior among South Korean youths. *Youth & Society, 48,* 242–264.

Levine, D. (2013). Sexting: A terrifying health risk… or the new normal for young adults?. Journal of Adolescent Health, 52, 257–258.

Lenhart, A. (2009). Teens and sexting. *Pew Internet & American Life Project, 1,* 1–26.

Lippman, J. R., … Campbell, S. W. (2014). Damned if you do, damned if you don't… if you're a girl: Relational and normative contexts of adolescent sexting in the united states. *Journal of Children and Media, 8,* 371–386.

Liss, M., Erchull, M. J., & Ramsey, L. R. (2011). Empowering or oppressing? Development and exploration of the enjoyment of sexualization scale. *Personality and Social Psychology Bulletin, 37,* 55–68. https://doi.org/10.1177/0146167210386119.

Madigan, S., Ly, A., Rash, C. L., Van Ouytsel, J., & Temple, J. R. (2018). Prevalence of multiple forms of sexting behavior among youth: A systematic review and meta-analysis. *JAMA Pediatrics, 172,* 327–335. https://doi.org/10.1001/jamapediatrics.2017.5314.

McDaniel, B. T., & Drouin, M. (2015). Sexting among married couples: Who is doing it, and are they more satisfied? *Cyberpsychology, Behavior, and Social Networking, 18,* 628–634.

Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. *Advances in Experimental Social Psychology, 35,* 53–152.

Morelli, M., Bianchi, D., Baiocco, R., Pezzuti, L., & Chirumbolo, A. (2016a). Not-allowed sharing of sexts and dating violence from the perpetrator's perspective: The moderation role of sexism. Computers in Human Behavior, 56, 163–169. doi: 10.1016/j.chb.2015.11.047.

Morelli, M., Bianchi, D., Baiocco, R., Pezzuti, L., & Chirumbolo, A. (2016b). Sexting, psychological distress and dating violence among adolescents and young adults. *Psicothema, 28,* 137–142. https://doi.org/10.7334/psicothema2015.193.

Morelli, M., Bianchi, D., Baiocco, R., Pezzuti, L., & Chirumbolo, A. (2017). Sexting behaviors and cyber pornography addiction among adolescents: The moderating role of alcohol consumption. *Sexuality Research and Social Policy, 14,* 113–121 In this issue.

Reed, L. A., Tolman, R. M., & Ward, L. M. (2016). Snooping and sexting: Digital media as a context for dating aggression and abuse among college students. *Violence Against Women, 22,* 1556–1576.

Reed, L. A., Tolman, R. M., & Ward, L. M. (2017). Gender matters: Experiences and consequences of digital dating abuse victimization in adolescent dating relationships. *Journal of Adolescence, 59,* 79–89.

Reed, L. A., Tolman, R. M., Ward, L. M., & Safyer, P. (2016). Keeping tabs: Attachment insecurity and electronic intrusion in high school dating relationships. *Computers in Human Behavior, 58,* 259–268.

Rice, E., Rhoades, H., Winetrobe, H., Sanchez, M., Montoya, J., Plant, A., & Kordic, T. (2012). Sexually explicit cell phone messaging associated with sexual risk among adolescents. *Pediatrics, 130,* 667–673.

Ringrose, J., Gill, R., Livingstone, S., & Harvey, L. (2012). *A qualitative study of children, young people and 'sexting': A report prepared for the NSPCC.* London: National Society for the Prevention of Cruelty to Children.

Ringrose, J., Harvey, L., Gill, R., & Livingstone, S. (2013). Teen girls, sexual double standards and "sexting": Gendered value in digital image exchange. *Feminist theory, 14,* 305–323.

Salter, M., Crofts, T., & Lee, M. (2013). Beyond criminalization and responsibilisation: Sexting, gender and young people. *Current Issues in Criminal Justice, 24,* 301–316.

Seabrook, R. C., Ward, L. M., Reed, L., Manago, A., Giaccardi, S., & Lippman, J. R. (2016). Our scripted sexuality: The development and validation of a measure of the heterosexual script and its relation to television consumption. *Emerging Adulthood, 4,* 338–355.

Stanton, A., Jerald, M., Ward, L. M., & Avery, L. (2017). Social media contributions to strong Black woman ideal endorsement and Black women's mental health. *Psychology of Women Quarterly, 41,* 465–478. https://doi.org/10.1177/0361684317732330.

Strassberg, D. S., McKinnon, R. K., Sustaíta, M. A., & Rullo, J. (2013). Sexting by high school students: An exploratory and descriptive study. *Archives of Sexual Behavior, 42,* 15–21.

Strassberg, D. S., Rullo, J. E., & Mackaronis, J. E. (2014). The sending receiving of sexually explicit cell phone photos ("Sexting") while in high school: One college's students' retrospective reports. *Computers in Human Behaviors, 41,* 177–183.

Symons, K., Ponnet, K., Walrave, M., & Heirman, W. (2018). Sexting scripts in adolescent relationships: Is sexting becoming the norm? *New Media & Society,* 1–22.

The National Campaign to Prevent Teen and Unplanned Pregnancy and CosmoGirl.com. (2008). Sex and Tech: Results from a survey of teens and young adults. Retrieved from: < https://www.dibbleinstitute.org/pdf/SexTech_Summary.pdf > October 8, 2009.

Temple, J. R., Le, V. D., van den Berg, P., Ling, Y., Paul, J. A., & Temple, B. W. (2014). Brief report: Teen sexting and psychosocial health. *Journal of Adolescence, 37,* 33–36. https://doi.org/10.1016/j.adolescence.2013.10.008.

Vanden Abeele, M., Campbell, S. W., Eggermont, S., & Roe, K. (2014). Sexting, mobile porn use, and peer group dynamics: Boys' and girls' self-perceived popularity, need for popularity, and perceived peer pressure. *Media Psychology, 17,* 6–33.

van Oosten, J. M., & Vandenbosch, L. (2017). Sexy online self-presentation on social network sites and the willingness to engage in sexting: A comparison of gender and age. *Journal of Adolescence, 54,* 42–50.

Ward, L. M., Seabrook, R., Lippman, J., Manago, A., & Reed, L. A. (2016). Contributions of diverse media to self-sexualization among undergraduate women and men. *Sex Roles, 74,* 12–23. https://doi.org/10.1007/s11199-015-0548-z.

Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationship Scale (ECR)-short form: Reliability, validity, and factor structure. *Journal of Personality Assessment, 88,* 187–204.

Weisskirch, R. S., & Delevi, R. (2011). "Sexting" and adult romantic attachment. *Computers in Human Behavior, 27,* 1697–1701.

Werner-Wilson, R. J. (1998). Gender differences in adolescent sexual attitudes: The influence of individual and family factors. *Adolescence, 33,* 519–531.

Wolak, J., Finkelhor, D., & Mitchell, K. J. (2012). How often are teens arrested for sexting? Data from a national sample of police cases. *Pediatrics, 129,* 4–12. https://doi.org/10.1542/peds.2011- 2242.