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Using A Holistic Lens Of Adolescent Sexuality To Understand The Onset Of Girls' Sexting

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USING A HOLISTIC LENS OF ADOLESCENT SEXUALITY TO UNDERSTAND THE ONSET OF GIRLS' SEXTING

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CHAPTER 1: INTRODUCTION

Adolescents frequently use texting as a tool to initiate and maintain peer relationships, including romantic and sexual relationships (Ito et al., 2009; Nesi et al., 2016). Sexting, defined here as consensually sending or receiving sexually explicit texts, photos, or videos (Temple & Choi, 2014), is now also a common practice among adolescents (Strohmaier et al., 2014; Temple et al., 2012). Although sexting has been receiving increasing media attention across the world, much of the public and scientific discourse about sexting has focused on deviance, associated risk behaviors, and legality, especially for girls (Angelides, 2013; Fleschler et al., 2013; Jewell & Brown, 2013; Korenis & Billick, 2014; Lippman & Campbell, 2014; Mitchell et al., 2012; Simpson, 2013; Van Ouytsel et al., 2015; Van Ouytsel, Walrave, & Van Gool, 2014; Wolak et al., 2012). In contrast, there is limited research on sexting that utilizes a holistic perspective, and relatively few longitudinal studies on the topic exist.

Given that electronic communication, including sexting, is prominent in adolescents' relationships, it seems important to embed our understanding of this new behavior within the broader context of romantic and sexual development. Towards this end, I propose a holistic view of adolescent sexting that incorporates the developmental tasks of adolescence, a sex positive perspective, and a feminist lens in order to examine the emergence of girls' sexting. The goal of this study is to examine the timing of sexting within the course of sexual development as well as relational predictors of sexting onset for females throughout adolescence. Further, potential risk factors for precocious sexting, including mental health problems and exposure to interpersonal violence, will be examined. I will also consider common motivations for sexting and the relationship between sexting motives and age of onset of sexting.

Technology and Adolescent Dating Relationships

Electronic and online forms of communication now play a central role in the social interactions of teens. The rate of cell phone use in teens is high — 89% of teens own a smart phone, the average teen sends 39 texts a day, and 83% of teens use social media (Rideout & Robb, 2019). The changing landscape of technology and the ability to have constant contact with peers is changing the way that youth initiate and maintain peer relationships, including dating.

Although only relatively few American teens meet their partners online (8%; Lenhart et al., 2015), technology is often used to initiate romantic relationships. For example, 47% of teens endorse that they have expressed romantic interest by interacting with a potential partner on social media (Lenhart et al., 2015). Technology is also a key method of interacting once a relationship has been established, with 92% of teens indicating they have texted a romantic partner (Lenhart et al., 2015). Talking on the phone and connecting on social media are also common methods of communicating (Lenhart et al., 2015). Electronic communication can be a way to enhance relationships. For example, 59% of teens endorse that social media makes them feel more connected to their significant other. However, social media posts and electronic communication can also fuel jealousy, and be a venue for electronic dating aggression (Lenhart et al., 2015; Reed et al., 2016). Further, technology is now often involved in break-ups. Despite being viewed as undesirable, text and social media break-ups are common: 31% of teens report being broken up with over text; 27% over a phone call; and 18% over social media (Lenhart et al., 2015).

Given the frequent use of technology in dating relationships, it is not surprising that electronic communication has also influenced the way teens are sexually intimate. A few studies have found that high levels of texting among high school students is related to more sexual

activity, higher level of sexual activity, and greater numbers of sexual partners compared to peers who text less (Frank et al., 2010; O'Sullivan, 2015). Teens also use technology to communicate about sexual health with a dating partner, for example: pregnancy risk, STIs, sexual limits, and birth control (Widman et al., 2014). Interestingly, among teens that use electronic communication to discuss condoms and birth control, rates of consistent condom use were three times higher than those who did not use technology to discuss these topics (Widman et al., 2014). Teens also use technology to express sexual desire and interest through sexting.

Definition and Prevalence of Sexting in Adolescence

Prevalence rates of sexting among adolescents vary widely in the literature, and are influenced by a number of factors. The rates of sexting differ depending on the sampling technique used (e.g., random versus convenience sample) and the demographic assessed (e.g., gender, age, race; Barrense-Dias et al., 2017; Klettke et al., 2014). The definition of sexting also varies in the literature, which contributes to differing prevalence rates. Some researchers include sending or receiving sexts in their definition, whereas others only include sending. Some studies use legalistic definitions of sexting such as the transfer of semi-nude or nude images, others include the transfer of sexually explicit texts or images. Teens who sext can face felony charges for child pornography (Miller, 2010), and potential penalties for child pornography possession include up to 20 years in prison, a $50,000 fine, and having to register as a sex offender (Wood, 2009). However, the legal definition of sexting and child pornography varies across jurisdictions. Further, many states are implementing legislative reforms to reduce the legal consequences of consensual adolescent sexting from a felony to a misdemeanor (Strohmaier et al., 2014). Few teens face these charges for consensual sexting, and many argue that teens should not face criminal prosecution for "engaging in predictably adolescent behavior" (Lewin, 2010; Wood,

2009). Further, even the stricter definition of sexting – sending nude or semi-nude photos – is up for interpretation. For example, it is unclear if pictures including undergarments, bathing suits, or provocative clothing meet this definition (Strassberg et al., 2013).

Although these legal consequences are important for framing the context of sexting in today's society, the current study is less concerned about the legality of sexting than its developmental significance. As such, this study adopts a broader definition of sexting that aligns with scholars' calls for a comprehensive and youth-defined operationalization of sexting behavior that has been promoted by adolescent researchers: consensually sending or receiving sexually explicit texts, photos, or videos (Döring, 2014; Krieger, 2017; Temple & Choi, 2014; Wolak et al., 2012). This definition is supported by results of focus groups in which middle and high school students were asked to define sexting (J. Smith-Darden & P. Kernsmith, personal communication, 2017). Both sending and receiving sexts are included in the definition, as the literature indicates that both types of participation are important. For example, sending sexts ensures that youth are active participants (Barrense-Dias et al., 2017), and is the more salient component linking sexting to sexual behavior over time (Temple & Choi, 2014). However, there is some evidence that a greater number of youth receive than send sexts (Strassberg et al., 2017). Additionally, this study only examined consensual sexting in order to examine how consensual sexting fits into the development of other consensual sexual behaviors. Non-consensual sexting, including behaviors such as coercion, sharing sexts without permission, and unsolicited sending of photos is a critical, yet distinct, area of research (Döring, 2014; Krieger, 2017).

According to a recent meta-analysis of studies using random or nationally representative samples, prevalence rates of teen sexting among 10–19 year olds in the United States are about the same when sexting is defined as *sending* sexually suggestive texts or photos (mean

prevalence of 10.2%) as when it is defined as sending completely or semi-nude images (mean prevalence of 11.96%; Klettke, et al., 2014). A slightly higher number of teens (mean prevalence 15.64%) indicated *receiving* sexually explicit texts or photos but only 11.95% indicated receiving sexually explicit photos (Klettke, et al., 2014). However, due to varying estimates of sexting across studies, these estimates resulted in large confidence intervals, likely reflecting demographic differences in rates of sexting amongst adolescents.

Rates of sexting increase with age, and prevalence rates that include a large age range may be misleading. For example, one study conducted with a national sample of 1,560 youth aged 10 to 17 years reported 2.5% of youth had appeared in nude or nearly nude photos. However, amongst the 10-12 year olds in the sample less than .6% had appeared in a nude or nearly nude image compared to 15% of the 15-17 year olds in the sample (Mitchell et al., 2012). A longitudinal study following 453 high school students found that the rates of sexting increased across grade level with 24% sexting in 9th grade, 37% in 10th grade, and 50% sexting by 11th grade (Steinberg et al., 2019). By young adulthood, prevalence rates reach 53.31% (Barrense-Dias et al., 2017; Drake et al., 2012; Klettke et al., 2014; Thomas, 2009). Age-related increases in sexting behavior highlight the need to understand how sexting is incorporated within adolescent romantic and sexual development. There is also some research examining the prevalence rates of sexting in adolescence by gender and race.

The majority of studies show no sex differences in the prevalence rates of sexting; however there are some contradictory findings (Klettke, et al., 2014). Some studies indicate that males are more likely to receive sexts with photo content than females, and males are more likely than females to forward sexts (Klettke, et al., 2014; Strassberg, et al., 2017; Strassberg et al., 2013). Other studies have found that females are more likely to send sexts than males (Mitchell et al.,

2012; Ybarra & Mitchell, 2014), although one study found the opposite (Rice et al., 2014). Of particular relevance to the current study is that girls and boys appear to experience sexting differently, a topic addressed in a later section (Klettke et al., 2014; Lippman & Campbell, 2014; Walker et al., 2013).

Some studies also have found racial and ethnic differences in the prevalence rates of sexting. Although the majority of sexting research has been conducted with samples of predominantly white middle-class students, a few studies with racially diverse samples have found that African American youth are more likely to send sexts than white or Latino youth (Campbell & Park, 2014; Drake et al., 2012; Rice et al., 2012). One study examined sexting among a sample of 1,034 African American and Hispanic 10th graders in a large urban school in Texas. In this sample, 21.2% of participants reported having sent a sexual text, photo, or video, and 31% reported receiving a sext (Fleschler et al., 2013). African American males and females engaged in sexting behavior at similar rates and were more likely to engage in some sexting behaviors than Latinos. However, additional research is needed to understand the specific contexts in which sexting occurs in African American youth. The current study will evaluate the sexual and romantic contexts of sexting in a primarily African American sample.

Sexual Risk versus Sex-Positive Perspectives on Sexual Behavior and Sexting

Adolescence is a time of identity exploration, increased autonomy, and tremendous physical, cognitive, and emotional growth. Within this timeframe, sexual and romantic development are key tasks that are embedded in the context of biological maturation, sociocultural influences, and relational contexts, such as those with parents and peers (Collins, 2003; Furman et al., 1999). Some view adolescent relationships as fleeting and insignificant. However, this is not always the case. Teens devote significant time, as much as five to eight hours a week, thinking about current

or potential romantic relationships, and partners become increasingly important sources of social support over the course of adolescence (Furman & Buhrmester, 1992; Furman & Shomaker, 2008; Meeus et al., 2007; Richards et al., 1998). The duration of teen relationships are longer than one might expect. Research has shown that 35% of 15 to 16 year olds have had relationships lasting at least 11 months (Carver et al., 2003; Wang et al., 2006). Typically, romantic and sexual development overlap, as sexual behaviors generally occur within romantic relationships (Furman & Shaffer, 2011; Manning et al., 2000).

Despite the normativity and importance of these relationships during this developmental period, adolescent engagement in these behaviors is a controversial topic in the United States. Adolescents' sexuality is typically depicted as dangerous and fraught with moral judgments. For example, fear-based messages are common regarding teenage sexuality and imply that any teen sex is risky sex. Additionally, school-based sexual education advocates frequently endorse fear-based messages in order to promote abstinence-only education (Bay-Cheng, 2003).

Thus, two perspectives on adolescent sexuality have emerged in the literature: the sexual risk perspective and the sex positive perspective. There are real risks related to certain sexual behaviors, including sexually transmitted infections and teenage pregnancy (Panchaud et al., 2000; Singh & Darroch, 2000). These concerns are the bedrock of the risk perspective and traditional research approaches to adolescent sexuality, which characterize teen sexual behavior as inherently risky and deviant. Consequently, this perspective focuses on the goal of risk reduction, largely through abstinence. Of relevance to this study is that this traditional line of research emphasizes negative consequences and overlooks the context of sexual behaviors and any potential positive aspects of teen sexuality.

The sex-positive view of adolescent sexuality recognizes the risks associated with certain sexual behaviors while also acknowledging their potential positive and developmentally appropriate features (Harden, 2014; Tolman & McClelland, 2011). For example, Golden and colleagues (2016) found that even behaviors typically considered "risky", such as early sexual debut (i.e., initiation of sexual intercourse prior to age 15), might be developmentally appropriate and have rewards. They used a sex positive perspective to evaluate both risks and rewards of sexual debut among a diverse sample of 174 adolescents longitudinally. Although early sexual debut was related to widely-studied risks such as increased internalizing and externalizing symptoms, substance use, and lower global self-worth, it also was related to rewards such as greater romantic appeal, greater dating satisfaction (for males), and higher sexual satisfaction (for males). Thus, a risk-assumptive approach can miss valuable information about the positive functions of a given behavior. Further, a risk assumptive view obfuscates the variability in adolescent sexual behavior and information about when and for whom a behavior is risky.

Research on sexting mirrors larger tensions in the field of adolescent sexuality between sexual risk and sex-positive views of adolescent sexual behavior. Sexting is distinctive from other behaviors because it does not necessitate proximity, and thus eliminates risk for pregnancy and sexually transmitted infections. However, sexting is also an intimate behavior that involves unique risks (e.g., nonconsensual distribution of photos, or legal consequences). To date, prior research has primarily treated sexting as a sexual risk behavior, with the majority of studies focusing on its potential negative consequences, including legal and mental health ramifications (Döring, 2014; Karaian, 2012; Van Ouytsel et al., 2015). For example, cross-sectional data link sexting with depressive symptoms, lower self-esteem, conduct problems, emotion dysregulation, and substance use (Kerstens & Stol, 2014; Ševčíková, 2016, Temple et al., 2012; Van Ouytsel et

al., 2015; Ybarra & Mitchell, 2014). In terms of romantic and sexual relationship problems, sexting has been associated with sexual risk behavior, early sexual debut, electronic dating aggression, and sexual coercion (Choi et al., 2016; Rice et al., 2014; Van Ouytsel et al., 2016).

Yet other studies have failed to find a relationship between sexting and psychosocial problems, implying that the risks are not uniform across adolescents (Ferguson, 2011; Gordon-Messer et al., 2013). For example, Temple and colleagues (2014) did not find a relationship between sexting and symptoms of depression or anxiety after controlling for other sexual behaviors in a sample of 937 ethnically diverse 14 to 18 year olds. Further, Gordon-Messer et al., (2013) found no relationship between sexting and symptoms of depression or low self-esteem in a sample of 3,447 young adults (18 - 24 year olds). Kosenko and colleagues' (2017) recent meta-analysis found only weak or moderate relations between sexting and risky sexual behaviors (e.g., unprotected sex, number of sexual partners).

Further, the potential risks of sexting may seem overstated relative to the overall frequency of sexting behaviors. For example, the unwanted dissemination of sexts is often cited as a risk of sexting; yet one study found that nearly 50% of adolescents reported sexting and only 3% of the those that had sexted endorsed this negative consequence (Thomas, 2009). The majority of youth who sext do not report experiencing negative consequences, with one study finding 8% of youth who endorsed sexting reported that it led to "humiliation/tarnished reputation", 5% reported getting in trouble with parents, 1% reported getting in trouble at school, and .6% reported being bullied as a result of sexting (Strohmaier et al., 2014). Further, there is evdience that many teens sext for healthy reasons within a romantic relationship. For example one study found that 51% of their sample sexted to enhance romance as part of an existing relationship (Mitchell et al., 2012). Only 2% who received sexts reported blackmail, coercion, or threats for reasons why they

received them, and only 1% reported receiving sexts because of bullying and harassment. Given that sexting is now common in adolescence and that there are inconsistent findings in the literature relating sexting to risk, it seems reasonable to postulate that sexting might not be a risky behavior for all teens.

A small, but growing, body of research has explored sexting without assumptions of risk (Döring, 2014; Campbell & Park, 2014; Hasinoff, 2012; Lippman & Campbell, 2014). Other researchers have identified functional opportunities associated with consenual sexting. In adult relationships, sexting has been related to relationship satisfaction (Drouin et al., 2017; Parker et al., 2013). For adolsecents, sexting may also serve to express affection, trust, desire, and pleasure (Döring, 2014; Ferguson, 2011; Simpson, 2013). For example, Ferguson (2011) found sexting was more common among women (aged 16-25) who experience sex to be highly pleasurable. Sexting might also be a tool for identity exploration or the assertion of sexual agency, two important developmental tasks in adolescence (Angelides, 2013; Karaian, 2012; Simpson, 2013). More research on contextual factors, such as age, gender, and relational context is needed to shed light on when and for whom sexting may actually be risky (Davis et al., 2016). Furthermore, additional research examining sexting as a developmental phenomenon without inherent risk assumptions is sorely needed in order to understand its function.

A Feminist Perspective on Adolescent Sexting

Examining the developmental trajectory and context of sexting and sexuality is especially relevant for female adolescents. Although the risk perspective of adolescent sexuality views all sexual behaviors in adolescence as deviant, this view of deviancy is more prominent for teenage girls. Female adolescents face unique barriers to sexual health in our society, which are also reflected in research, media coverage, and legal cases on sexting. Although most studies find no

gender differences in prevalence rates of sexting, there are reasons to suspect there are gender-specific features of its development and context. For example, girls are more likely to report pressure to sext from their partners and to experience more negative emotional experiences related to sexting than boys (Klettke et al., 2014; Temple et al., 2012; Walker et al., 2013). Girls are judged more harshly than boys for engaging in sexual behaviors, including sexting. One article, entitled "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," highlights this point (Lippman & Campbell, 2014). They found that girls, but not boys, were judged for their behavior, regardless of whether they engaged in sexting or not. Girls who sexted were called a variety of names by males including "insecure" and "attention-seeking sluts." Girls who abstained from sexting were also judged negatively and labeled "prude" or "stuck-up". This dynamic mirrors double standards girls face for engaging in other sexual behaviors (Kreager & Staff, 2009).

Gendered scripts and conventional ideas about femininity also undermine sexual health for female adolescents, and have been present in the literature on sexting (Impett et al., 2006; Tolman et al., 2003). Sexual scripts describe the cultural norms that serve as guidelines for acceptable and expected sexual behaviors and ways to negotiate sexual behavior (Simon & Gagnon, 1984). For example, the heterosexual script describes male and female roles in initiating relationships and sexual behaviors in heterosexual relationships (Kim et al., 2007; Seabrook et al., 2016). In these scripts, males are supposed to be interested in sex, take the initiative, and objectify women. In contrast, teenage girls are supposed to passively respond to male initiation and desire; and their desire and agency comes secondary to that of their partners (Tolman, 2012). In the sexting literature too, girls are often represented as responding to male initiation and as disempowered, lacking sexual agency, and as "victims" of sexting (Karaian, 2012). Karaian

(2012) argues that a main theme in the portrayal of sexting in the news and legal coverage surrounds the need to protect girls, especially the "white, thin, well-dressed, usually blonde or light and long-haired, feminine teenage girl". This points to the lack of discourse surrounding adolescent girls' agency and desire to sext, and the possibility that they can explore their sexuality through sexting. Such information about girls' motivations to sext is important for situating sexting within the course of female sexual development and acknowledging that girls might have desire to sext, instead of just responding exclusively to pressure from their partners. Furthermore, it highlights the differences in how African American and white females are portrayed in the media and how African American girls face different challenges in navigating sexual scripts and sexting (French, 2017).

These double standards and sexual scripts also disproportionally affect teenage girls when involved in the legal system for sexting. For example, in the 2010 U.S. Court of Appeals case *Miller V Mitchel*, pictures of two girls in their bras (waist up) and another girl in a towel were circulated around a school. The school district confiscated the cell phones and turned the photos over to the district attorney. The girls (but not the boys whose cell phones the picture were found on) were given the choice of attending a re-education program designed by the attorney with topics like "what it means to be a girl in today's society" or face felony child pornography charges (a possible 10 year prison sentence). The families, with the help of the Pennsylvania American Civil Liberties Union (ACLU), refused the conditions and fought back against the district attorney. In narrating the case, the defense attorney explained, "high school boys did as high school boys will do, and traded the photos among themselves". A blog from the ACLU states, "Ultimately, that's what this case comes down to: one man's view on how a young woman should conduct herself. The boys who traded the photos bear no responsibility and

require no re-education. Instead the girls are threated with felony charges and lifelong registration as sex offenders" (Keelty, 2010). These examples highlight the inequitable consequences concerning sexting for females, and the need for a more comprehensive investigation of sexting in adolescence.

Thus, a feminist perspective that acknowledges females' unique experiences with sexting and asks girls about their experiences and perspectives is needed to better understand sexting for female adolescents. Further, a feminist perspective recognizes that while females experience higher rates of coercion and negative experiences with sexting (as they do with other sexual behaviors), girls also possess legitimate desire and agency around sexting. The intersection of race and gender is also important to consider, as African American females face additional barriers to sexual health.

Gap in the Sexting Literature: A Holistic Lens of Female Sexual Development

A more holistic view of female adolescents' sexting seems imperative for understanding its place in development as well as for identifying the contexts in which it poses risk so that risk reduction efforts can be directed appropriately. I propose a holistic lens that incorporates: 1) the developmental tasks of adolescence, 2) a sex positive perspective that acknowledges both the risks and potential benefits of sexting, and 3) gendered aspects of sexting and sexuality. These factors are imperative to understanding the role of sexting in female adolescent sexual development (Harden, 2014; Tolman & McClelland, 2011).

Sexting within the Context of Sexual and Romantic Development

A first step to a holistic lens on this topic is to understand sexting in the broader context of sexual and romantic development. Engaging in sexual behaviors is common during adolescence and, for many, is developmentally appropriate. Over half of U.S. high-school students are

engaging in sexual intercourse by 12th grade, and over half of teenagers report being in a romantic relationship over the past 18 months (Carver et al., 2003; Ethier et al., 2018). For many youth, the emergence of sexual behavior typically proceeds in a linear fashion that moves from embracing and kissing, to fondling and touching genitals, and later to more intimate behaviors, including sexual intercourse (de Graaf et al., 2009). Although this is the most common trajectory, some differences have been noted between racial/ethnic groups, in which ethnic minority and less educated youth were more likely to follow a nonlinear trajectory (de Graaf et al., 2009; Smith & Udry, 1985). Furthermore, sexual development research differentiates between light (i.e., holding hands, kissing) and heavy (i.e., fondling, genital touching, sexual intercourse) sexual behaviors. There is some evidence that groups of adolescents engage in light activities without engaging in heavier behaviors (Williams et al., 2008). Further, light and heavy behaviors have been differentially associated with deleterious outcomes (e.g., drinking, physical aggression) in early adolescence, where heavier sexual behaviors, but not light behaviors, were related to these risky behaviors (Williams et al., 2008). It is currently unknown where sexting falls along this trajectory.

As the sexting literature is fairly new and risk-centered in its approach, there is much unknown about adolescents' sexting within the context of sexual and romantic development. Sexual and romantic development includes various elements related to the timing of sexual behaviors, sequencing of initiation of sexual behaviors, the intensity of sexual behaviors, relationship status, length of relationships, and the number of prior sexual and romantic partners. Only some of these elements have been examined in relation to sexting. In this study, these features will be examined from both a lifetime history and a relationship approach. A lifetime history approach examines sexting for the individual across different relationships. For example,

asking about age at first engagement in different types of sexual behaviors would be utilizing a lifetime history approach. For many girls the first person they kissed is different from the first person with whom they had sexual intercourse. Contrastingly, a relationship approach focuses on examining the details of sexting in one relationship at a time. Using this approach, the participant would be asked for her age at first engagement in sexting and other sexual behaviors with one specific partner. For this study, I will focus on the relationship in which sexting first emerges, and for those with multiple sexting partners, the subsequent sexting relationship as well.

Lifetime approach. The majority of sexting research thus far utilizes a lifetime approach. Even so, research on the sequencing and timing of sexting onset in relation to other sexual behaviors is sparse. In both cross-sectional and longitudinal studies, sexting has been associated with higher involvement in other sexual activities (Rice et al., 2014). For example, Rice et al. (2014) found that youth who sexted had over 7 times the odds of ever having engaged in sexual intercourse. Ybarra and Mitchell (2014) used a cross-sectional design and found that all of the sexual behaviors they examined (i.e., kissing, fondling, oral sex, sex with a finger or toy, vaginal sex, anal sex) were associated with elevated odds of having sent or shown sexual photos of oneself in the past year in a sample of 13 to 18 year olds. Another longitudinal study of 453 high school students examined the timing of sexting onset and patterns of co-emergence for sexting with other sexual behaviors during high school. The authors found that sexting co-emerged with genital contact behaviors regardless of individual differences in the timing or pace of emergent sexual behaviors (Steinberg et al., 2019). This information provides evidence that sexting can be classified as a "heavy" sexual behavior. However, because students were asked about the initiation of sexual behaviors by age in years, the authors were unable to discern the temporal order of sexual behaviors initiated within the same year. Another longitudinal study examining

high school students found that sending a nude photo was associated with 1.32 times increased odds of having sexual intercourse a year later (Temple & Choi, 2014). This temporal relationship between sexting and sexual behavior provides insight into the typical sequencing of these behaviors. However, the researchers did not control for previous sexual activity, so it seems plausible that being sexually active could also increase the odds of sexting. Thus, it is still unknown whether sexting typically tends to precede or follow genital contact behavior, and the timing of these behaviors, which is a central aim in the current study. If sexting typically is initiated before genital contact behaviors, it could be an important point of intervention.

Relationship Approach. A relationship approach will also be employed in order to examine sexting in the context of the romantic relationships in which it emerges. This is a unique perspective utilized to examine in which types of relationships girls are most likely to sext, as well as the sequencing and timing of sexting in relation to other sexual behaviors within these relationships. There is some research that indicates that sexting typically occurs within a serious relationship, and that sexts are more likely to be forwarded if exchanged in a hookup versus committed relationship. However, most research on sexting does not examine or inquire about the relationship context (Drouin et al., 2013; Lippman & Campbell, 2014).

The Context of Age: Examining Predictors of Sexting Onset

Sexual behavior is commonplace within consensual adolescent relationships, and is often normative and developmentally appropriate. However, there are times when engaging in these behaviors might indicate risk. Social Timetable Theory suggests that when individuals engage in a behavior outside of the normative developmental stage, either too early or too late, it may lead to less desirable outcomes (Furman & Collibee, 2014). Precocious involvement in romantic relationships, as well as sexual activity, is especially related to poorer trajectories (James et al.,

2012; Zimmer-Gembeck & Helfand, 2008). For example, the early onset of sexual intercourse (before age 15) is related to increased substance use, depressive symptoms, lower grades, more sexual risk taking, increased risk of unintended pregnancy, and increased likelihood of contracting STDs, whereas middle onset (before the age of 18) and late onset (after the age of 18) are not related to poor adjustment (Caminis et al., 2007; Capaldi et al., 2002; James et al., 2012; Zimmer-Gembeck & Helfand, 2008). Predictors related to the early onset of sexual intercourse include mental health problems, exposure to interpersonal violence (IPV), early puberty, not living with two biological parents, and less monitoring by parents (Anda et al., 2006; Davila et al., 2009; James et al., 2012; Lehrer, et al., 2006; Zimmer-Gembeck & Helfand, 2008). Thus, examining the onset of sexting in vulnerable groups can help to identify times when precocious sexting might indicate risk (Collins, 2003). However, there might also be normative relational factors that are also predictive of the onset of sexting, and it is important to examine these in order to keep a balanced and holistic perspective.

Despite temporal differences in sexting initiation, few studies have examined the timing of sexting onset. A study by Ševčíková (2016) suggests that sexting and emotional problems may be more tightly linked in earlier versus later adolescence. Specifically, sexting was associated with emotional problems for the whole sample. However, when the data were analyzed separately for younger (age 10-14) and older adolescents (age 15-16) and by gender, associations between sexting and emotional problems decreased for older girls compared to younger girls. Similarly, Ybarra and Mitchell (2014) found that risky sexual behaviors (e.g., less condom use) were associated with sexting for younger adolescents (ages 13-15) but not for older adolescents (age 16-18). Yet another study found that younger adolescents who sexted were less likely to use

condoms during sexual intercourse than younger adolescents who had not sexted; this association was not significant for older adolescents (Ybarra & Mitchell, 2014).

Given that most of the sexting literature is cross-sectional and there are few prospective studies on the topic, there is virtually no work examining potential antecedents to sexting. In the current study, none of the participants had initiated sexting prior to their first visit, thereby allowing me to look at antecedents to sexting. Success in understanding sexting, as well as preventing or reducing the potential negative consequences of sexting, depends to a large extent on identifying the behaviors that precede it. This study therefore examines both normative factors (i.e., romantic and sexual extensiveness) and risk factors (i.e., mental health problems and IPV exposure) that are related to the onset of sexting. It also examines potential covariates for early sexting: puberty and family demographic risk.

Romantic and Sexual Experience as Antecedents to Sexting Onset. Romantic and sexual experiences are often intertwined and predictive of each other (Collins, 2003). For example, having a boyfriend is predictive of girls' sexual activity (Scott-Jones & White, 1990), and the degree of involvement and commitment to a dating relationship is related to higher intensity of sexual activity and more frequent sexual intercourse (Collins, 1984; Neemann et al., 1995). Further, when youth are in a healthy relationship, they are more likely to feel comfortable with their sexuality, and are more likely to explore their sexuality, including experimenting with different types of sexual activities (Feeney & Noller, 2004; Kaestle & Halpern, 2007).

There is also some research that connects sexual and romantic involvement to sexting. For example, Temple and colleagues (2012) found a relationship between dating and sexting, as well as between number of sexual partners and sexting. Further, research suggests that sexting is more common in sexually experienced adolescents, and there is some indication that sexting is related

to hookup behaviors (i.e., unplanned, casual sexual encounters) in college students (Dir, et al., 2013; Kerstens & Stol, 2014; Ybarra &Mitchell, 2014). Thus, in this study I predict that more involvement in romantic and sexual relationships will be related to the onset of sexting. Although early romantic and sexual involvement can be related to risk trajectories, there is a progression of intensity of dating and sexual experience that is normative and healthy even in early adolescence, and might predict the onset of sexting (Williams et al., 2008). Thus, I will explore three indicators of normative romantic/sexual involvement as predictors of earlier onset of sexting: number of prior dating/sexual partners, length of prior relationships, and extent of sexual behaviors.

Mental Health Problems as Antecedents of Precocious Sexting. Youth with more mental health problems are at greater risk for early sexual involvement (Caminis et al., 2007; Davila et al., 2009; Lehrer et al., 2006). For example, research has found fairly consistent associations between externalizing behaviors (e.g., conduct problems, substance use, delinquency, impulsivity) and early and risky sexual behavior (Caminis et al., 2007; Meyer-Bahlburg et al., 2000). The problem behavior theory suggests that early initiation of sexual intercourse is one of many risky behaviors that constitute a "problem behavior syndrome," which can be influenced by underlying personality traits (e.g., risk taking propensity), along with other risk factors such as biology and social environment (Jessor & Jessor, 1977). Support for the relationship between internalizing problems (i.e., emotional problems such as anxiety and depression) and early initiation of sexual intercourse is mixed. Although there is some evidence that depression symptoms are related to earlier sexual debut and risky sexual behaviors (e.g., multiple sexual partners and lack of contraception use; Kaltiala-Heino et al., 2003; Kirby, 2002; Kosunen et al.,

2003; Whitbeck et al., 1999), there is some research that has also not found this relationship (Caminis et al., 2007; Donenberg et al., 2003; Donenberg et al., 2001).

There is also evidence that externalizing and internalizing symptoms are related to sexting. Adolescent sexting has been linked to externalizing problems, such as substance use and conduct problems (Dake et al., 2012; Frankel et al., 2018; Ševčíková, 2016; Temple et al., 2014; Van Ouytsel et al., 2015). Sexting has also been linked to traits such as impulsivity, sensation seeking, and experiential thinking styles, which might explain the underlying link between sexting and externalizing behaviors (Temple et al., 2014; Van Ouytsel et al., 2015). However, there is little longitudinal research on this topic. Therefore, this study will use prospective and longitudinal data to examine if externalizing symptoms is a risk factor for early sexting.

In regards to internalizing symptoms, cross-sectional work has linked sexting to depressive symptoms (Frankel et al. 2018; Temple et al., 2014) including contemplating or attempting suicide (Dake et al., 2012), emotion dysregulation (Houck et al., 2014), and low self-esteem (Ybarra & Mitchell, 2014). Many posit that sexting potentiates depressive symptoms due to pressure to sext or other negative consequences of sexting (e.g., cyber bullying, unwanted distribution). However, others suggest that youth with internalizing problems might be more vulnerable to early sexting (Ševčíková, 2016). Sexting may act as a distraction coping method for those with depressive symptoms, as prior research has shown that some depressed individuals tend to purposefully turn their attention towards more positive activities, such as sexual behaviors (Nolen-Hoeksema, 1987). Further, research links internalizing problems to low perceived self-efficacy, which in turn is associated with decreased assertiveness and minimal ability to negotiate contraceptive use with a partner (Donenberg et al., 2003). Lower

assertiveness and negotiation skills might also make it harder to refuse sexting. Therefore, I will also examine if internalizing symptoms are a risk factor for early sexting.

Interpersonal Violence Exposure as an Antecedent of Precocious Sexting. IPV includes both direct victimization (e.g., child maltreatment, physical assault, peer victimization) as well as witnessing domestic or community violence (Finkelhor et al., 2005). Considerable research links experiencing specific IPV experiences (e.g., sexual abuse) as well as the cumulative effect of IPV exposure to early sexual debut and sexual risk activities (Anda et al., 2006; Hillis et al., 2001). For example, Hillis et al., (2001) found a relationship between experiencing IPV and early onset of sexual intercourse in a retrospective cohort study with a sample of 5,060 females ages 25 and older. Results demonstrated that each type of IVP exposure (i.e., experiencing emotional, sexual, physical abuse; witnessing domestic violence or substance abuse; living with someone who is mentally ill or a criminal) was associated with an increased risk of sexual intercourse by age 15 (odds ratio 1.6-2.6) as well as risky sexual behavior including having more than 30 partners (odds ratio 1.6-3.8). Following the cumulative risk hypothesis (Sameroff et al., 2000), that it is the accumulation of risk versus one particular risk factor that increase the likelihood of adverse outcomes, this study will examine the effect of cumulative IPV exposure on early sexting.

Some have suggested that youth with histories of IPV exposure might engage in early and risky sexual behavior as an attempt, often misguided, to achieve intimate interpersonal connections (Hillis et al., 2001). Research has demonstrated that experiencing IPV may disrupt the ability to form long-term attachments in adulthood (Godbout et al., 2009). For example, animal studies show that early stressors can lead to long-term changes in oxytocin, a hormone that regulates pair boding and attachment (Francis et al., 2002). Thus, those who experience IPV

might also be more vulnerable to engage in precocious sexting due to the potential difficulties in interpersonal development. Sexting is more common among teens with IPV exposure such as having divorced parents, experiencing sexual abuse, and experiencing intimate partner violence (Jonsson et al., 2015; Titchen et al., 2018; Vanden Abeele et al., 2014). Our own work with a large high school sample offers preliminary evidence linking cumulative IPV exposure to precocious sexting (Victor et al., 2017).

Other Potential Antecedents to Sexting Onset: Puberty and Family Demographic Risk. The biological factor of puberty for adolescents, also play a significant role in sexual desire and the onset of sexual behaviors. Early pubertal status is related to early engagement in sexual intercourse as well as risky sexual behaviors, especially for girls (Halpern, 2003; Irwin et al., 1985; James et al., 2012). Pubertal timing has also been associated with the onset of sexting (Burén & Lunde, 2018; Houck et al., 2014; Ševčíková et al., 2013). As such, analyses will include pubertal status as a potential covariate in models predicting sexting.

Research also suggests that various other social and family factors, including income, single parenting, parent education, and living with a biological father, are related to the onset of sexual behavior. Socioeconomic disparities in sexual health risk have been well established, such that youth from lower socioeconomic backgrounds tend to experience greater sexual risk and earlier sexual debut than youth from more advantaged backgrounds (Harling et al., 2014; Singh et al., 2001). Research has shown that factors related to socioeconomic status, including low household income, low maternal education, and living in a single parent home, all contribute to sexual risk (Jordahl & Lohman, 2009; Moore & Chase-Lansdale, 2001; Penman-Aguilar et al., 2013; Price & Hyde, 2008). Living with two parents/caregivers, regardless of their relationship to the child, is related to later sexual debut than those living in single-parent households (Moore & Chase-

Lansdale, 2001; Price & Hyde, 2008). Further, living with a biological father, has also been consistently related to reduced risk for girls' pregnancy and early sexual debut (James et al., 2012; Langley, 2016; Ryan, 2015). Research on these factors related to sexting is less prevalent but some have found that those who come from lower SES backgrounds, are not living with both parents, and have less cohesive families are more likely to engage in online sexual risk behaviors, including sexting (Baumgartner et al., 2012; Burén & Lunde, 2018; Jonsson et al., 2015). Following previous work recommending that cumulative risk is more important than any one risk factor (Appleyard et al., 2005; Sameroff et al., 1993), we will assess a range of these characteristics (i.e., income, single parenting, parent education, and living with a biological father) to create a continuum of cumulative family demographic risk to include as a potential covariate for models predicting sexting.

Further Contextualizing Sexting: Understanding Motivations to Sext

Understanding girls' motives to engage in sexting is critical to further contextualize sexing and to help discern when sexting is risky or normative. Cooper and colleagues (1998) found 6 motivations for engaging in sexual behaviors and risky sexual behaviors in adolescents and young adults: enhancement (i.e., for physical or emotional pleasure), intimacy (i.e., enhance social connection), coping (i.e., to minimize negative emotion, relieve stress), self-affirmation (i.e., to bolster one's sense of self, or reassure themselves that they are attractive), to gain partner approval, and to gain peer approval. They also found that different motivations for engaging in sexual behaviors led to distinctive patterns of sexual behavior and risk. For example, enhancement motives predicted risky sexual behaviors as well as negative consequences from these behaviors. Contrastingly, intimacy motives predicted less risk taking. Within the sexting literature, three primary motives for teen sexting have been identified: pressure, sexual agency,

and body affirmation (Bianchi et al., 2016; Bianchi et al., 2017). The current study will assess if these motivations differentiate those who had sexted or not, and if certain motives are related to the early onset of sexting.

Across the sexting literature, pressure to sext appears to be a developing theme for females (Lippman & Campbell, 2014; Englander, 2012). Henderson and Morgan (2011) found that about 30% of their participants endorsed pressure from peers or romantic partners as motives for sexting. Englander (2012) found that girls were about twice as likely to report being pressured, coerced, blackmailed, or threatened into sexting than boys. Thus, exploring pressure motives in a sample of teenage girls is relevant. It is predicted that pressure will be a commonly endorsed motive for sexting amongst those who have sexted. Further, girls who sext at a younger age might be especially vulnerable to pressure (Steinberg & Monahan, 2007). Thus, I hypothesize that girls who sext early will be significantly more likely to endorse pressure reasons for sexting than those who sext later.

Further, there is evidence that girls are sexting not only because of pressure, but also because they want to, an expression of their sexual agency. Third wave feminists broadly, as well as specifically in the sexting literature, advocate for acknowledging girls' agency in their sexual behavior (Karaian & Mitchell, 2009; Karaian, 2012). In this study, sexting agency is defined in terms of motives that relate to sexual curiosity or ways for girls to fulfill their own sexual needs and desires, an operationalization that conforms to research on other adolescent sexual behavior (O'Sullivan et al., 2006). There is also some research to support that girls who view their sexuality positively engage in less sexual risk taking behavior with casual partners (Seal et al., 1997). One study using a sample of 485 undergraduates examined beliefs about why people sext. They found that the motive "to be sexy or initiate sexual activity" was the most commonly

endorsed reason why study participants thought girls sexted and was endorsed by 85% of the sample. The motive "to be fun or flirtatious" was endorsed by 65% of the sample (Henderson & Morgan, 2011). Similarly, Martinez-Prather and Vandiver (2014) found that 51% of their sample endorsed the motive to be "flirtatious" as why they sexted. These data support the prevalence of a sexual agency motive for sexting. This study hypothesizes that this motive will be the most commonly endorsed reason for sexting, and will differentiate those who had sexted and those who have not sexted. Further, research indicates higher sexual agency motives for older as opposed to younger adolescents (Bianchi et al., 2017; Bianchi et al., 2019). Therefore, it is predicted that of those who have sexted, older girls, as opposed to younger girls, will be significantly more likely to endorse sexual agency motives.

Lastly, there is mounting evidence that suggests teens also sext for body affirmation reasons (i.e., to receive positive feedback about their bodies). Accepting and redefining one's body image is another important developmental task in adolescence (Erikson, 1970). In today's society many teens use feedback from peers on social media to inform and explore their body image (Schmitt et al., 2008), and sexting may also be used in this way. Prior research shows that the body reinforcement motive to sext is higher in older than younger adolescents (Bianchi et al., 2019). Therefore, in this study it is predicted that of those who have sexted, older girls, as opposed to younger girls, will be significantly more likely to endorse the body affirmation motive to sext.

Current Study: Goals, Aims, and Hypotheses

The goal of the current study is to better understand the context and emergence of sexting for females across adolescence using a holistic perspective. The first aim of the study utilizes a normative developmental lens to understand how sexting is incorporated within romantic and

sexual development. Aim 2 employs a sex positive perspective to understand how both normative features of romantic and sexual experiences, as well as risk factors associated with other aspects of precocious sexual behavior, figure into the onset of sexting (which is commonplace by mid to late adolescence). This is an important task, as the early emergence of sexting may signal precocious and unhealthy sexual activity. However, extant research has focused on sexual risks related to sexting without a clear understanding of its timing and function in the broader context of adolescent relationships. The focus on girls is in keeping with evidence that females experience sexting differently than males (Klettke et al., 2014). Further, from a feminist lens, it is important to recognize that while females face more barriers to sexual health in our society, a fact which is also reflected in the literature on sexting, girls may also possess legitimate desire and agency around sexting (Lippman & Campbell, 2014; Karaian, 2012). Thus, aim 3 examines girls' motivations for sexting to understand both their desires and potential negative experiences with sexting. The potential contribution of this work, given its prospective longitudinal design, is to offer a means to examine developmental changes overtime. Specific aims and hypotheses are as follows:

Aim 1. Characterize the sequencing and timing of sexting within the context of romantic and sexual development by describing different aspects of sexting involvement among adolescent girls including age at first sext, sequencing of sexting initiation compared to other sexual behaviors, and time between the initiation of sexting and the initiation of other sexual behaviors. Within this aim I will examine the initiation of sexting behavior from both a lifetime history approach (i.e., examining the individual across time and relationships), as well as from a relationship approach (i.e., examining sexting within the relationships that it emerges).

Hypothesis 1a. Using a lifetime history approach, sexting will mirror the heavier sexual behaviors in terms of age of onset and percent sexted, and first sexting will occur closest in time to the initiation of heavier sexual behaviors. In terms of sequencing, first sexting will emerge prior to engagement in first sexual intercourse but after engagement in other genital contact behaviors.

Hypothesis 1b. Using a relationship approach, sexting will occur most frequently within an exclusive relationship. With each sexting partner, the timing of sexting will occur closest to heavy sexual behaviors, and sexting will occur most frequently after engagement in heavy sexual behaviors but before engagement in sexual intercourse. Further, the sequencing and timing of sexual behaviors will look similar across partners.

Aim 2. Examine both normative experiences (extensiveness of sexual and romantic behaviors) and risk factors (IPV exposure, mental health problems) that might be associated with the emergence of sexting.

Hypothesis 2a. More extensive sexual and romantic involvement will be associated with younger age of first sexting. The extent of sexual and romantic involvement will be conceptualized in three ways: 1) intensity of sexual involvement (ranging from involvement in no sexual behaviors, only engagement in light sexual behaviors, and engagement in both light and heavy behaviors), 2) number of prior sexual and romantic partners, and 3) total length of prior relationships.

Hypothesis 2b. Greater lifetime exposure to IPV and mental health problems (internalizing and externalizing symptoms) will each predict younger age of first sexting.

Aim 3. Identify motivations (pressure to sext, agency to sext, body affirmation) that are associated with having sexted, and the age of onset of sexting.

Hypothesis 3a. Sexual agency, body affirmations, and pressure motivations will be related to having ever sexted.

Hypothesis 3b. Girls who sext early will be more likely to endorse the pressure motivation; girls who sext later will be more likely to endorse the sexual agency and body affirmation motives.

CHAPTER 2: METHODS

Participants

The sample for this research draws from an NIH-funded study of early adolescent romantic and sexual development. The original project included 93 girls and their primary caregivers (91% biological mothers). They were first seen in early adolescence (T1; ages 10-15) and followed over a 27-month period that includes three additional lab-based assessments (T2/T3/T4; T4 ages 13-19). The fourth time point of this study was collected for this dissertation to assess participants when they were in high school, where base rates of sexting are higher. Data from all four time-points of the project were examined in these analyses. Questions regarding sexting were added to the study halfway through the second time-point. Thus, for the current study participants were excluded who were never asked about sexting ($n = 14$). The final sample therefore consisted of 79 female adolescents ($M_{age\ at\ T1} = 12.55$, SD = 1.11) and their primary caregivers. These participants did not differ demographically from those excluded according to bivariate tests of associations. By the final time-point 78% of participants were retained in the research (N = 70).

Demographic characteristics of the sample reflect those of the urban community from which the sample was recruited. The sample was predominantly (73%) African American. Median annual household income for the sample was $30,000, ranging from $1,200 to $155,000. Caregiver education included 19% with up to a high school degree, 46.8% with more than high school degree (e.g., some college, associates degree), and 34.2% with a Bachelor's degree or more. About half of the primary caregivers were single (49.4%), meaning that they were not married or living with a partner. Only 32.9% of participants were living with their biological dad at the first visit. At their last visit, 78.5% of participants identified as heterosexual.

Procedure

The institutional review board at Wayne State University approved all measures used in the study. Participants were recruited through the distribution of study flyers in community organizations, charter schools, and on bulletin boards throughout Detroit, Michigan. Caregivers who contacted the research lab were first screened for eligibility. Inclusion criteria for the initial time point included nulliparous females between the ages of 11-15, in grades 6, 7, 8 and 9, with a primary caregiver who was a legal guardian. Exclusion criteria included not yet being in 6th grade, pregnant or primiparous at the time of enrollment, and developmentally disabled. Eligible caregivers received a $10 gift card for spending 15 minutes to learn about the study. Lab visits were 3.5 hours each and transportation assistance was provided as needed. Upon arrival, written consent and assent was obtained from caregivers and youth. Caregivers and youth were interviewed separately to complete face-to-face interviews and structured questionnaires. For participation, caregivers received $50, $60, and $70 cash and youth received a $50, $60, $70 gift card at the baseline, 9 month, and 18 month assessments. At the fourth time point, caregivers received $20 for completing an online survey and youth received $50 for a shorter lab visit. The full study also included two follow-up phone calls between sessions. In total, youth and caregivers could be compensated up to $520 for participation in all phases of the study.

Measures

Demographics

Caregivers provided demographic information about youth's age, grade, and race. Participants indicated their sexual orientation (heterosexual, lesbian, gay, bisexual, queer, questioning, pansexual, asexual, or other).

Sexual and Romantic Involvement

Number of Romantic and Sexual Partners. Youth were asked at each time point about the number of romantic and sexual partner's that they had since the last time point using the relationship life history calendar (Bay-Cheng, 2017). Partners were defined as anyone youth had a dating or sexual experience with. Given the distribution of number of partners, participants were categorized as having no partners, 1 partner, or multiple partners at each time point.

Length of Romantic and Sexual Relationships. At each time point, youth were asked for the length of each romantic and sexual relationship using the relationship life history calendar. A composite score for total length of relationships was created by adding up length (in weeks) of all relationships for each time point.

Extensiveness of Sexual Behaviors. The relationship life history calendar was also used at each time point youth were asked about the specific sexual behaviors they engaged in with each romantic or sexual partner. Behaviors included mutually engaging in holding hands, kissing, making out, heavy touching (i.e., being touched or touching a partner above the waist underneath or above clothes), receiving or giving manual stimulation (i.e., being felt or feeling a partner below the waist, underneath or above clothing), receiving or giving oral sex, sexual intercourse, and sending or receiving a sext (i.e., sexual texts, photos, or videos). Of note, all behaviors were only endorsed if they were consensually engaged in, and participants were able to define what engaging in sexual intercourse meant to them, and it was not limited to just vaginal intercourse. Additionally, youth reported the age they were when each behavior occurred and the sequencing of each behavior within and across partners. A dichotomous variable (0 = no; 1 = yes) indicating lifetime incidence for each behavior, including sexting, was constructed at each time point. For data reduction and theoretical reasons, the sexual behaviors were also grouped into three

categories by intensity: no behaviors, light behaviors only (i.e., holding hands, kissing, making out, cuddling), and heavy behavior (i.e., heavy touching, manual stimulation, oral sex, and sexual intercourse).

Motivations to Sext

All youth were asked to indicate their motivations for sexting at T4. Youth who had never sexted were instructed to "mark the statement that would best describe you". An 11-item questionnaire adapted from the National Campaign to Prevent Teen and Unplanned Pregnancy & CosmoGirl.com (2008) and the Sex Motives Measure (SMM; Cooper, Shapiro, & Powers, 1998) was utilized to examine sexting motivations. Each item was rated on a 5-point Likert scale. Three motivations for sexting were measured: sexual agency motivations (four items; e.g., "sexual satisfaction"), body affirmation motivations (3 items; e.g., "to get positive feedback"), and pressure motivations (4 items; e.g., "pressure from a guy/girl who wanted you to sext them"). Composite scores for each motivation were calculated by averaging the items that made up the scale. Cronbach's alpha for each subscale was .70, .85, and .68 respectively.

Interpersonal Violence Exposure (IPV)

Lifetime incidence of exposure to interpersonal violence (direct and indirect) was assessed at each time point using select items from the Adverse Childhood Experiences (ACE) scale (Felitti et al., 1998), the UCLA PTSD Index for DSM IV (Steinberg et al., 2004), the Conflict in Adolescent Dating Relationship Inventory (CADRI; Wolfe et al., 2001), and an adapted version of the Multidimensional Peer Victimization Scale (Mynard & Joseph, 2000) that also included items adapted from the American Association of University Women (AAUW) Survey of Sexual Harassment in America's Schools (AAUW, 2001). Cumulative interpersonal violence exposure is calculated by summing lifetime exposure (yes = 1, no = 0) to 13 events and included items

tapping child maltreatment, family violence, community violence, dating aggression, and peer victimization.

The ACE scale is an 18-item scale widely used to assess traumatic exposure in youth. Items include experiences such as childhood sexual abuse, physical abuse, emotional and physical neglect, household member incarceration, household substance use, and domestic violence. Items are scored along ten dimensions, and values therefore range from 0 to 10. Test-restest reliability of the ACEs measure is shown to have good reliability in adults (kappa for full cumulative ACE score = .64; Dupe et al., 2004). As the ACEs questionnaire omits certain childhood adversities that also have lasting impacts on well-being (Finkelhor et al., 2013), items from the traumatic events section of the UCLA PTSD Index, the CADRI, and the peer victimization questionnaire were also administered.

The UCLA asks about 12 potentially traumatic experiences, that includes additional traumatic events such as witnessing community violence, experiencing community violence, and the violent death of a loved one. Items that assessed overlapping constructs (e.g., both scales asked about physical abuse) were only asked once. The UCLA PTSD measure also has good psychometric properties including substantiated validity, internal consistency (Chronbach's alpha in the .90), and test-retest reliability (reliability coefficient = .84).

The CADRI assesses abusive behavior within adolescent dating relationships. In the current study, a yes/no composite for dating aggression was created. If youth indicated any items that tapped abusive behavior in dating relationships, including physical aggression, threatening behavior, relational aggression, and verbal/emotional aggression, they were marked as having experienced dating aggression.

Similarly, a yes/no composite was created to indicate if the youth experienced peer victimization using a 5-item questionnaire that assesses both in person and electronic peer aggression.

Mental Health Symptoms

Information about youth's mental health was collected from the youth and caregiver at each time point. The caregiver reported on the youth's externalizing symptoms. Youth report on their internalizing symptoms, given that adolescents are often more accurate reporters of internalizing symptoms.

Externalizing Symptoms. Caregivers rated their child's behavior over the past six months using the Externalizing Scale from the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001). The Externalizing Scale includes 5 questions from the Conduct Problems subscale (e.g., "often fights with other youth or bullies them") and 5 questions from the Hyperactivity-Inattention subscale (e.g., "easily distracted, concentration wonders"). Caregivers rated their daughter's behavior on a scale from 0 to 2, indicating the behavior is "not true", "somewhat true", or "certainly true" of their daughter. The possible range of scores for externalizing symptoms is 0 to 20. The SDQ is highly correlated with other childhood psychopathology measures including the Achenbach scales (Achenbach, 1991), and has been shown to be effective in discriminating between children with and without psychological problems (Goodman, 2001; Goodman et al., 2000). The SDQ also demonstrates satisfactory internal reliability (mean Chronbach's alpha = .73), and retest stability after 4 - 6 months (mean Chronbach's alpha = .62; Goodman, 2001). Internal consistencies for externalizing problems were acceptable at all time points (T1 α = .66; T2 α = .67; T3 α = .64).

Internalizing Symptoms. Youth completed an abbreviated version of the Children's Depressive Inventory 2 (CDI-2; Kovacs, 2011) and an abbreviated version of the trait anxiety scale from the State-Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973). The composite scores form the CDI and STAIC were converted to a Percent of Maximum Possible (POMP) score in order to have them on a common scale (Fischer & Milfront, 2010). The two POMP scores were then averaged to capture total internalizing symptoms.

The abbreviated version of the CDI-2 contains 12-items tapping depressive symptoms such as mood disturbances, interpersonal behaviors, and anhedonia. For each item, youth choose from one of three sentences that best describe how they have been feeling over the past two weeks (e.g., "I am sad once in a while. I am sad many times. I am sad all the time"). Each item is then entered as 0, 1, or 2, with higher scores indicating more depressive symptoms. Composite scores are calculated by summing all the items. Possible raw scores range from 0 to 24, and then the raw score is converted to a T score based on the participants age. The short form has excellent psychometric properties, with comparable reliability (Chronbach's alphas range from .67 to .91), sensitivity, and specificity of as the full-length version (Kovacs, 2011). Internal consistency was acceptable for CDI scores at all time points (T1 α = .82; T2 α = .77; T3 α = .79).

The abbreviated version of trait anxiety scale from the STAIC contains 5 items that measures relatively stable individual differences in anxiety proneness. Participants are asked to respond to items (e.g., "I worry about making mistakes") by indicating how they generally feel on a scale from 1 (hardly ever), 2 (sometimes), or 3 (often). Item scores are then summed to create a composite score ranging from 5 to 15. Internal consistency was acceptable for TAI scores at all time points (T1 α = .73; T2 α = .74; T3 α = .73). The STAIC does well in discriminating youth with an anxiety disorders and without a disorder, as well as discriminating between youth with

anxiety and youth with externalizing disorders, and is comparable to other measures of anxiety in children (Seligman et al., 2004).

Age of Menarche

Girls indicated if they had started to menstruate and how old they were when their period started. All girls in the study had begun menstruating by T4.

Cumulative Family Demographic Risk

A continuum of cumulative family demographic risk was created based on caregiver report on parental education, household income, caregiver's cohabiting partner status, and if applicable, the cohabiting partner's relationship to the study participant at the first time point. The four indicators of family risk were summed to produce a cumulative family risk index, ranging from 0 to 4, with higher numbers indicating greater risk: parent education (0 = more than a high school degree vs. 1 = a high school degree or less; 19% of sample), household income (0 = above $26,095, the median Detroit city household income vs. 1 = below $26,095, the median Detroit city household income; 45.6% of sample), caregiver's partner status (0 = two-parent household vs. 1 = single-parent household; 49.4% of sample), and presence of a biological father in the home (0 = biological father living in the home vs. 1 = biological father not living in the home; 67.1% of sample).

CHAPTER 3: RESULTS

Data Screening

Prior to analyses, the data were thoroughly screened. Specifically, data points were examined to ensure they were in the expected ranges and that all means, variances, and standard deviations were reasonable. One outlier was identified on the externalizing scale at T2. Similarly, 3 outliers were identified on the pressure to sext motive scale and 2 outliers on the body affirmation motive to sext scale. These outlier were winsorized as recommended by Tabachnick and Fidell (2013). Normality was evaluated for each variable through visual inspection and significance tests. All tests were found to be within normal limits.

Missing Data

Relatively few data were missing (ranging from 0 to 5.3 percent across all study variables). Missing data was imputed using Expectation Maximization in IBM SPSS 26. This method of imputation is comparable in accuracy to other methods for imputing data missing at random (Lin, 2010; Mu & Zhou, 2011). Prior to imputation, Missing Value Analyses were run. All Little's MCAR tests were nonsignificant, indicating that data was missing at random. On the CDI, one participant was missing a response for one item. This item was imputed from the other items in the questionnaire. Additionally, we did not start differentiating kissing and making out until T2. Thus, 10 data points were missing for make out at T1, and 2 data points were missing for make out at T2. These items were imputed from engagement in other sexual behaviors. Two lifetime sequencing variables were missing and these items were imputed from age of first sext and age of menarche. One relationship status variable was missing, which was imputed from the sequencing of sexual behaviors within partner. Two sequencing variables for the first sexting partner were imputed from relationship status; one sequencing variables for the second sexting

partner were imputed from relationship status. Additionally, for second sexting partners, two data points were missing for number of weeks into the relationship sexting occurred, and were imputed from the number of weeks into the relationship that other sexual behavior occurred.

Aim 1. Characterize the Sequencing and Timing of Sexting within the Context of Romantic and Sexual Development

Lifetime History Approach

Lifetime Incident Rates and Age of Initiation of Sexting and Other Sexual Behaviors by T4. Of the 79 participants that were asked about sexting, 22 participants endorsed consensual sexting (28%) over the course of the study, a similar percentage to those who had engaged in genital contact behaviors (i.e., manual or oral stimulation, sexual intercourse; see Table 1 and Figure 1). The average age of sexting among those who had sexted by T4 was 15.57 years old, which was similar to the onset of genital contact behaviors (See Table 1 and Figure 2). In terms of early onset of sexting (before age 15), 36.4% of participants who reported sexting had sexted before age 15, 45.4% sexted between the ages of 15 and 16.9, 18.2% sexted at age 17 or after.

Latency between Sexting Initiation and Initiation of Other Sexual Behaviors. Next, for participants who had endorsed sexting (n = 22), the time between first sext and first kiss, and first sext and first of each heavy sexual behaviors, was calculated. First, the absolute value between the first time they engaged in each sexual behavior and first sext was examined. Then the average latency to each behavior was examined separately depending on the sequencing of the behaviors. For example, I examined the average latency between first kiss and first sexting for participants who kissed before sexting, and then separately for those who sexted before kissing (See Table 2). First kiss was used as the marker for light behavior because the average age for kissing (13.7) falls in the middle of the average age of the other light behaviors (min age

was for handholding = 12.95, max age was for make out = 14.58). Overall, first sext occurred closest in time to first genital contact behaviors. Further a pattern emerged such that when sext occurred before each behavior, as opposed to after, there was shorter onset to that behavior (see Table 3). Related to sequencing, a pattern emerged such that up until oral sex, a larger number of participants engaged in the given sexual behavior before sexting. For oral sex and sexual intercourse, however, most girls sexted prior to engaging in these activities.

Sequencing of Sexting within Sexual Behavior Initiation. Next, for those who had sexted (n = 22), the sequencing of the initiation of sexting within the initiation of other sexual behaviors was examined. First, the chi square goodness of fit test was employed to examine if girls were significantly more likely to engage in sexting for the first time before or after their first time engaging in light behaviors and heavy behaviors. Girls were significantly more likely to sext after, as opposed to before, engaging in at least one light behavior, χ^2 = 14.73, p = <.001. There was not a statistically significant difference in those who initiated sexting before or after having initiated heavy sexual behaviors, χ^2 = 1.64, p = .201. However, from a frequency perspective, which is informative given the small sample, most girls (63.6%) sexted for the first time after having engaged in at least one heavy sexual behavior for the first time (see Table 3). Of the 22 who had sexted, sexting was rarely the first sexual behavior that participants engaged in (9.1%) and 27.3% of participants engaged in at least one light behavior before engaging in sexting for the first time.

In order to further elucidate the sequencing of the initiation of sexting, heavy behaviors were broken down into separate behaviors (i.e., heavy touching, manual stimulation, oral sex, and sexual intercourse) for the 22 participants who had sexted. The percentage of students that engaged in sexting for the first time after having engaged in each of these behaviors is shown in

Table 3. Overall, there is a lot of variability where the initiation of sexting falls within the initiation of heavy sexual behaviors. However, girls were significantly more likely to sext before, as opposed to after, sexual intercourse, $\chi^2 = 14.72$, $p = <.001$.

Relationship between Sexting and Other Sexual Behaviors by T4. There was a significant association between engaging in sexting and engaging in all types of light and heavy sexual behaviors by T4 (see Table 4). When looking at light behaviors, 95% (21/22) of participants who had sexted by T4 had also engaged in light behaviors by T4, but only 36.2% (21/58) of those who had engaged in light behaviors by T4 had also sexted by T4. Ninety-one percent (20/22) of participants that had sexted had also engaged in heavy behaviors, but only 50% (20/40) of those who had engaged in heavy behavior had also sexted. As the behaviors get more intense (i.e., go from light to heavy), there is more overlap between behaviors. For example, only 36.8% of people who held hands had also sexted, but 50% of those who had sex had also sexted.

Relationship Approach

Up until this point, the analyses have used a lifetime history approach, meaning various behaviors for the individual was examined across different relationships. In these next analyses, sexting was examined from a relationship approach. Specifically, sexting was examined within the relationship where sexting was first initiated, and if sexting occurred in more than one relationship, in the subsequent relationship. Due to the limited number of participants who reported more than two sexting partners, these variables were examined in the first and second sexting partners. Of those who had sexted (n = 22), the median number of sexting partners was 2 (min = 1, max = 5).

Relationship Status. First, the chi square goodness of fit test was used to examine if sexting was more likely to occur in an exclusive or non-exclusive relationship (i.e., casual dating or hookup relationships). Overall, for first and second sexting partners, there was not a statistical difference between those who sexted within an exclusive relationship and within a non-exclusive relationship (see Table 5). However, from a frequency perspective, which is informative given the small sample, more than half of the girls reported sexting in an exclusive relationship for both first (59%) and second sexting partners (67%).

Sequencing the Initiation of Sexting within other Sexual Behaviors for each Sexting Partner. Next, the sequencing of the initiation of sexting compared to other sexual behaviors was examined within the first two relationships that sexting was initiated. As a reminder, previously sequencing of sexting within sexual behaviors was examined across partners for an individual. These next analyses are different, as they examine sequencing of sexual behaviors with just one partner at a time. Results from the chi square goodness of fit test indicated that, for the first sexting partner, first sext with that partner was more likely to occur after, rather than before, first engagement in light behavior with that partner, $\chi^2 = 4.55$, $p = .033$. For second sexting partners, however, first sext with that partner was just as likely to occur before first light behavior with that partner as it was after, $\chi^2 = 0.33$, $p = .564$. For both first and second sexting partners, first sext within each relationship was just as likely to occur before first heavy behavior within each relationship as it was after, $\chi^2 = .73$, $p = .39$; $\chi^2 = .33$, $p = .564$. In terms of frequencies, for first (54.6%) and second (58.4%) sexting partners, just over half engaged in sexting with each respective partner before engaging in heavy behavior with each partner. See Table 6 for the percentage that engaged in each type of behavior before sexting.

In order to further elucidate the sequencing of the initiation of sexting for each partner, heavy behaviors were broken down into separate behaviors (i.e., heavy touching, manual stimulation, oral sex, and sexual intercourse). For first and second sexting partners, sexting was significantly, or marginally significantly, more likely to occur before, as opposed to after, sexual intercourse with each perspective partner, $\chi^2 = 18.18$, $p < .001$; $\chi^2 = 3.00$, $p = .08$.

Weeks into the Relationship of First Sexting and First Other Sexual Behaviors for each Sexting Partner. Next, of those who sexted, the number of weeks into each relationship that sexting occurred compared to the first occurrence of other sexual behaviors was calculated (see Table 7 and Figure 4). From a statistical standpoint, number of weeks to sexting was not significantly different for partner 1 than partner 2, $t = .99$, $p = .331$. Although there was not a statistically significant difference, figure 4 illustrates a pattern of shorter latency to most behaviors, inclusive of sexting, for second sexting partners as compared to first sexting partners. Of note, there was wide variability with regard to the timing of all behaviors, and there was small sample size for the second sexting partner for many behaviors.

Aim 2. Examine both Normative and Risk Factors that Might be Associated with the Early Emergence of Sexting

The second primary aim of this study was to assess whether involvement in sexual and romantic relationships was associated with the emergence of sexting, as well as to examine if certain risk factors were associated with earlier sexting. To do this analysis, separate cox proportional hazard regression models with time-dependent covariates were conducted to assess the probability of sexting over time from prior sexual and romantic involvement (i.e., extensiveness of sexual behaviors, number of sexual and romantic partners, length of romantic

relationships) and prior IPV exposure and mental health symptoms at each time point before sexting occurred.

Figure 5 shows the baseline survival function for age of initiation of sexting. The likelihood of sexting is greatest from 16 to 18, as the curve is steepest during this age range. The median age of first sexting was 17.9 based on the Kaplan-Meier estimator. Table 8 depicts the estimated age-specific risk for sexting onset.

Survival models for potential covariates including family risk and age of menarche were not significant, $B = -.14$, $p = .35$; $B = .25$, $p = .22$. Given that the covariates were not significant and that there was limited power to detect significant effects due to the small number of those who had sexted, six separate survival analyses were run with one variable each. The first three included the romantic and sexual extensiveness variables. The last three consisted of the risk variables. Table 3 displays the hazard ratios, confidence intervals, and p-values for each of the hypothesized variables entered into separate time dependent Cox proportional hazard regression models.

When looking across sexual and romantic behaviors variables, one of three hypothesized predictors was marginally significant. Those with 2 or more sexual partners had 2.96 (95% CI: 0.93 to 9.37) times the hazard of sexting than those with no partners. Figure 6 illustrates the survival curves for age of sexting onset at no partners, 1 partner, and 2+ partners. Those with greater number of partners had lower survival curves, indicating an earlier age of sexting. Further, there was no violation of the proportional hazard assumption, indicating that there was no evidence that the effect of number of partners changed overtime, $p = .94$.

Of the three hypothesized risk predictors, IPV exposure was the only one that was marginally significant. Figure 7 illustrates the survival curves for age of sexting onset at one quartile below

the median, the median, and one quartile above the median of adolescent's IPV exposure. Those with greater number of IPV exposures had lower survival curves, indicating an earlier age of sexting. Specifically adolescents with a score of 5 (third quartile) compared to a score of 1 (first quartile) on the IPV composite had 19% (HR: 1.19; 95% CI: 0.99 to 1.42) higher hazard of sexting. Further, there was no violation of the proportional hazard assumption, indicating that there was no evidence that the effect of IPV changed over time, $p = .67$. Additionally, there was some suggestion that self-report of internalizing symptoms may be worthy of future inquiry in a larger sample. This result was in the right direction but had a wide confidence interval and was not statistically significant, $p = 12$.

Aim 3. Identify Motivations Associated with Sexting and Age of Onset of Sexting

The third study aim was to examine motivations related to sexting and the timing of sexting. Motivations were only asked at the fourth time point (N = 70), and 19 participants who had reported sexting were asked the motivation questions. Girls who had sexted were asked about reasons they had sexted, and girls who had not yet sexted were asked to indicate reasons why they would sext. Overall, girls reported relatively low ratings for all motives, especially for the pressure motive (See Table 10). Results of paired t-tests for the overall sample at T4 indicate that girls were significantly more likely to report sexual agency than body affirmation or pressure motives for sexting (see Table 11).

Next, independent t-tests were conducted to compare the extent that motivations were endorsed for those who had sexted versus those who had not sexted, using the T4 data. Participants who had sexted were significantly more likely to endorse sexual agency and body affirmation motivations to sext than those who had not sexted (see Table 12). There were no

significant differences between those who had sexted versus those who had not sexted in terms of pressure as a motivation to sext.

Next, independent t-tests were run to compare motives for those who had sexted early versus not at T4 (n = 19). Although, early sexual debut is typically defined as occurring before age 15, early sexting was defined for this study as before age 16 due to the distribution of our sample and limited sample size. Results indicated that those who had sexted early were significantly more likely to endorse the body affirmation reason than those who had sexted later (see Table 13). No significant differences emerged between those who had sexted early versus late in terms of sexual agency and pressure reasons.

CHAPTER 4: DISCUSSION

The current study sought to broaden understanding of the development of adolescent girls' sexting activity in three primary ways. First, using a holistic perspective, it provides an in-depth investigation, employing a positive sex, feminist, and developmental perspective, comparing consensual sexting to other consensual sexual behaviors within the context of romantic development across early and middle adolescence. Second, this study is the first to assess both normative and risk predictors of the early onset of sexting across adolescence using longitudinal data. Third, this study expands our understanding of motivations related to sexting behavior, as well as motivations related to the age of onset of sexting behavior. Understanding motives can help to inform interventions, as different motivations for engaging in sexual behaviors are associated with distinctive patterns of risk for adolescents.

Sexting within the Context of Sexual and Romantic Development: Utilizing a Lifetime History and Relational Approach

The first aim of the current study was to articulate a more holistic picture of sexting than the literature to date. Towards this end, both formal hypothesis testing and identifying patterns of descriptive information within the data were employed. Further, the study explored the emergence of sexting both within the context of adolescents' life histories and relationship histories. The lifetime history approach examines sexting for the individual across different relationships, whereas a relationship approach focuses on examining details of the specific relationships in which sexting emerged. Utilizing both a lifetime history and a relationship approach helps to understand patterns of behavior initiation in a more nuanced way than the extant literature, which has largely only employed the lifetime history approach.

Lifetime History Approach

Examining the onset of sexting within the context of other emergent sexual behaviors (ranging from hand holding to sexual intercourse), using a lifetime history analysis, highlighted some developmental features of sexting. As expected, the pattern of sexting onset mirrored that for the onset of heavy sexual behaviors, in particular, genital contact behaviors (i.e., manual stimulation, oral sex, and sexual intercourse). For example, about 30% of participants had sexted by T4, at which point participants were 13 to 19 years old, corresponding to the prevalence rates of the genital contact behaviors at that time. This prevalence rate for sexting is also consistent with rates of sexting for this age group, and among more racially diverse samples, reported in the literature (Fleschler et al., 2013; Steinberg et al., 2019; Temple et al., 2012). Further, the average age of sexting onset was most similar to the average age of onset for genital contact behavior, occurring within the same year. These findings, that sexting tends to co-emerge with genital contact behavior, are consistent with previous work (Kosenko, Luurs, & Binder, 2017; Steinberg et al., 2019). Additionally, for the teens who had sexted, it occurred closest in time to genital contact behaviors as compared to light sexual behaviors, such as kissing. Furthermore, when sexting emerged before a specific sexual behavior, rather than after it (e.g., sexting before kissing versus kissing before sexting), there tended to be a shorter latency period between the onset of the two sexual behaviors.

Findings from Aim 1 also expanded on prior work by more precisely identifying when sexting emerged relative to non-genital and genital sexual behaviors. Although the sequencing of first sext relative to other sexual behaviors varied somewhat, it most frequently occurred after engaging in some light behaviors or heavy touching but before first genital contact behavior. Further, sexting was more likely to occur before sexual intercourse than after. For many youth,

sexting could be providing a way to communicate sexual preferences and desires before engaging in them in person. The finding that sexting occurs prior to sexual intercourse is consistent with Temple and Choi's (2014) work showing that sexting might be a "gateway" to other sexual behaviors, and that the odds of being sexually active one year later were 1.32 times larger for youth who sent a sext, relative to those who had not. Future research should also examine the frequency of sexting throughout the relationship, and if sexting is consistently used as a tool to initiate additional in-person sexual behaviors, as a way to reflect on past experiences with a partner, as a way to stay connected when not physically together, or as a substitute for in-person behaviors, as has been found in long-distance relationships (Walker, Sanci, & Temple-Smith, 2013).

Although there was a strong correlation between sexting and heavy sexual behaviors, there was not always co-occurrence of the behaviors. For example, only 50% of those who had sexted by T4 also had engaged in sexual intercourse by T4, and vice versa. It could be that there are different motivations for engaging in sexual intercourse and sexting. Indeed, recent research has found that teens may sext for reasons other than to initiate in-person sexual behaviors (Bianchi et al., 2019; Cox, Currin, Garos, 2019). For instance, prior research has applied catharsis theory to suggest that sexting could act as a substitute for in-person sexual behaviors, as there is less risk for STIs and pregnancy (Lippman & Campbell, 2014; Kosenko, Lurrs, Binder, 2017). Conversely, only 50% of teens in this study who reported having had sexual intercourse acknowledged having sexted. Other research suggests some reasons why teens may choose not to sext, including the potential for social-emotional and legal consequences (Doonwaard et al., 2017; Englander, 2015; Gewirtz-Meydan, Mitchell, & Rothman, 2018).

Using a lifetime approach shed light additionally on normative sexual development for African American females. Our sample, consisting of primarily African American girls from an urban community, is understudied in the field of normative sexual development. Overall, looking at age of onset of behaviors, we found that light behaviors tend to occur first, then touching, manual stimulation, oral sex, and then sexual intercourse. This pattern of emergent sexual behaviors is consistent with published findings that portray a developmental progression of sexual behavior in which kissing and handholding typically precede genital contact behaviors in white adolescents (de Graaf et al., 2009). However, this differs from some research that has found minority youth were more likely to follow a nonlinear trajectory for sexual engagement of behaviors (de Graaf et al., 2009; Smith & Udry, 1985). Further research in this area with a larger sample size is needed.

Relationship Approach

The second part of Aim 1 utilized a relationship approach to describe sexting within the first two relationships in which it emerged. Examining the relational context of sexting is a salient line of research that has heretofore been neglected by researchers. This study examined in which types of relationships sexting was most likely to occur. Similar to prior research with adolescents, sexting primarily emerged in this study as communication with an exclusive or casual dating partner rather than with a hookup partner (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2008). This pattern emerged for both the first and second partners with whom a participant had sexted. Furthermore, this analysis provides some insight into the level of risk associated with sexting, given that extant research shows that sexts exchanged within the context of a hookup, versus committed relationship, were more likely to be forwarded to others (Drouin et al., 2013).

This study also explored the sequencing of first sexting behavior compared to other sexual behaviors, and the latency between sexting and other sexual behaviors within the participant's first two sexting relationships. With first sexting partners, sexting was significantly more likely to occur after light sexual behaviors and before sexual intercourse. With second sexting partners, participants were just as likely to sext before, as after, light sexual behaviors, but equally likely to occur before, as after, heavy sexual behaviors. In terms of latency between sexual behaviors, sexting emerged closest in time to the genital contact behaviors within both the first and second sexting relationships. Yet, in the second sexting relationship, the latency time to all sexual behaviors — including sexting — was shorter. Collectively, these findings suggest that as teens acquire more romantic and sexual experience, sexting is likely to emerge earlier in the relationship and before other sexual behaviors. Understanding normative developmental trends paves the way to identifying deviances from the normative trajectory, which could indicate potential risks of sexting. For example, future research could examine if sexting earlier in the sequencing of sexual behavior for an individual, or earlier in a relational context, is related to risky sexual behavior (e.g., multiple sexual partners) or negative consequences (e.g., sexts forwarded to others).

Overall, Aim 1 findings suggest that sexting is a salient facet of sexual behavior in adolescence that often co-emerges with genital contact behaviors. The finding that almost one-third of the adolescents in the sample endorsed sexting is consistent with the view of sexting as a normative behavior between sexual partners in adolescence (Döring, 2014; Weisskirch, Drouin, & Delevi, 2017). The current findings call into question the extent to which sexting, as opposed to co-occurring genital contact behavior, is related to some of the risks reported in the sexting literature. Many of the risks linked to sexting have also been associated with the initiation of

sexual intercourse (e.g., alcohol use, sexual risk behavior, psychological distress; James, Ellis, Schlomer, & Garber, 2012; Ma et al., 2009; Zimmer-Gembeck & Helfand, 2008). Additional studies are needed to clarify the degree to which sexting uniquely contributes to the onset, persistence, or level of psychosocial problems.

Furthermore, approaching sexting as a normative sexual behavior that occurs close to genital contact behavior indicates that sexting might have some positive functions. Sexting could enhance sexual satisfaction, intimacy, and communication of sexual desires, as has been demonstrated in research on sexting in adult romantic relationships (Brodie, Wilson, & Scott, 2019). For example, one study found that relationship satisfaction was positively related to the amount of sexting done within the relationship (Parker, Blackburn, Perry, & Hawks; 2013). Another study of 459 participants, with an age range of 18 to 25 years, found that sexting was associated with low levels of attachment avoidance, which is typically related to greater attachment security and greater attunement between partners (Weisskirch, Drouin, & Delevi, 2017). Future research on the positive functions of sexting should be conducted specifically with adolescents.

It is important to note that the definition of sexting used for this study was purposefully chosen to be consistent with scholars' calls for a comprehensive and youth-defined operationalization. Results from Aim 1, indicate that even with a broad definition of sexting (to include sexually explicit texts, as well as photos or videos) there is a co-emergence of sexting and genital contact behavior. Previous definitions emphasized the aspects of sexting associated with legal ramifications, rather than those associated with the developmental trajectory of adolescent's sexual experiences. This co-emergence might imply that sexual texts, as well as sexual photos, are correlated with heavier sexual behaviors. One limitation of our broad

definition, however, is that it is unclear which aspects of sexting are most associated with genital contact. More research, including quantitative and qualitative data, is needed to inform the definition of sexting for consistency and ease of interpretations of findings in the literature.

Predictors of Sexting Onset

Examining the timing of the onset of sexting is significant, as the early emergence of sexting may signal precocious sexual behaviors that have been linked to psychosocial and sexual health problems, such as increased substance use, depressive symptoms, likelihood of contracting STDs, and unintended pregnancy (James et al., 2012; Ma et al., 2009; Zimmer-Gembeck & Helfand, 2008). In keeping a balanced and holistic perspective, normative experiences, in addition to potential risk factors, were examined in this study as predictors of the onset of sexting. Earlier research suggests that although early romantic and sexual involvement can be related to risky trajectories, there is a progression of intensity of dating and sexual experience that is normative and healthy even in early adolescence, that might predict the onset of sexting (Williams et al., 2008).

Findings from Aim 2, related to baseline survival analyses, indicated that the likelihood of sexting was greatest between ages 16 and 18, and that the median age based on the Kaplan-Meier estimator of first sexting was 17.9. This finding is consistent with literature indicating teens are mostly likely to sext in the later years of high school and prevalence rates of sexting in early adulthood are around 50% (Drake et al., 2012; Englander, 2015; Klettke, Hallford, & Mellor, 2014; Steinberg et al., 2019). Unexpectedly, the proposed covariates, pubertal status and family demographic risk, were not significant predictors of sexting. Although the relationship between these variables and romantic and sexual development has been well established, less research has

examined the link between these variables and sexting. Prior research has also failed to find a link between sexting and other indicators of demographic risk (Steinberg et al., 2019).

First, normative developmental predictors of sexting onset were examined, including different aspects of romantic and sexual experience. Romantic and sexual development is a key task in adolescence. Romantic and sexual experiences are often predictive of each other, and have also been associated with the emergence of sexting (Temple et al., 2012). The hypothesis that more romantic and sexual behavior would predict earlier sexting was partially supported. Youth who had 2 or more romantic or sexual partners had 2.96 times the hazard of sexting than those with no partners, and this finding was marginally significant. Similarly, Temple and colleagues (2012) found a relationship between sexting and dating, as well as sexting and number of sexual partners. Unexpectedly, prior sexual behavior and prior length of relationships were not associated with earlier age of sexting. Given that sexting typically emerged before heavier sexual behaviors, it could be that engaging in sexting could be predictive of heavier sexual behavior, but not vice versa. Alternatively, the sample used for this study was relatively small so there might not have been the power to detect the effects of prior romantic/sexual experience on the emergence of sexting. There may be additional normative experiences that were not addressed in this study that might bear on the emergence of sexting. For example, there are a vast array of contexts, motivations and interpersonal dynamics that might be involved in sexting behavior. Factors such as relationship satisfaction, degree of trust in the relationship, and degree of sexual comfort in the relationship might also contribute to the onset of sexting.

There may also be populations vulnerable to engaging in sexting at a precocious age, thus leaving them susceptible to more negative outcomes, as is true with other precocious sexual behaviors. Thus, additional predictors of early sexting onset were examined, including prior

mental health symptoms and IPV exposure. Success in preventing or reducing potential negative consequences of sexting depends to a large extent on identifying risk factors that precede it. Greater IPV exposure was a marginally significant predictor of earlier age of sexting. Research finds youth with prior exposure to interpersonal violence are at risk for particular challenges in the romantic and sexual realms compared to youth without victimization histories, including dating aggression, sexual difficulties, and risky sexual behavior (Francis, et al., 2002; Godbout, et al., 2009; McLean et al., 2013). Youth with more IPV exposure might be more vulnerable to engage in early or risky sexual behaviors as an attempt to achieve intimate interpersonal connections while lacking the skills or modeling to do so in safer ways (Hillis et al., 2001). Although sexting in order to achieve intimacy might not be risky in and of itself, it might be if a teen struggles with low self-esteem, boundary setting, or asserting agency. Future research should examine mediators of the relationship between IPV exposure and early sexting, including emotion regulation, conflict resolution skills, or PTSD symptomology (Collins & Sroufe, 1999; Feiring et al., 2017; Wolfe et al., 2004).

Unexpectedly, mental health symptoms were not significant predictors of the onset of sexting. Internalizing symptoms, although not statistically significant, was in the right direction for predicting earlier sexting in this study. Thus, studies with larger samples should further investigate the impact of internalizing problems on early sexting. Externalizing symptoms was not a statically significant predictor of earlier sexting in this study, which is inconsistent with prior studies that have found a correlation between sexting and externalizing symptoms using mixed gendered samples (Dake et al., 2012; Frankel et al., 2018). It could be that externalizing problems are more closely related to sexting for boys than girls or that the current study was underpowered to detect its effect in our sample.

Consistent with the research on sexual risk in general, this study found that youth with more IPV exposure may be at greater risk for earlier onset of sexting and could be targeted for early interventions around healthy romantic and sexual development. Research indicates that females with histories of IPV are more likely to be classified as insecurely attached and form relationships with men who are more physically and sexually aggressive (DiLillo et al., 2001, Rumstein-McKean & Hunsley, 2001). Youth with IPV exposure could be using different strategies for regulating emotions and intimacy (Wolfe et al., 2004). Thus, examining the romantic and sexual concerns and sexting motives of youth who have had early experiences of trauma and victimization might provide insights regarding intervention efforts aimed at increasing interpersonal and psychosocial functioning for this vulnerable population. Routine screening for and evaluation for IPV should be implemented in both clinical and medical settings.

Identifying prospective predictors of sexting aids in the interpretation of a research base that includes predominantly cross-sectional studies. For example, it could indicate that those who are depressed or have more IPV exposures might be at risk for engaging in sexting earlier; and not that sexting leads to feeling depressed as other cross-sectional studies have suggested (Frankel et al, 2018). Other studies also have found that youth who are at risk might be more likely to sext. For example, Houck and colleagues (2014) found that 7th grade girls at risk for emotional and behavioral problems had a higher prevalence rate of sexting than the general population. Alternatively, there could be a bi-directional effect such that those who are depressed are more at risk for sexting, then sexting — in turn — leads to more depressive symptoms. This question should be examined in additional longitudinal studies.

Sexting Motivations

Understanding motivations to sext is critical to develop effective interventions and to understand the significance of sexting in adolescence, as different motivations for engaging in sexual behaviors are associated with distinctive patterns of sexual behavior and risk for adolescents (Cooper et al., 1998). Within the sexting literature, three primary motives for teen sexting have been identified: pressure, sexual agency, and body affirmation (Bianchi et al., 2016; Bianchi et al., 2017).

Findings from Aim 3 indicated, similar to other studies and as expected, that most teens, regardless of their sexting status, indicate sexual agency reasons as their primary motivation for sexting (National Campaign to Prevent Teen and Unplanned Pregnancy & CosmoGirl.com, 2008). This finding highlights the importance of acknowledging girls' agency in their sexual behavior, as girls are often portrayed as "victims" of sexting (Karaian & Mitchell, 2009; Karaian, 2012). Further, results indicated that girls who had sexted were more likely to endorse both sexual agency and body reinforcement motivations than girls who had not yet sexted. Accepting and redefining one's body image is another important developmental task in adolescence (Erikson, 1970). In today's society many teens use feedback from peers on social media to inform and explore their body image (Schmitt et al., 2008), and sexting may also be used in this way (Bianchi et al, 2019; Drouin et al., 2013; Englander, 2015). These two motivations are similar in that girls are freely choosing to sext and might indicate a comfort with, or exploration of, their sexuality and body image.

Among girls who had sexted, those who sexted before age 16 were more likely to endorse body affirmation motives than girls who sexted after the age of 16. No differences emerged for sexual agency and pressure motives among girls above or below age 16. This finding was unexpected as prior research shows that the body reinforcement motive to sext is higher amongst

older adolescence than younger adolescents (Bianchi et al., 2019). Additional replication studies and qualitative investigations are needed to better understand this discrepancy.

Pressure did not emerge as a salient motivation for girls to sext, regardless of whether girls had sexted or the age of first sexting. This finding differs from extant literature that finds most girls feel some pressure to sext and to a much greater degree than males (e.g., Englander, 2015). Of note, consensual sexting was embedded in our definition of sexting, but other research does not differentiate between consensual and nonconsensual sexting. This discrepancy might account for a higher amount of pressure reported in other studies, as would be expected if the interaction were coercive (Krieger, 2017). Future research needs to distinguish between consensual and nonconsensual sexting, as coercive sexting is a form of abuse, and is a distinct area of study (Döring, 2014; Drouin & Tobin, 2015; Krieger, 2017). When sexting is viewed as a normative sexual behavior, distinctions between consensual and nonconsensual behaviors become all the more important for understanding the antecedents and consequences of sexting.

Clinical Implications

Taken together, these results, which suggest a normative view of adolescent sexting, have some clinical implications. As sexting is a common behavior among teens, abstinence only campaigns similar to those for sexual behavior more generally, are unlikely to be successful (Döring, 2014). Instead, comprehensive sexual education programs tailored to youth based on their age are likely to be more effective. Regardless of age, interventions should address potential risks of sexting and help to manage the potential stresses associated with sexting, as well as acknowledge potential positive aspects of sexting and what safe sexting looks like. Given that early sexting may be of particular concern, sexting interventions for younger adolescents should include utilizing "delay-based" interventions shown to be effective in helping youth to postpone

the initiation of genital contact behaviors (Kirby, 2008). For older adolescents, strategies for engaging in safer sexting should be emphasized. Similar to safer sex practices that can vary in form and level of risk, there might also be varying levels of safer sexting. For instance, safe sex practices range from dry sex, to using condoms, to not using any protection but getting tested for STDs. Safe sexting could also take a harm reduction approach ranging from sexual texts instead of photos, sexually suggestive photos that do not include genitals (e.g., in a bathing suit), or sending nudes but without any identifying features (Döring, 2014; Ravenscraft, 2013). Further, waiting until you know and trust your partner, making sure sexting is occurring in a consensual manner (there should be a conversation before initiating the behavior), and sexting through apps such as Snapchat (on which images are not saved) could be considered safer than through text, especially if you have an agreement not to screenshot (Döring, 2014, Ravenscraft, 2013). Interventions should also be tailored to different motivations for sexting, and include information on deconstructing gendered sexual stereotypes (e.g., sexual double standards, victim blaming) and beauty ideals in the media (Döring, 2014).

Limitations and Future Directions

While the current study provides an initial step toward a richer understanding of adolescent girls' sexting behavior, it is not without limitations. The small sample of girls that had sexted (n = 22) may have reduced power to detect other meaningful relationships. Limitations related to generalizability are also worth noting. The current sample included mostly African American girls from an urban community. There are important theoretical and practical reasons to focus on this sample. African American youth are understudied in the realm of normative sexual development and some research shows that they have different patterns of sexual engagement (de Graaf et al., 2009; Smith & Udry, 1985). Nonetheless, the generalizability of

the results to males, youth from other racial and ethnic backgrounds, or those from a broader range of income brackets is unknown. Further, most of the sample was heterosexual, thereby not allowing for enough variability to examine differences in sexting behavior based on sexual orientation. Future research should examine whether there are differences in the timing, context, motives, or functions of sexting for sexual minority youth. There is some evidence to suggest that LGBTQ youth are more likely to sext than heterosexual youth (Rice et al., 2012) and this difference should be further evaluated. For example, it could be that for sexually marginalized youth, sexting might be a more private way to express intimacy in the absence of being able to be publically intimate (Ybarra & Mitchell, 2014).

This study shed light on the importance of examining sexting within the contexts of age, and sexual and relationship development. However, the exploration of additional contextual factors in future studies would be further illuminating. For example, examining how sexting fits into the broader pattern of electronic communication use of adolescents would further contribute to a holistic understanding of the practice of sexting. Rice and colleagues (2018) found that teens that send over 300 texts a day were twice as likely to report sexting. Future research should also examine what percentage of electronic communication, within a given relationship, is used for sexting versus other activities (e.g., coordinating plans to meet up, talking about the day, texting about intimate romantic feelings they have for each other). Further assessment of the content of sext messages could help to discern if sexting is always akin to heavier sexual behaviors, when sexting might be risky, and what functions sexting serves in a relationship (e.g., to deepen intimacy, explore body image, exploit or pressure a partner). Finally, family factors, such as attachment to caregivers and parental monitoring (both of the teen generally and of the teen's interactions with electronic devices specifically), can also impact the likelihood and riskiness of

teen sexting (Campbell & Park, 2013; Prather & Vandiver, 2014; Romo et al., 2017; Tomić et al., 2017).

Conclusion

In spite of its limitations, the current study contributes to understanding how adolescent girls' sexting onset fits into the trajectory of emerging sexual behavior without assumptions of risks. Using a holistic, sex positive, and developmental approach, this study found that sexting is a normative form of communication for adolescents who engage in heavy sexual behaviors. This study is the first to assess the timing of sexting initiation and predictors of early onset of sexting across adolescence using longitudinal data. As such, this study provides the groundwork for future research to further clarify when sexting signals risk or normative (healthy) development. Outcomes related to motivations for sexting indicate that sexual agency was the primary motive for girls to sext. This finding points to the importance of studying girls' sexual behaviors in the context of their desire and motivations before declaring blanket assumptions about risk. Finally, information gained from this study can inform targeted curricula for promoting sexual health and communication.

APPENDIX A: TABLES

Table 1

Lifetime Incidence Rates and Age of Initiation for Sexting and Other Sexual Behaviors at T4 (N

= 79)

Sexual Behavior	% (n)	Mean age (SD)	Median age	Min - max age	Mode age
Light	73.4 (58)	12.67 (2.11)	13.25	6.00 – 16.00	13.25
Hold hands	72.2 (57)	12.95 (2.20)	13.25	6.00 – 16.00	14.25
Kiss	70.9 (56)	13.67 (1.68)	13.95	7.00 – 17.00	13.25
Cuddle	62.1 (49)	14.07 (1.73)	14.25	9.00 – 17.25	14.25
Make out	54.4 (43)	14.58 (1.21)	14.75	11.75 – 17.25	14.75
Heavy	50.6 (40)	14.93 (1.13)	14.95	13.00 – 17.25	15.25
Heavy Touch	49.4 (39)	14.94 (1.22)	14.90	13.00 – 17.75	15.25
Manual	35.4 (28)	15.48 (0.89)	15.75	13.90 – 17.00	15.75
Oral Sex	26.6 (21)	15.62 (0.87)	15.75	14.00 – 17.75	15.75
Sex	27.8 (22)	16.07 (1.08)	16.13	14.00 – 18.25	15.75
Sext	27.8 (22)	15.57 (1.34)	15.38	13.00 – 18.25	15.00

Note: Manual = manual stimulation.

Table 2

Average Number of Years between First Sext and First Sexual Behaviors

Sexual Behavior	Mean Years (SD)	Median Years	Min – Max Years	Mode Years	n
Kiss	1.74 (1.34)	1.25	0.00 – 4.00	1.00	20
Kiss first	1.82 (1.33)	1.25	0.00 – 4.00	1.00	19
Sext first	0.25 (0.00)	0.25	0.25 – 0.25	0.25	01
Heavy Touching	1.11 (1.15)	0.50	0.00 – 3.75	0.00	20
Touch first	1.34 (1.21)	1.17	0.00 – 3.75	0.00	14
Sext first	0.56 (0.85)	0.25	0.00 – 2.25	0.25	06
Manual Stimulation	0.75 (0.74)	0.75	0.00 – 2.15	0.00	15
Manual first	0.97 (0.85)	0.75	0.00 – 2.15	0.00	09
Sext first	0.42 (0.43)	0.25	0.00 – 1.00	0.25	06
Oral Sex	0.75 (0.80)	0.55	0.00 – 2.25	0.00	14
Oral first	1.03 (0.91)	0.75	0.00 – 2.25	0.00	05
Sext first	0.59 (0.74)	0.25	0.00 – 2.25	0.00	09
Sexual Intercourse	0.76 (0.77)	0.75	0.00 – 2.25	0.00	11
Sex first	1.50 (0.71)	1.50	1.00 – 2.00	1.00	02
Sext first	0.59 (0.72)	0.25	0.00 – 2.25	0.00	09

Note. Manual = manual stimulation.

Table 3

Percentage of Participants that Engaged in Other Sexual Behaviors before first Sext (n = 22)

Sequencing of Sexual Behavior and Sexting	% (n)
Sexting first behavior	09.1 (02)
Only light behaviors before sexting	27.3 (06)
Heavy behaviors before sexting	63.6 (14)
Heavy touching before sexting	22.7 (05)
Manual stimulation before sexting	18.2 (04)
Oral sex before sexting	13.6 (03)
Sexual intercourse before sexting	09.1 (02)

Table 4

Chi-square Test of Independence Results for the Relationship between Sexting and Other Sexual

Behaviors at T4 (N = 79)

Sexual Behavior		% (n)		χ^2	df	p
		Sext: Yes	Sext: No			
Light Behavior	Yes	36.20 (21)	63.80 (37)	7.59***	1	.006
	No	04.80 (01)	95.20 (20)			
Holding Hands	Yes	36.80 (21)	63.20 (36)	8.24***	1	.004
	No	04.50 (01)	95.50 (21)			
Kissing	Yes	35.70 (20)	64.30 (36)	5.92*	1	.015
	No	08.70 (02)	91.30 (21)			
Cuddling	Yes	40.82 (20)	59.18 (29)	10.80***	1	.001
	No	06.70 (02)	93.30 (28)			
Making Out	Yes	41.90 (18)	58.10 (25)	9.22***	1	.002
	No	11.10 (4)	88.90 (32)			
Heavy Behavior	Yes	50.00 (20)	50.00 (20)	19.78***	1	<.001
	No	05.10 (02)	94.90 (37)			
Heavy Touching	Yes	51.30 (20)	48.70 (19)	21.05***	1	<.001
	No	05.00 (02)	95.00 (38)			
Manual Stimulation	Yes	53.60 (15)	46.40 (13)	14.28***	1	<.001
	No	13.70 (07)	86.30 (44)			
Oral Sex	Yes	66.70 (14)	33.30 (07)	21.45***	1	<.001
	No	13.80 (08)	86.20 (50)			
Sexual Intercourse	Yes	50.00 (11)	50.00 (11)	7.45***	1	.006
	No	19.30 (11)	80.70 (46)			

*p < .05. **p < .01. ***p < .001.

Table 5

Chi Square Goodness of Fit Results for Differences in Sexting Occurrence by Relationship Status

Sexting Partner	Relationship Status	% (n)	χ^2	df	p
1st sexting partner	Exclusive	59.09 (13)	0.73	1	.394
(n = 22)	Not Exclusive	40.91 (09)			
	Casual Dating	36.36 (08)			
	Hook-up	04.55 (01)			
2nd sexting partner	Exclusive	66.67 (08)	1.33	1	.248
(n = 12)	Not Exclusive	33.33 (04)			
	Casual Dating	33.33 (04)			
	Hook-up	00.00 (00)			

Table 6

Percentage of Participants that Engaged in Other Sexual Behaviors with First and Second

Sexting Partners before First Sext (n = 22)

Sequencing of Sexual Behavior and Sexting	% (n): 1st Sexting Partner	% (n): 2nd Sexting Partner
Sexting first behavior	31.8 (7)	41.7 (5)
Only light behaviors before sexting	27.3 (6)	16.7 (2)
Heavy behaviors before sexting	40.9 (9)	41.7 (5)
Touching before sexting	22.7 (5)	16.7 (2)
Manual stimulation before sexting	09.1 (2)	00.0 (0)
Oral before sexting	04.5 (1)	00.0 (0)
Sex before sexting	04.5 (1)	25.0 (3)
n	22	12

Table 7

Weeks into the Relationship of First Sext and First Other Sexual Behaviors with each Sexting

Partner

Sexting Partner	Sexual Behavior	Mean Weeks (SD)	Median Weeks (min - max)	n
1st sexting partner	Kiss	04.68 (08.77)	01.50 (0.00 – 32)	14
	Heavy Touch	10.82 (18.85)	04.00 (1.00 – 65)	11
	Manual Stimulation	14.00 (20.81)	04.00 (0.00 – 65)	10
	Oral Sex	18.06 (24.61)	04.00 (0.05 – 76)	09
	Sexual Intercourse	21.00 (28.25)	07.00 (2.00 – 74)	06
	Sext	15.27 (19.72)	06.00 (0.00 – 65)	22
2nd Sexting partner	Kiss	02.08 (02.97)	01.00 (0.00 – 08)	06
	Heavy Touch	12.16 (22.58)	03.00 (0.00 – 58)	06
	Manual Stimulation	10.50 (15.21)	03.00 (0.05 – 28)	03
	Oral Sex	16.16 (14.15)	20.00 (0.05 – 28)	03
	Sexual Intercourse	11.00 (14.93)	05.00 (0.00 – 28)	03
	Sext	08.79 (15.19)	03.50 (0.05 – 55)	12

Table 8

Survival rates for sexting by age

Age	Survival	Lower 95% CI	Upper 95% CI
13.0	0.98	0.93	1.00
14.0	0.94	0.88	1.00
15.0	0.85	0.76	0.94
16.0	0.75	0.64	0.87
17.0	0.63	0.50	0.80
18.0	0.46	0.29	0.71

Table 9

Predictors of Sexting Onset Using Time Dependent Cox Proportional Hazard Regressions

Predictors of Sexting Onset	B	SE	Z	p	Hazard Ratio (95% CI)
		Normative Predictors			
Relation length	-0.01	0.01	-0.18	0.860	1.00 (0.98 to 1.02)
# of Partners	(ref=0)				
1 partner	0.58	0.59	1.00	0.319	1.72 (0.57 to 5.65)
2+ partners	1.08	0.59	1.84[†]	0.065	2.96 (0.93 to 9.37)
Extent of Behavior	(ref=0)				
Light	0.61	0.50	1.23	0.220	1.85 (0.69 to 4.94)
Light + heavy	0.67	0.64	1.05	0.292	1.95 (0.56 to 6.78)
		Risk Predictors			
Internalizing Sx	0.02	0.01	1.57	0.120	1.02 (1.00 to 1.04)
Externalizing Sx	0.03	0.05	0.57	0.570	1.03 (0.94 to 1.13)
IPV	0.17	0.09	1.90[†]	0.058	1.19 (0.99 to 1.42)

[†] $\leq .1$; ***** $p \leq .05$; ****** $p \leq .01$.

Table 10

Descriptive Information for Sexting Motives (N = 70)

Motivation	Mean (SD)	Median	Min - Max
Agentic	1.91 (.80)	1.83	1.00 – 4.00
Body Affirm	1.35 (.61)	1.00	1.00 – 3.33
Pressure	1.27 (.33)	1.25	1.00 – 2.25

Note. 1 = Not at all a reason; 2 = Just a little; 3 = Somewhat; 4 = Quite a bit; 5 = The most.

Table 11

Results of Paired T-tests for Motives for the Overall Sample

Motivation	t	df	p
Agentic vs Body Affirm	5.84***	69	<.001
Agentic vs Pressure	6.77***	69	<.001
Body Affirm vs Pressure	-1.16	69	.249

*p < .05. **p < .01. ***p < .001.

Table 12

*Independent Samples T-test for having Sexted from Sexting Motivations*

	Sexted (n = 19)	Not Sexted (n = 51)			
Motivation	*M (SD)*	*M (SD)*	*t*	*df*	*p*
Agentic	2.55 (.90)	1.68 (.62)	-4.59***	68	<.001
Body Affirm	1.63 (.83)	1.24 (.47)	-2.45*	68	.017
Pressure	1.33 (.28)	1.24 (.34)	-.93	68	.357

*p < .05. **p < .01. ***p < .001.

Table 13

Independent Samples T-test for having Sexted Early from Sexting Motivations

	Sexted <16 (n = 12)	Sexted >16 (n = 7)			
Motivation	*M (SD)*	*M (SD)*	*t*	*df*	*p*
Agentic	2.44 (0.76)	2.73 (1.15)	0.65	17	.525
Body Affirm	1.92 (0.92)	1.14 (0.26)	-2.15*	17	.047
Pressure	1.32 (0.30)	1.33 (0.26)	0.10	17	.920

*p < .05. **p < .01. ***p < .001.

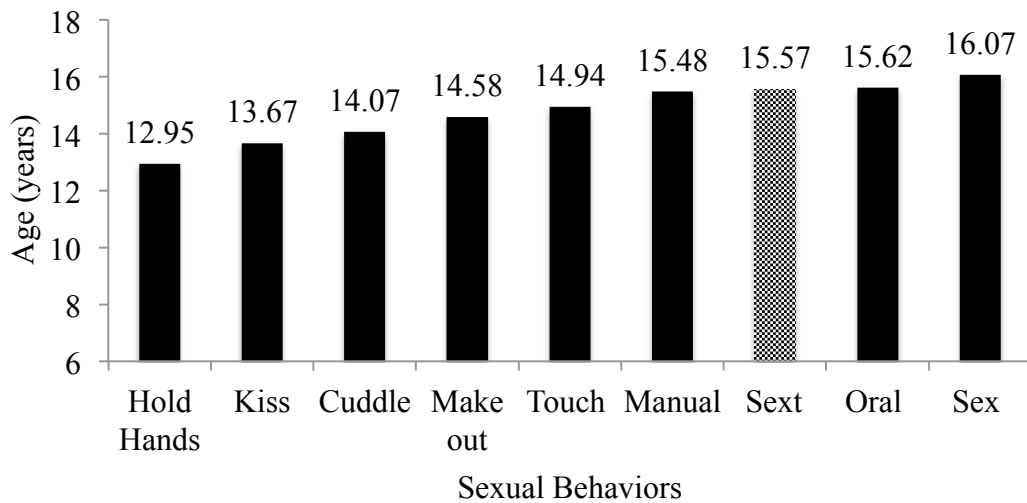**APPENDIX B: FIGURES**

Figure 1

Percent of Students Engaging in Sexual Behaviors by T4
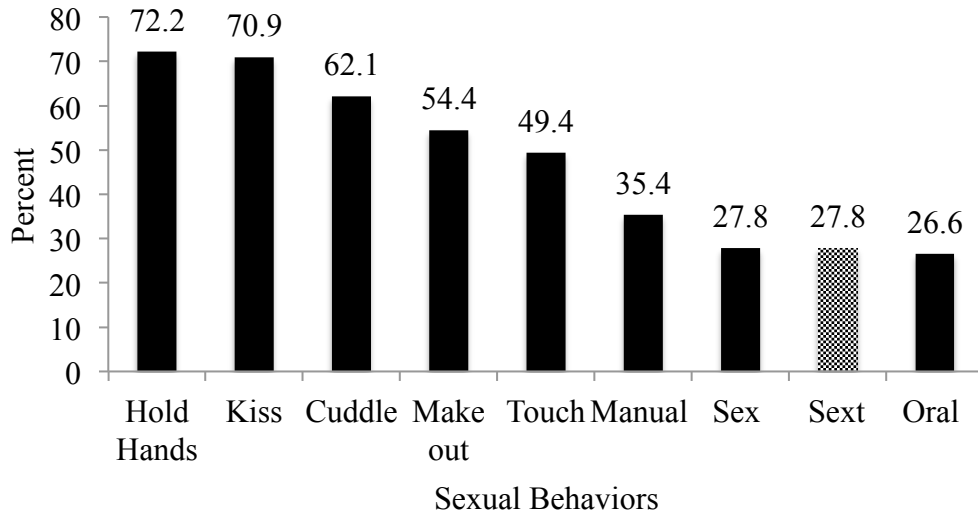
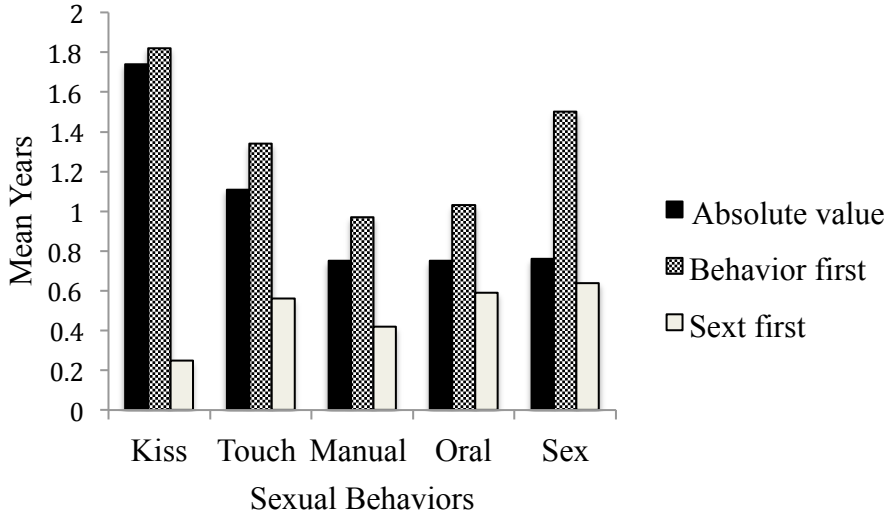*Note.* Touch = Heavy Touching; Manual = Manual stimulation.

Figure 2

Average Age of Engagement in Sexual Behaviors

Note. Touch = Heavy Touching; Manual = Manual stimulation.
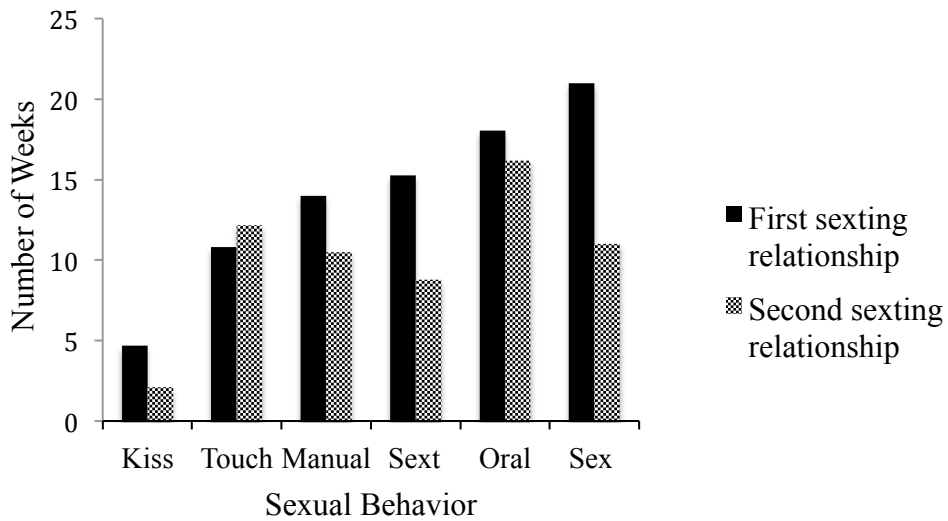
Figure 3

Mean Years between First Sext and First Sexual Behaviors
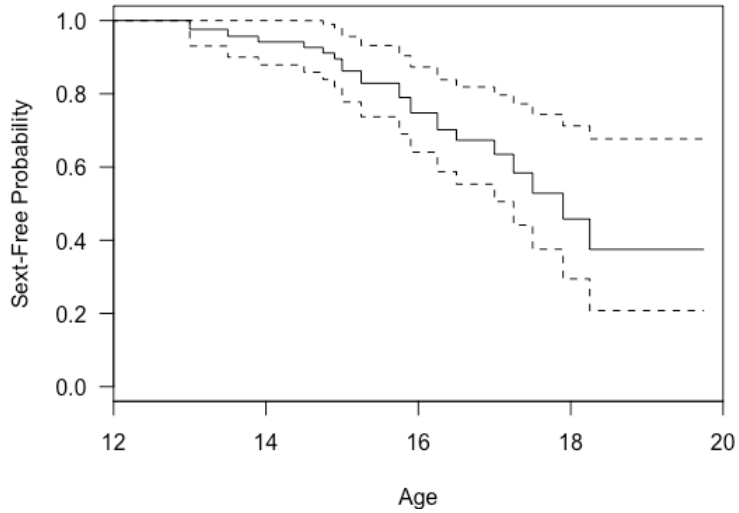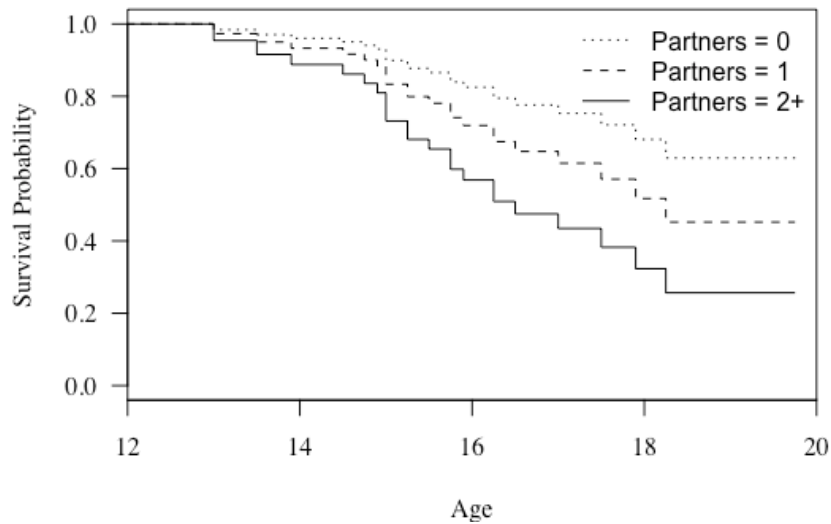

Note. Touch = Heavy Touching; Manual = Manual stimulation.

Figure 4

Mean Number of Weeks into each Relationship Engaged in Sexual Behaviors
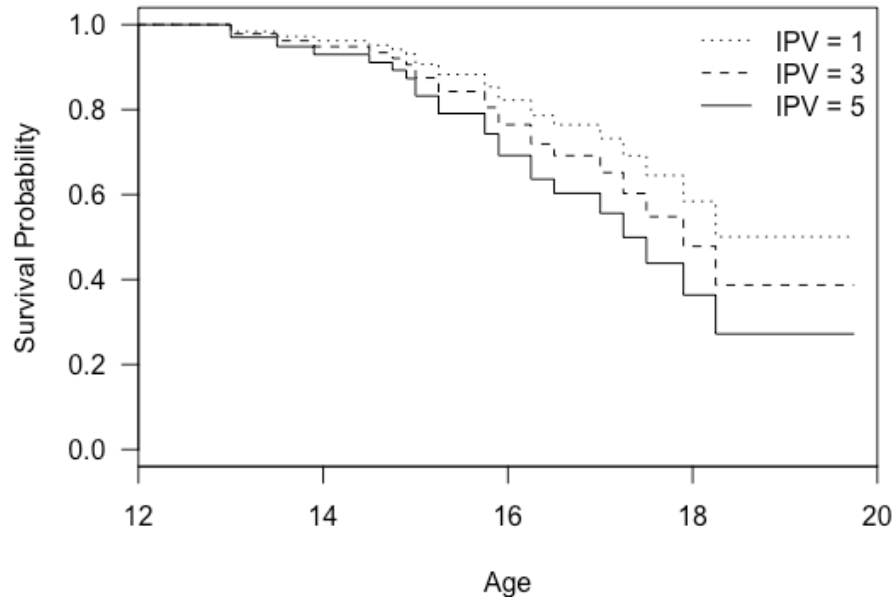

Note. Touch = Heavy Touching; Manual = manual stimulation.

Figure 5

Estimate of Proportion of those who have not Sexted by Age

Figure 6

Survival Rate for Sexting Onset at Different Number of Partners

Figure 7

Survival Rate for Sexting Onset at Different Levels of IPV Exposures

APPENDIX C: MEASURES

Engagement in Sexting and Other Sexual Behaviors

Circle "YES" or "NO" to indicate if the participant has ever (over lifetime) engage in each behavior

Cuddling	YES	NO
Handholding	YES	NO
Kiss	YES	NO
Make out	YES	NO
Above clothes (being felt up with your clothes on, above the waist)	YES	NO
Under clothes (being felt up underneath your clothes, above the waist)	YES	NO
Hand get (being fingered or being felt below the waist under or above clothing)	YES	NO
Hand give (hand job or fingering someone—feeling a partner below the waist under or above clothing)	YES	NO
Oral get (when someone "goes down on you")	YES	NO
Oral give (blow job or going down on someone)	YES	NO
Sexual intercourse	YES	NO
Sexting (sending or receiving sexual texts, photos, or videos)	YES	NO

Please write age in which participant FIRST engaged (lifetime) in each of these behaviors (enter in years, add decimals for months)

	Age
Cuddling	
Handholding	
Kiss	
Make out	
Above clothes (being felt up with your clothes on, above the waist)	
Under clothes (being felt up underneath your clothes, above the waist)	
Hand get (being fingered or being felt below the waist under or above clothing)	
Hand give (hand job or fingering someone—feeling a partner below the waist under or above clothing)	
Oral get (when someone "goes down on you")	
Oral give (blow job or going down on someone)	
Sexual intercourse	
Sexting (sending or receiving sexual texts, photos, or videos)	

Sequencing of Sexual Behavior Across Relationships

Now please use all calendars and indicate the sequential order of the first engagement of each sexual behavior across all timelines regardless of partner.

_____ Cuddling

_____ Handholding

_____ Kiss

_____ Make out

_____ Above clothes (being felt up with your clothes on, above the waist)

_____ Under clothes (being felt up underneath your clothes, above the waist)

_____ Hand get (being fingered or being felt below the waist under or above clothing)

_____ Hand give (hand job or fingering someone -- feeling a partner below the waist under or above clothing)

_____ Oral get (when someone "goes down on you")

_____ Oral give (blow job or going down on someone)

_____ Sexual intercourse

_____ Sexting (sending or receiving sexual texts, photos, or videos)

Timing and Sequence of Sexual Behaviors within Relationships
(Questions asked for each sexual partner)

Sexual Behavior	Y/N	Weeks into relationship	Sequence in which you did the behavior
Cuddling			
Hold Hands			
Kiss			
Make Out			
Touch Above			
Touch Below			
Hand Get			
Hand Give			
Oral Get			
Oral Give			
Sexual Intercourse			
Sexting			

If participant endorsed sexting, they were also asked the following questions:
When you sexted this partner:

	Yes	No
Did you receive a sext?	○	○
Did you send a sext?	○	○
If yes to sending a sext, was it requested?	○	○

Motivations to Sext

In general, please indicate how much each off the following was a reason for you to sext. If you have not sexted, mark the statement that would best describe you.

	Not at all (1)	Just a little (2)	Somewhat (3)	Quite a bit (4)	The Most (5)
To be fun or flirtatious					
To fit in					
Pressure from peers/friends					
Pressure from a guy/girl who wanted you to sext them					
Felt like you had to respond to a text that you received					
Sexual Satisfaction					
As a "sexy" present for a boyfriend					
To feel sexy					
To get him to like you					
To get positive feedback					
To get noticed					
OTHER					

Motive Subscales

Pressure
1. Pressure from peers/friends
2. Pressure from a guy/girl who wanted you to sext them
3. Felt like you had to respond to a text that you received

Sexual Pleasure
1. To be fun or flirtatious
2. To feel sexy
3. As a "sexy" present for a boyfriend
4. Sexual Satisfaction

Body Reinforcement
1. To get him/her to like you
2. To get positive feedback
3. To get noticed

Children's Depression Inventory (CDI)

I'm going to read out loud a list of feelings and ideas in groups. From each group, pick one sentence that describes you best for the PAST TWO WEEKS. There is no right or wrong answer. Just choose the sentence that best describes the way you have been feeling recently.

1. ☐ I am sad once in a while.
   ☐ I am sad many times.
   ☐ I am sad all the time.

2. ☐ Nothing will ever work out for me.
   ☐ I am not sure if things will work out for me.
   ☐ Things will work out for me okay.

3. ☐ I do most things okay.
   ☐ I do many things wrong.
   ☐ I do everything wrong.

4. ☐ I have fun in many things.
   ☐ I have fun in some things.
   ☐ Nothing is fun at all.

5. ☐ I am important to my family.
   ☐ I am not sure if I am important to my family.
   ☐ My family is better off without me.

6. ☐ I hate myself.
   ☐ I do not like myself.
   ☐ I like myself.

7. ☐ I feel cranky all the time.
   ☐ I feel cranky many times.
   ☐ I am almost never cranky.

8. ☐ I cannot make up my mind about things.
   ☐ It is hard to make up my mind about things.
   ☐ I make up my mind about things easily.

9. ☐ I have to push myself all the time to do my schoolwork.
   ☐ I have to push myself many times to do my schoolwork.
   ☐ Doing schoolwork is not a big problem.

10. ☐ I am tired once in a while.

  ☐   I am tired many days.

  ☐   I am tired all the time.

11. ☐   Most days I do not feel like eating.

  ☐   Many days I do not feel like eating.

  ☐   I eat pretty well.

12. ☐   I do not feel alone.

  ☐   I feel alone many times.

  ☐   I feel alone all the time.

Abbreviated Trait Anxiety Scale from the State-Trait Anxiety Inventory for Children

For these last items, decide how often each describes how you USUALLY FEEL. Choose between "hardly ever", "sometimes", or "often" true for you IN GENERAL. Again, there are no right or wrong answers.

1. I worry about making mistakes.

2. It is difficult for me to face my problems.

3. Unimportant thoughts run through my mind and bother me.

4. I have trouble deciding what to do.

5. I worry about things that may happen.

Strengths and Difficulties Questionnaire (SDQ)

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of this young person's behavior over the last six months or this school year.

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	☐	☐	☐
Restless, overactive, cannot stay still for long	☐	☐	☐
Often complains of headaches, stomach-aches or sickness	☐	☐	☐
Shares readily with other youth, for example books, games, food	☐	☐	☐
Often loses temper	☐	☐	☐
Would rather be alone than with other youth	☐	☐	☐
Generally well behaved, usually does what adults request	☐	☐	☐
Many worries or often seems worried	☐	☐	☐
Helpful if someone is hurt, upset or feeling ill	☐	☐	☐
Constantly fidgeting or squirming	☐	☐	☐
Has at least one good friend	☐	☐	☐
Often fights with other youth or bullies them	☐	☐	☐
Often unhappy, depressed or tearful	☐	☐	☐
Generally liked by other youth	☐	☐	☐
Easily distracted, concentration wanders	☐	☐	☐
Nervous in new situations, easily loses confidence	☐	☐	☐
Kind to younger children	☐	☐	☐
Often lies or cheats	☐	☐	☐
Picked on or bullied by other youth	☐	☐	☐
Often offers to help others (parents, teachers, children)	☐	☐	☐
Thinks things out before acting	☐	☐	☐
Steals from home, school or elsewhere	☐	☐	☐
Gets along better with adults than with other youth	☐	☐	☐
Many fears, easily scared	☐	☐	☐
Good attention span, sees work through to the end	☐	☐	☐

SDQ Scales:

<u>Externalizing Symptoms</u>

Conduct Problems:
1. Often loses temper
2. Generally well behaved, usually does what adults request (reverse scored)
3. Often fights with other youth or bullies them
4. Often lies or cheats
5. Steals from home, school or elsewhere

Hyperactivity-Inattention:
6. Restless, overactive, cannot stay still for long
7. Constantly fidgeting or squirming
8. Easily distracted, concentration wonders
9. Think things out before acting (reverse scored)
10. Good attention span, sees work through to the end (reverse scored)

UCLA/ACES

Below is a list of VERY SCARY, DANGEROUS, OR VIOLENT things that sometimes happen to children. These are times where someone was HURT VERY BADLY OR KILLED, or could have been. Some children have had these experiences, some children have not had these experiences.

FOR EACH QUESTION: Check "Yes" if this scary thing HAPPENED TO YOU SINCE WE SAW YOU LAST Check "No" if it DID *NOT* HAPPEN TO YOU

1) Being in a big earthquake that badly damaged the building were in. Yes [ ] No [ ]

2) Being in another kind of **disaster**, like a fire, tornado, flood or hurricane. Yes [ ] No [ ]

3) Being in a bad **accident**, like a **very serious** car accident. Yes [ ] No [ ]

4) Being in place where a **war** was going on around you Yes [ ] No [ ]

5) Being **hit, punched, or kicked very hard** at home.
(**DO NOT INCLUDE** ordinary fights between brothers & sisters). Yes [ ] No [ ]

6) Seeing a family member being **hit, punched or kicked very hard** at home.
(**DO NOT INCLUDE** ordinary fights between brothers & sisters). Yes [ ] No [ ]

7) Being **beaten up, shot at or threatened to be hurt badly** in your town. Yes [ ] No [ ]

8) Seeing someone in your town being **beaten up, shot at or killed.** Yes [ ] No [ ]

9) Seeing a **dead body** in your town (do not include funerals). Yes [ ] No [ ]

10) Having an adult or someone much older touch your
private sexual body parts when you did not want them to. Yes [ ] No [ ]

11) Hearing about the **violent death or serious injury** of a loved one. Yes [ ] No [ ]

12) Having **painful and scary medical treatment in a hospital** when your
were very sick or badly injured. Yes [ ] No [ ]

13) Having a parent or other adult in the household often or very often **swear at you, insult you, put you down, or humiliate you** OR acting in a way that made you afraid that you might be **physically hurt**? Yes [ ] No [ ]

14) Often or very often feeling that no **one in your family loved you or thought you were important or specia**l? Or feeling like your family didn't look out for each other, feel close to each other, or support each other Yes [ ] No [ ]

15) Losing a biological parent ever through **divorce, abandonment**, or other reason?   Yes [ ] No [ ]

17) Living with someone who was a **problem drinker or alcoholic, or who used street drugs**?   Yes [ ] No [ ]

18) Living with someone who was **depressed or mentally ill or who attempted suicide**?   Yes [ ] No [ ]

19) Living with someone who went to **prison**?   Yes [ ] No [ ]

20) Hearing **guns being shots?**   Yes [ ] No [ ]

21) Seeing **someone arrested**?   Yes [ ] No [ ]

22) Seeing **drug deals**?   Yes [ ] No [ ]

23) Living with grown ups who **yell at each other**?   Yes [ ] No [ ]

24) **OTHER** than the situations described above, has **ANYTHING ELSE** ever happened to your child that was **REALLY SCARY, DANGEROUS, OR VIOLENT?** Yes [ ] No [ ]
If yes, please write what happened:

Peer Victimization

The next thing I'd like to ask you about are things that kids sometimes do to other kids. I'd like to know if another kid has EVER done any of these things to you, either in person or electronically (like through the internet or texting). And then I'd like to know how often that happened during the last school year. For each behavior, you can tell me if this happened to you "not at all," "once," "a couple times," or "many times."

1. Said mean things, like making fun of you OR calling you mean or hurtful names? YES NO
    a. If yes, how often did that happen during the last school year?
2. Tried to hurt you in your relationships with others or damage your reputation, like ignoring you; excluding you from a group; leaving you out of things on purpose; telling lies or spreading rumors about your; OR trying to make others not like you? YES NO
    a. If yes, how often did that happen during the last school year?
3. Were mean or hurtful in a sexual way, like making unwelcome sexual comments, jokes, or gestures; calling you gay or lesbian in a negative way; touching you sexually or exposing themselves to you when you did not want them to; OR showing you sexy or sexual pictures that you didn't want to see. YES NO
    a. If yes, how often did that happen during the last school year?
4. Tried to hurt you physically, like hitting, kicking, pushing, OR shoving you. YES NO
    a. If yes, how often did that happen during the last school year?
5. Stole or damaged your property on purpose OR even tried to do that. YES NO
    a. If yes, how often did that happen during the last school year?

Conflict in Adolescent Dating Relationships Inventory (CADRI)

ONLY COMPELTE THIS FORM IS THE PARTICIPANT HAS HAD A ROMANTIC RELATIONSHIP FOR AT LEAST ONE MONTH

The following questions ask you about things that may have happened in any of your dating relationships while you were having an argument or disagreement. When answering these questions, just tell me "yes" if it is something that has happened to you during an argument or fight with any of your romantic partners. Tell me "no" if it is something that has never happened to you during an argument with any of your romantic partners.

1. I spoke to my partner in a hostile or mean tone of voice. **YES / NO**
2. My partner spoke to me in a hostile or mean tone of voice. **YES / NO**
    a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
3. I insulted my partner with put-downs **YES / NO**
4. My partner insulted me with put-downs. **YES / NO**
    a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
5. I told my partner how upset I was. **YES / NO**
6. My partner told me how upset he/she was. **YES / NO**
    a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
7. I said things to my partner's friends about my partner to try and turn them against him/her. **YES / NO**
8. My partner said things to my friends about me to try and turn them against me. **YES / NO**
    a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
9. I kicked, hit, or punched my partner. **YES / NO**
10. My partner kicked, hit, or punched me. **YES / NO**
    a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
11. I told my partner he/she was hurting my feelings. **YES / NO**
12. My partner told me I was hurting his/her feelings. **YES / NO**
    a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
13. I slapped my partner or pulled my partner's hair. **YES / NO**
14. My partner slapped me or pulled my hair. **YES / NO**
    a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
15. I threatened to hurt my partner. **YES / NO**
16. My partner threatened to hurt me. **YES / NO**
    a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
17. I offered a solution that I thought would satisfy us both. **YES / NO**
18. My partner offered a solution that he/she thought would satisfy us both. **YES /NO**
    a. If yes, please enter the initials of the romantic partner or partners you answered

"yes" for _____
19. I threatened to hit or throw something at my partner. **YES / NO**
20. My partner threatened to hit or throw something at me. **YES / NO**
   a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
21. I spread rumors about my partner. **YES / NO**
22. My partner spread rumors about me. **YES / NO**
   a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
23. I discussed the issue calmly. **YES / NO**
24. My partner discussed the issue calmly. **YES / NO**
   a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
25. I touched my partner sexually when he/she did not want me to. **YES / NO**
26. My partner touched me sexually when I did not want him/her to. **YES / NO**
   a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____
27. I forced my partner to have sex when s/he did not want to. **YES / NO**
28. My partner forced me to have sex when I did not want to. **YES / NO**
   a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for. _____
29. I put off talking until we calmed down. **YES / NO**
30. My partner put off talking until we calmed down. **YES / NO**
   a. If yes, please enter the initials of the romantic partner or partners you answered "yes" for _____

13 Interpersonal Violence Events from UCLA, ACES, CADRI, and Peer Victimization Questionnaires

Child maltreatment:

1. Being hit, punched, or kicked very hard at home (DO NOT INCLUDE ordinary fights between brothers & sisters).

2. Having an adult or someone much older touch your private sexual body parts when you did not want them to.

3. Having a parent or other adult in the household often or very often swear at you, insult you, put you down, or humiliate you or acting in a way that made you afraid that you might be physically hurt?

4. Often or very often feeling that no one in your family loved you or thought you were important or special? Or feeling like your family didn't look out for each other, feel close to each other, or support each other?

Family Violence:

5. Seeing a family member being hit, punched or kicked very hard at home (DO NOT INCLUDE ordinary fights between brothers & sisters)? Or living with grown ups who yell at each other?

Community Violence:

6. Seeing someone in your town being beaten up, shot at or killed.

7. Seeing a dead body in your town (do not include funerals).

8. Hearing guns being shots?

9. Seeing someone arrested?

10. Being beaten up, shot at, or threatened to be hurt badly in your town.

11. Hearing about the violent death or serious injury of a loved one.

Peer Victimization:

12. Peer victimization:

    a. Has another kid said mean things, like making fun of you OR calling you mean or hurtful names? OR

    b. Tried to hurt you in your relationships with others or damage your reputation, like ignoring you; excluding you from a group; leaving you out of things on purpose; telling lies or spreading rumors about your; OR trying to make others not like you? OR

    c. Were mean or hurtful in a sexual way, like making unwelcome sexual comments, jokes, or gestures; calling you gay or lesbian in a negative way; touching you sexually or exposing themselves to you when you did not want them to; OR showing you sexy or sexual pictures that you didn't want to see. OR

    d. Tried to hurt you physically, like hitting, kicking, pushing, OR shoving you. OR

    e. Stole or damaged your property on purpose OR even tried to do that.

Dating Aggression:

13. Dating aggression:

    a. My partner insulted me with put-downs. OR

    b. My partner said things to my partner's friends about my partner to try and turn them against him/her. OR

    c. My partner kicked, hit, or punched me. OR

    d. My partner slapped me or pulled my hair. OR

    e. My partner threatened to hurt me. OR

    f. My partner threatened to hit or throw something at me. OR

g. My partner spread rumors about me. OR

h. My partner touched me sexually when I did not want them to. OR

i. My partner forced me to have sex when I did not want to.

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ABSTRACT

USING A HOLISTIC LENS OF ADOLESCENT SEXUALITY TO UNDERSTAND THE ONSET OF GIRLS' SEXTING

by

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Major: Psychology (Clinical)

Degree: Doctor of Philosophy

Sexting, defined in this study as consensually sending or receiving sexually explicit texts, photos, or videos, is now commonplace during adolescence. Yet, research on adolescent sexting predominantly treats this behavior as risky, focusing on potential deleterious legal and mental health ramifications. This perspective is especially salient for females. Although sexting can have unintended negative consequences, a risk-centered perspective neglects the developmental contexts in which sexting emerges to obscure our ability to identify for whom and when sexting may be normative versus risky. There is a pressing need for a more holistic view of female adolescent sexuality that considers its positive and developmental features as well as its associated risks. The current study embraces this approach to shed light on sexting by examining the onset of girls' sexting among a sample of 79 urban, mostly African American (73%) youth.

Results indicated that sexting is common in adolescence, and that sexting tended to occur around the same time as genital contact behavior, but typically before sexual intercourse. Additionally, both a normative factor (the number of prior romantic and sexual partners) and a risk factor (prior IPV exposure) were marginally significant predictors of earlier onset of adolescent sexting. Lastly, most teens, regardless of their sexting status, indicated sexual agency

as the main reason that they would sext. Pressure was not a salient motivation for girls to sext. Further, of girls who had sexted, those who had sexted early (before age 16), as opposed to later, were more likely to endorse body affirmation motives. These findings provide the foundation for contextualizing sexting within normative sexual and romantic development, and provide insights as to when sexting might be considered normative versus risky. Information gained from this study can inform targeted curricula for promoting sexual health and communication.

AUTOBIOGRAPHICAL STATEMENT

Davia Beth Steinberg was born and raised in Ann Arbor, Michigan. She graduated with her Bachelor of Arts in Psychology with honors from the University of Michigan in May 2012. While an undergraduate at the University of Michigan, she worked with Dr. Sandra Graham-Bermann in the Child Violence and Trauma Laboratory, which deepened her interest in child development. This research experience, and associated mentorship, inspired her career goals in Clinical Psychology. After graduating from the University of Michigan, she worked for two years as a lab coordinator for three research studies at the University of Michigan.

Davia moved to Detroit to study Clinical Psychology at Wayne State University in 2014. She completed her Masters of Arts in Clinical psychology in 2016 under the mentorship of Dr. Valerie Simon. For her master's thesis, she explored engagement in organized activities and hobbies as a protective factor for at-risk youth. Clinically, she developed her skills in therapy and assessment at the Wayne State Psychology Clinic, The Children's Center, and the Children's Hospital of Michigan, specializing in work with children and families. With funding from the International Society for the Study of Women's Sexual Health, Blue Cross Blue Shield of Michigan, and Wayne State University, she explored her research interest in female adolescents' sexting behavior for her dissertation using a longitudinal research design. Davia will complete her pre-doctoral internship at the University of Michigan Center for the Child and Family, an outpatient mental health clinic that is part of the Mary A. Rackham Institute, in August 2020.