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Online Risks, Sexual Behaviors, And Mobile Technology Use In Early Adolescent Children: Parental Awareness, Protective Practices, And Mediation

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ONLINE RISKS, SEXUAL BEHAVIORS, AND MOBILE TECHNOLOGY USE IN EARLY ADOLESCENT CHILDREN: PARENTAL AWARENESS, PROTECTIVE PRACTICES, AND MEDIATION

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DEDICATION

This dissertation is dedicated to my family. This would not have been possible without your continuous support. Wayne, my husband, you taught me perseverance and the meaning of love. Selah, my cheerleader. My beautiful daughter, you will never know how much it meant to have you cheering me on through the difficult times. Mom, thank you for being that bright beacon of hope lighting my path. David, my stepdad. You opened your doors and your heart to me. Thank you.

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ABSTRACT

Mobile technologies (e.g., smartphones and associated social media accessed through downloadable mobile applications) have changed the social landscape of adolescent communication. Intertwined with this communication are risks, many of which are sexual. Evidence suggests online risks associated with mobile technology use can be mitigated by (a) parental awareness of online activities; (b) protective practices regarding content and contacts; and (c) mediation aimed at regulating access and use. Prior research on mobile technology use and associated risks in adolescent children focused on exposure to pornography, sexting, online victimization, and associated negative health outcomes. Parental awareness, protective practices, and mediation have also been studied. However, there is limited research that examines parenting practices in the context of *early adolescence* (ages 11 to 14 years) and from a parental perspective.

This exploratory descriptive study, conducted in two phases, utilized a concurrent, mixed method design to address three specific aims. Phase I (a) examined parents' level of awareness of early adolescent engagement in online behaviors and sexual risks via diverse technologies, and (b) explored parental protective practices aimed at mitigating online risks via smartphones, social media, and mobile applications among early adolescents ages 11 to 14 years; Fifteen English-speaking parents in North and South Carolina participated in interviews and 102 English-speaking parents in North and South Carolina completed online or paper-based surveys. In Phase II, select Phase I participants engaged in follow-up in-depth interviews designed to identify strategies that

nursing professionals could use to counsel parents in addressing salient concerns identified in Phase I. Data analysis included (a) thematic analysis of transcribed interview data, and (b) descriptive analysis of surveys via REDCap statistical tools and IBM SPSS Statistics Version 22.

Findings highlighted parental perceptions of online risks (i.e. pornography and contact with strangers) and mediation practices (e.g. talking about online risks and restricting content and access) associated with early adolescent smartphone and social media use and revealed that parents wanted more support from nurses. Future research should focus on developing parental educational programs and screening tools for nurses to address mobile technology use and associated risks, both of which may ultimately be an important factor in better health outcomes in early adolescent children.

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LIST OF SYMBOLS

n Sample size.

%   Percent.

LIST OF ABBREVIATIONS

Apps .... Applications

CDC .... Centers for Disease Control and Prevention

STI.. Sexually Transmitted Infection

CHAPTER 1

INTRODUCTION

Mobile technologies have changed the social landscape of adolescent communication, as social interaction now occurs within a culture of instant connectivity and mobility. Central to this communication is smartphones, or mobile communication devices that allow for internet access (Cha & Seo, 2018). Smartphones can be used to access social media platforms, or websites that allow social interaction (O'Keeffe & Clarke-Pearson, 2011), and this access is often through mobile applications (apps) which are downloadable software installed on smartphones (Federal Trade Commission, 2011). Intertwined with this mobility are physical and social risks that may begin in early adolescence, defined as ages 11 to 14 years (Hardin & Hackell, 2017). Parental awareness of online risks, protective practices online regarding content and contacts, and mediation to regulate access and usage can mitigate risks associated with mobile technology use. Nursing professionals can provide support through education, skill-building, and clinical practice approaches tailored to parents and early adolescent children.

Current evidence has focused on adolescent mobile technology risks from a broad perspective of varying developmental levels in the same study. Kachur and associates (2013) investigated technology use with adolescents 12 to 17 years of age; there was an association between utilization of technology (i.e., social networking sites and mobile applications) and risks for HIV, STIs, and pregnancy. Sevcikova and Daneback (2014)

found that adolescents volitionally view explicit sexual content on these devices and platforms, and Livingstone and Smith (2014) examined unintentional exposures through misleadingly named websites or pop-up links embedded on webpages that redirect the user to another website. Brown and Bobkowski (2011) found that by age 14, 66% of males and 39% of females have viewed sexually explicit content online, which includes images or videos of genitals or sex acts. Consumption of online pornography is associated with sexual activity, early sexual debut, unprotected sex, multiple sex partners, teen pregnancy, and sexually transmitted infections (American College of Obstetricians and Gynecologists, 2016; Collins et al., 2017).

Adolescents may also send sexual content via text, which is colloquially called a *sext*. *Sexting* refers to the sending, receiving, or forwarding of nude or seminude images, as well as sexual messages. Thirty-nine percent of adolescents reported sending a sext and 48% had received a sext (Kachur et al., 2013). Temple and Choi (2014) noted that adolescents who sext have more than seven times the odds of having ever had sexual intercourse and are 1.32 times more likely to be sexually active than those who do not sext. According to Bass (2016), sexting is associated with sexual activity, concurrent sex partners, unprotected sex, and increased number of sex partners.

Sex-related mobile technology use also is associated with online victimization. Whittle and colleagues (2013) found that predatory behaviors, online sexual encounters, sex talk, and solicitation for sexual images and sex acts are associated with mobile technology use. Say and associates (2015) noted the association between interaction on social media platforms and online sexual victimization. Furthermore, Wurtele and Kenny (2016) suggested that adolescent sexual solicitation online may lead to requests for

offline meetings. There is evidence of the association between social media use and exposure to sexually explicit content (Sevcikova, Simon, Daneback, & Kvapilík, 2015), sexual activity, STIs, and multiple sex partners (Cookingham & Ryan, 2015). Despite evidence that mobile technology use poses risks to adolescents, use of these devices and platforms is strong. Nearly 75% of adolescents have access to smartphones, 71% communicate via social media platforms, and 38% have downloaded mobile apps to their phone (Kachur et al., 2013; Lenhart, 2015).

Parents are concerned about mobile technology use (Doh, Rhim, & Lee, 2016) and inappropriate online content (Stanley, Vaterlaus, Tulane, & Beckert, 2017), but regulating these devices and platforms can be problematic. Parental awareness of online risks has resulted in protective practices and mediation; parents check internet histories, review messages, collaboratively view content, control access and content, provide direct oversight of online activities, and communicate with adolescents about online risks (Anderson, 2016; Nikken & Opree, 2018). However, according to Livingstone and Smith (2014), smartphones encourage unsupervised activities online that can be inaccessible to parental oversight. Mullen and Hamilton (2016) noted that messaging apps are more difficult to track. Bass (2016) found that many have self-destructing capabilities in which uploaded content disappears; self-destructing apps often contain explicit sexual content and age limits are loosely enforced. Symons and associates (2017) suggested gender-specific parental mediation practices, as mothers are primarily involved with adolescent mobile technology use.

The existing research is limited to both scope and methods but does provide evidence that early adolescent children are at risk for online sexual risks associated with

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mobile technology use. Approximately 69% of early adolescent children use smartphones and 65% communicate on social media platforms (Kachur et al., 2013). Although there are minimum age requirements of 13 years on many websites and social media platforms, 15% of those online are 12 years old or younger (Bass, 2016; Herring & Kapidzic, 2015; O'Keeffe & Clarke-Pearson, 2011). According to Dowell, Burgess, and Cavanaugh (2009), early adolescent children chat with strangers online and seek out pornography sites. Bass (2016) suggested that 20% have received a sext, and 5% have sent a sext (Bass, 2016). Exposure to explicit sexual content and sexting in early adolescent children is associated with sexual initiation, unwanted sex, STIs, and teen pregnancy (Bass, 2016; Parkes, Wight, Hunt, Henderson, & Sargent, 2013).

Sexual risks associated with mobile technology use in early adolescent children are a public health priority and an under-developed area of nursing research. Research aimed at mitigating risks is important, given the potential negative health outcomes associated with mobile technology use. A better understanding of this complex phenomenon is foundational to development of interventions tailored to the needs of both parents and early adolescent children.

Research Aims and Questions

The specific aims of this research were to:

1. Examine parents' level of awareness of early adolescent engagement in online behaviors and sexual risks via diverse technologies.

2. Explore parental protective practices aimed at mitigating online risks via smartphones, social media, and mobile applications among early adolescents ages 11 to 14 years.

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3. Engage parents of early adolescents in identifying strategies that nursing professionals can use to counsel parents in addressing the concerns identified in Aims 1 & 2.

The specific research questions were:

- What is the level of parental awareness regarding early adolescent access to and/or participation in sexual behaviors via smartphones, social media, and mobile applications?

- What protective practices do parents utilize in relation to early adolescents' online behaviors and risks?

- What internet mediation practices do parents of early adolescent children utilize?

- What are the associations between parental gender and parental protective practices?

- What are strategies that nursing professionals can use to counsel parents regarding risks associated with mobile technology use?

This exploratory descriptive study, conducted in two phases, utilized a concurrent mixed method design (Guetterman, Fetters & Creswell, 2015). Data were collected through in-person interviews and survey questionnaires with parents of early adolescent children ages 11 to 14 years. Recruitment to participate in the survey involved academic and community leaders in North and South Carolina who forwarded an informational email that included an invitation to participate in the research, the purpose of the survey, the researcher's contact information, and a REDCap link to the survey.

The first phase included qualitative, semi-structured interviews in-person or over the phone with English-speaking parents of early adolescent children ages 11 to 14 years

to address aim 1. Concurrently, surveys on smartphone mediation practices with early adolescent children were collected from parents (aim 2) via email link to an anonymous REDCap online survey, a secure web application for building and managing online surveys from a web browser (Arnold School of Public Health, 2017). To enhance diversity in data collection, paper-based surveys were also administered face-to-face with parents of early adolescent children in malls in North Carolina. Paper-based survey results were manually entered into REDCap. Guided by an interview schedule developed using aggregated data from Phase I interviews and surveys, Phase II included follow-up phone interviews with five parents from the qualitative portion of Phase I (aim 3) to identify strategies that nursing professionals could use to counsel parents in addressing salient concerns identified in Phase I.

Data analysis of the parental interviews involved a six-step thematic analysis approach (Braun & Clark, 2006); phases of thematic analysis include (a) familiarizing yourself with the data, (b) generating initial codes, (c) searching for themes, (d) reviewing themes, (e) defining and naming themes, and (f) producing the report. Descriptive analysis was conducted on surveys using the REDCap statistical tools and IBM SPSS statistics Version 22. Findings were formatted as two manuscripts.

Protection of Human Subjects and Research IRB Approval

To ensure the protection of human subjects, this research was approved by the University of South Carolina Institutional Review Board (Appendix D). This research was submitted for expedited review, as there were no more than minimal risks to human subjects (University of South Carolina, 2018). The review included the following sections: (a) specific aims, (b) background and significance, (c) research design and

methods and data analysis, (d) protection of human subjects, (d) recruitment plan, (f) voluntary consent of subjects, (g) potential benefits and risks, (h) compensation, (i) confidentiality, and (j) voluntary withdrawal.

All records were maintained in accordance with IRB protocol which included IRB approved participant invitation letters to voluntarily participate and consent forms, audio recordings, and participant correspondence. Privacy was protected for all participants and data was de-identified; online surveys were anonymous, and paper-based surveys were confidential with names omitted. Interviews were confidential, and participants were assigned pseudonyms during transcription. All audio recordings and paper-based surveys were locked in a file cabinet in my office. I continuously monitored for unexpected and adverse events, defined as any untoward or unfavorable medical or psychological occurrence in human subject (University of South Carolina, 2018).

The following chapters include three manuscripts that have been prepared for journal submission. Chapter 2, submitted to the *Journal of Adolescence*, presents the current state of the science regarding mobile technology use and sexual behaviors and risks online in adolescent children; implications for early adolescent children and parental awareness and protective practices is included. This evidence highlighted the need for further research, as most research pertains to the broad population of adolescents, and research incorporating parents is limited. Chapter 3, prepared for the *Journal of Pediatric Nursing*, examines parental mediation of early adolescent use of smartphones, social media platforms, and mobile applications. In this manuscript, parents performed mediation practices to regulate early adolescent online access and use via mobile technologies. Chapter 4, a manuscript targeted for the *Journal of Adolescence*, examines

parental perceptions of awareness levels regarding early adolescent behaviors and sexual risks online via mobile technologies. In this manuscript, parents increased awareness of risks through communication and online protective practices and identified nursing support as an important factor in risk mitigation. Chapter 5 discusses conclusions and recommendations, including implications for nursing research, education, and practice, and directions for future research.

CHAPTER 2

THE ROLE OF PARENTAL ENGAGEMENT WITHIN THE CONTEXT

OF ADOLESCENT SEXUAL BEHAVIORS AND RISKS ONLINE: A

SCOPING REVIEW[1]

As presented in Chapter 1, there are risks associated with mobile technology use, many of which are sexual, and parental awareness and protective practices can mitigate risks in early adolescent children. As such, a scoping review was conducted to ascertain the state of the science on this phenomenon. In this review, parental awareness and protective practices were identified as actions of parental engagement or involvement. Most research on this phenomenon pertained to adolescents with varying developmental levels. Thus, a broad approach with adolescents was taken, as early adolescent children were often included in the same study.

Sexual development is a normative task during adolescence (Beyers, Veryser, & Verlee, 2015). However, adolescent engagement in sexual behaviors may involve physical, emotional, and social risks. Adolescent sexual behaviors may occur online via computers or other connected devices and platforms such as smartphones, social media, and mobile applications (apps). These sexual behaviors can have intentional and non-intentional consequences. As such, adolescent participation with these mobile technologies can result in viewing of pornography (Brown & Bobkowski, 2011), sending, receiving, or forwarding nude or semi-nude images, or sexting (Kachur et al., 2013), and sexual solicitation (Whittle, Hamilton-Giachritsis, Beech, & Collings, 2013), all of which can result in sexual activity (Luder et al., 2011; Temple & Choi 2016; Whittle et al., 2013). Multiple factors contribute to these sexual behaviors and risks such as developmental level (Kachur et al., 2013), peers (Cookingham & Ryan, 2016), and cultural sexual expectations (Hatchel & Subrahmanyam, 2015).

Despite potential risks to adolescents online, parental engagement through awareness (Bass, 2016) and protective practices (Anderson, 2016) may be a mitigating

factor. As such, this scoping review examines online sexual behaviors and risks impacting adolescents as well as the role parental engagement may play in mitigating these risks. The goal of this scoping review is to examine the state of the science concerning these issues.

Arksey and O'Malley's (2005) framework guided this scoping review utilizing a five-stage approach to (a) identify the research question; (b) identify relevant studies; (c) select the studies; (d) chart the data; and (e) collate, summarize and report the results. The focus of this review was to answer the following question: What are key concepts and gaps in evidence pertaining to parental engagement within the context of adolescent sexual behaviors and risks online?

To answer this research question, relevant studies are selected from electronic databases of PubMed, PsychINFO, Web of Science, CINAHL Complete, Communication & Mass Media Complete, and Google Scholar. Search years include 2010 to 2017. Inclusion criteria are adolescents 6 to 18 years of age due to broad age ranges within studies. Additional criteria include parental engagement, parental involvement, smartphones, social media, mobile applications, live streaming, Snapchat, Periscope, embedded links, and friendship groups, with and without the added search term of sex. The database searches resulted in 933 articles. After review of each title for relevance, 808 citations were excluded, as they did not meet inclusion criteria. Examination of the abstracts of the remaining 125 articles resulted in 52 articles suitable for this review. All studies are reviewed, categorized, and summarized, including authors and key concepts, using a uniform approach to chart the data (Arksey & O'Malley, 2005). Synthesis and interpretation emphasize key concepts. Results are organized and presented below.

Results

Results indicate that parental engagement involves awareness of potential risks associated with adolescent online activities, factors that contribute to these risks, and actions, or practices, aimed at mitigating these risks. Parental actions to mitigate risks include relational and protective practices; relational practices refer to reciprocal social interaction between two or more individuals ("Relation," n.d.). A potential moderating factor of parental engagement and contributory factor of adolescent sexual behaviors and risks online is gender.

Parental Awareness and Adolescent Online Risks

Awareness is an antecedent to parental engagement regarding adolescent sexual behaviors and risks online. According to researchers, adolescent online communication and access involves potential risks related to adolescent relationships, explicit sexual content, sexual victimization online, and sexual activity. Thus, parental engagement begins with an understanding, or awareness, of these potential risks. The following sections include a review of adolescent online risks.

Adolescent online communication results in relational risks. Approximately 93% of adolescents ages 12 to 17 are online (Kachur et al., 2013). They initiate friendships and chat with friends online; they also communicate with strangers (Bonetti, Campbell, & Gilmore, 2010; Brown & Bobkowski, 2011). This communication results in privacy risks. Madden and associates (2013) stated that posts often include adolescents' name (92%), birthdate (82%), photos of themselves (91%), school name (71%), where they live (71%), mobile phone number (20%), and videos of themselves (24%). This content is used by online stalkers, and posts largely remain permanent and searchable via digital

footprint (Cookingham & Ryan, 2016; Herring & Kapidzic, 2015; Rafla, Carson, & DeJong, 2014; Yardi & Bruckman, 2011).

Relational risks associated with adolescent online communication can lead to exposure to sexually explicit content. Online, adolescents are exposed to pornography, or depictions of genitals and/or sexual intercourse (Brown & Bobkowski, 2011). Much is unintentional, as exposures often occur via misleading websites or pop-ups that redirect users to another site (Livingstone and Smith, 2014). By age 14, 66% of males and 39% of females have viewed sexually explicit content; exposure can result in permissive sexual norms and increased risk of sexual intercourse, and heavier exposure increases the risk (Brown & Bobkowski, 2011).

Explicit sexual content is associated with predatory behaviors and online sexual victimization. Adolescents communicate about sex with strangers online (Cookingham & Ryan, 2016). As such, adult offenders engage in online grooming to lure adolescents into online or offline sexual encounters (Whittle et al., 2013). Victimization frequently occurs on social media, and sexually explicit images are often recorded and disseminated (Say, Babadagi, Karabekiroglu, Yuce, & Akbas, 2015).

Adolescent Online Relational Practices

Online risks are due, in part, to relational practices among adolescents. Evidence suggests that relational practices online include social mores and dating. Adolescents engage in online relational practices via smartphones, social media, and mobile applications, which increase potential for sexual behaviors and risks online.

Adolescent online communication involves social mores. Social mores include customs, values, and behaviors accepted by a group (*Merriam-Webster's online*

dictionary, n.d.). Online, adolescents have unwritten but widely understood rules that carry deeper meanings such emoji symbols; they also friend, connect, and comment on others' posts (Pew Research Center, 2015). Friending and connecting is the ability to choose someone to connect with online (Ouwerkerk & Johnson, 2016).

Social mores extend to online dating practices. Adolescents seek out, maintain, and end relationships and explore dating online (Sadhir, Stockburger, & Omar, 2016). According to researchers at Pew Research Center (2015), communication with romantic interests occurs through texting (72%), instant messaging (29%), social media (21%), messaging apps (20%), and video chat (12%). Twenty four percent have dated someone they met online (Pujazon-Zazik & Park, 2010).

Much adolescent online communication occurs via smartphones. Nearly 75% of adolescents have access to a smartphone (Lenhart, 2015). Adolescents often use smartphones to communicate on social media platforms, which are websites that allow social interaction (O'Keeffe & Clarke-Pearson, 2011). Approximately 89% of adolescents ages 14 to 17 years and 65% ages 12 to 13 years are on social media (Kachur et al., 2013); 84% have three to seven different social media accounts (Mullen & Hamilton, 2016).

Social media use results in adolescent sexual risks. Social media use is associated with sexual exploration, STIs, and multiple sex partners in adolescence (Cookingham & Ryan, 2016) as well as online sexual victimization (Say et al., 2015). Social media use also results in exposure to sexually explicit content via embedded links that redirect adolescents to websites or videos that contain nudity or sex acts (Sevcikova, Simon, Daneback, & Kvapilík, 2015).

Adolescents access social media through mobile apps, which are downloadable software that can be installed on smartphones and linked to social media (Federal Trade Commission, 2011). Approximately 38% have downloaded apps to their smartphone (Kachur et al., 2013). Mobile apps can contain inappropriate content (Federal Trade Commission, 2011). There are also a multitude of ways to hide activities, as many now offer live-streaming capabilities. Periscope, Facebook, and Snapchat are but a few; self-destructing content disappears after approximately 30 seconds (Bass, 2016). However, this content may not be permanently erased. These messages can be screenshot captured and saved (Biersdorfer, 2017). Self-destructing apps often contain explicit sexual content, age limits are loosely enforced, and images can remain online forever (Bass, 2016).

Adolescent Online Sexual Practices

Researchers suggest that adolescents engage in sexual practices as they build relationships online. These practices include sexual self-presentation and sexting. Adolescents use sexy photographs online to attract potential partners or get attention, often on social media (Fischer, 2016; Herring & Kapidzic, 2015). Adolescent online self-presentations are portrayed through clothing, physical poses, facial expressions, or nudity, and images can be subtle or explicit (Bobkowski, Shafer, & Ortiz, 2016).

Sexual self-presentation can advance to more explicit sexual behaviors online such as sexting. Thirty nine percent of adolescents ages 13 to 19 report sending sexually suggestive messages and 48% have received these messages (Kachur et al., 2013). Factors that reportedly contribute to sexting include peer pressure, seeking attention,

initiation of sexual activity, and coercion; 70% of sext requests come from a romantic interest, 20% from a friend, and 10% from threats or blackmail (Bass, 2016).

Sexting can have serious social consequences. Adolescents are often unaware of how quickly images can be distributed online (O'Keeffe & Clarke-Pearson, 2011). Adolescent nude pictures or videos are often swapped around school without consent; sharing these images is a crime, even when voluntarily shared between two minors, and can result in child pornography charges and registering as a sex offender (Bass, 2016). These images leave digital footprints that can remain online indefinitely and impact reputations and future opportunities (Bass, 2016; O'Keeffe & Clarke-Pearson, 2011). The spread of these images can result in shame, social exclusion, anxiety, depression, and suicide as well as drug and alcohol use (Bass, 2016; Hatchel & Subrahmanyam, 2016; Morelli, Bianchi, Pezzuti, & Chirumbolo, 2016).

Social consequences of sexting include sexual activity. Adolescents who sext have more than seven times the odds of having ever had sexual intercourse and are 1.32 times more likely to be sexually active than those who do not sext (Temple & Choi 2016). Sexting is associated with unprotected sex, sex after drinking and drug use, oral sex, and increased number of sex partners (Bass, 2016).

Factors Contributing to Adolescent Behaviors and Risks Online

Peers and perceived cultural mores may contribute to adolescents' online behaviors. Friends are a driving force behind online communication among adolescents (Davis, 2013), as social media has become the virtual location where adolescents hang out with peers (Rafla et al., 2014). Thus, peers have a strong influence on adolescent relational and sexual practices online. With the aim of obtaining peer approval and

validation, adolescents may do things online that they normally would not do to obtain public approval and validation from others (Bass, 2016). In the competition for attention online, adolescents may repeat bold and daring behavior when socially rewarded (Cookingham & Ryan, 2016). Thus, peers influence attitudes, norms, and behaviors, including online sexual behaviors (Sasson & Mesch, 2016). As such, beliefs about approval and behavior among peers influence these behaviors; adolescents who perceive that their friends are sexting are likely to engage in these behaviors as well (Baumgartner, Valkenburg, & Peter, 2011). Adolescent perceptions, expectations, and scripts concerning romance, love, and sexuality are developed, in part, through cultural models and contexts (Hatchel & Subrahmanyam, 2016). For example, sexiness online is encouraged and rewarded (Daniels & Zurbriggen, 2016), and celebrities' sexual behaviors may result in increased fame and popularity rather than humiliation and ruined reputations (Bass, 2016).

Adolescent relational and sexual practices extend to early adolescents. Despite minimum age requirements of 13 years on many social media sites, preadolescent presence has increased; some falsify their age to gain access (O'Keeffe & Clarke-Pearson, 2011). Among adolescents ages 12-13 years, 89% post their real name, 82% post photos of themselves, 25% post videos of themselves, 79% provide their birthdate, 67% post where they live, 56% post school name, and 11% provide cell phone numbers (Pew Research Center, 2013). Moreover, 20% report receiving a sext and 5% have sent a sext (Bass, 2016).

Parental Protective Practices

Factors that contribute to adolescent online risks can be mitigated by parental protective practices. Parents' relationships with adolescents and their peer-related friendship groups and practices such as monitoring of online activities and restrictions on access and content can enhance protection and control online behaviors. Although effective, these practices are affected by parenting style and challenges to oversight. Parental oversight is hindered by parental technology skills, remote access, and deceptive adolescent practices.

Parents influence adolescents relationally through education regarding online risks, active participation in online activities, and modeling of appropriate behavior (Rafla et al., 2014). Parental relational practices extend beyond adolescent children to adolescent friendship groups. Adolescents are influenced by a broader network of adults outside of their immediate family (Ragan, Osgood, & Feinberg, 2014). Parents act as mentors to friends of their adolescent children (Shakya, Christakis, & Fowler, 2012) and directly and indirectly exert social control over these friends (Ragan et al., 2014). Adolescents' friends are influenced by parental knowledge and behaviors (Rulison, Feinberg, Gest, & Osgood, 2015), and enhanced protection through awareness of adolescents' activities (Cleveland, Feinberg, Osgood, & Moody, 2012). Moreover, parental involvement online can deter predatory grooming (Whittle et al., 2013).

Researchers suggest that relational practices are supported by online restrictions and monitoring of online activities. Parental monitoring is defined as attention to and tracking of activities and whereabouts of the adolescent (Cleveland et al., 2012). Parents "friend" adolescents on social media to gain account access (Mullen & Hamilton, 2016,

p. 165). Protective practices may include monitoring emails and social media use, installing online tracking software on devices, setting limits on access to mobile phones and time spent online, and restricting devices to specific locations such as common areas (Bass, 2016). Parents also leverage smartphones and online privileges as discipline (Yardi & Bruckman, 2011). Sixty Five percent of parents have digitally grounded their adolescent (Pew Research Center, 2016). In a survey of 1,637 parents of adolescents ages 13 to 17 years, 60% reported checking adolescent websites and social media profiles, 48% reviewed adolescents' messages, 39% used parental controls such as filters, and 40% talked with adolescents about online content (Anderson, 2016). This oversight is important, as parental rules online can mitigate risks for real-life meetings with online contacts (Van den Heuvel, Van den Eijnden, Van Rooij, & Van de Mheen, 2012).

Despite the evidence that parental monitoring can mitigate online risks, this data indicate that many adolescents are online without parental oversight. According to Leung and Lee (2016), many parents pose few rules and exert little control or supervision over adolescent online activities (Leung & Lee, 2016). This may have serious implications, as unmonitored online activities increase risk for adolescent exposure to pornography and sexual predators (Pujazon-Zazik & Park, 2010), and lack of parental involvement is a risk for online grooming (Whittle et al., 2013).

Evidence suggests that parenting style influences restrictive and monitoring practices. Parenting style refers to involvement and strictness used by the parent regarding the adolescent (Lau & Yuen, 2013; Yardi & Bruckman, 2011). Valcke, Bonte, De Wever, and Rots (2010) identified four types of parent styles; Parents with a *permissive* style do not provide explicit boundaries, those who practice *Laissez-faire* style

have low levels of control and involvement, parents adopting an *authoritative* style have clear rules and expectations that adolescents will act in a responsible and self-regulated way, and parents with an *authoritarian* style expect adolescents will follow rules without explanation through unconditional obedience; an authoritative parenting style with clear rules and expectations is considered more effective.

Despite evidence that protective practices mitigate adolescent online sexual risks, many parents find it challenging. Parents may not be aware of online access without their knowledge such as at school, and adolescents often look for ways to circumvent rules (Len-Rios, Hughes, McKee, & Young, 2016; Yardi & Bruckman, 2011). Furthermore, parents' level of online knowledge and expertise may be lower than that of their adolescent children (Leung & Lee, 2016), and they may underestimate risks. There is evidence that some parents falsify their adolescents' ages to facilitate access to social media (O'Keeffe & Clarke-Pearson, 2011).

Deceptive practices of adolescent children can further hinder parental protective practices. Technology-savvy adolescents go to great lengths to avoid parental presence on social media, and mobile technologies may further facilitate these practices (Mullen & Hamilton, 2016). Mobile technologies such as smartphones, social media, and mobile applications allow adolescents to disenable notifications, delete texts, and hide search histories, contacts, photos, and mobile apps (Hamilton, 2015). Deceptive practices increase sexual risks, as online predators prey on adolescents who hide social media use from parents (Bass, 2016).

The proliferation of adolescents' access to smartphones further amplifies these challenges. Access to smartphones may encourage unsupervised activities online which

can be inaccessible to parental oversight (Livingstone & Smith, 2014). Mobile apps use further challenges parental practices. With apps, adolescent online activities are more difficult to track, and they can circumvent data plans; apps may not show up on phone bills or have message limits or fees (Barth, 2015; Bass, 2016; Mullen & Hamilton, 2016).

Parents' knowledge of and ability to effectively access and utilize information technology may impact their ability to mitigate risks effectively. Given the online generational divide, many adolescents have more advanced technology skills than their parents (Rafla et al., 2014; Valcke et al., 2010). Adolescents with better technology skills have emancipated themselves from parental authority online, essentially shifting power relations (Yardi & Bruckman, 2011).

Gender Differences in Adolescent Online Behaviors and Parental Practices

Researchers suggest that adolescents' online behaviors and sexual risks and parental protective practices are gender-specific. Female adolescents use social media more than adolescent males and are more likely to use smartphones to instant message and text (Frison & Eggermont, 2016; Herring & Kapidzic, 2015; Pujazon-Zazik & Park, 2010). Female adolescents are more likely to post sexualized pictures (Daniels & Zurbriggen, 2016), sext (Sadhir et al., 2016), experience unwelcome sexual solicitation (Herring & Kapidzic, 2015), and receive unsolicited explicit sexual content (Sevcikova et al., 2015). Compared to adolescent boys, girls experience more pressure or coercion to sext, and recipients may have the intent to blackmail the sender with these sexual images (Choi, Ouytsel, & Temple, 2016).

In contrast, adolescent males disclose personal information and location and talk explicitly about sex (Herring & Kapidzic, 2015; Sasson & Mesch, 2016). They collect

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sexting images of females (Walrave et al., 2015) and may use smartphones to record and share images of themselves performing sexual acts (Bobkowski et al., 2016). Researchers also suggest that parental protective practices are gender-specific, given that mothers are more likely to discuss appropriate online content with adolescents (Pew Research Center, 2015; Valcke et al., 2010). There is also evidence that mothers tend to employ mediation practices, directed primarily toward girls (Nikken & Jansz, 2013).

Discussions and Conclusions

Intentionally or not, adolescents may participate in online communication that may result in exposure to sexually explicit content, sexting, and online victimization. These risks may, in turn, contribute to engagement in sexual activity, which may result in negative health outcomes of STIs, and/or teen pregnancy. Given that even early adolescent children are engaging with these technologies, they also face these potential risks. Parental engagement within the context of adolescent sexual behaviors online includes parental awareness of adolescent risks and contributing factors as well as parental relational and protective practices. Parental relationships with adolescent children and their friendship groups and online monitoring and restrictive practices can mitigate risks of online exposure to sexual content and contact with others online that can lead to victimization.

Findings indicate that adolescent behaviors and parental protective practices are gender-specific. Adolescent girls are more likely to communicate on social media, sext, and experience online victimization, and mothers tend to address online activities and content. Peers, cultural mores, and mobile technologies may increase vulnerability among adolescents. Parental engagement through relational and protective practices

mitigates these risks. However, adolescent remote access, smartphones and mobile apps, and limited parental technology skills may hinder risk mitigation. This review of existing research indicates increased parental awareness of and engagement with online risks may increase or enhance protective practices that can mitigate such risks.

Limitations and Future Directions

This review has several limitations. Given the specific timeframe (2010 to 2017), conceptual antecedents of this phenomenon may not have been identified. There is also a paucity of evidence on early adolescent children which limits developmental perspective (Bass, 2016; O'Keeffe & Clarke-Pearson, 2011; Temple & Choi, 2016). Despite these potential limitations, this review advances knowledge in adolescent health and provides insight into future directions of research.

Given the evidence that adolescent girls communicate more online and may experience more risks, further research on gender-specific risks and specific devices and platforms that may contribute to these risks online is needed. Research on gender-specific parental practices to address these risks is also recommended, as this review indicates more involvement with mothers. Furthermore, research investigating early adolescent use of these devices and platforms and associated risks and sexual behaviors as well as parental awareness of these risks and behaviors is warranted.

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CHAPTER 3

MOBILE TECHNOLOGY USE IN EARLY ADOLESCENT CHILDREN

AND PARENTAL MEDIATION ONLINE[2]

Communication, once firmly rooted in conventional technologies such as telephones and desktop computers, is now a landscape of mobile devices and platforms that make it possible for interaction with others anytime and anywhere. Mobile technologies (i.e., smartphones and social media platforms, often accessed through downloadable mobile applications) are intertwined with adolescent communication, entertainment, and social interaction. This can result in online risks. Adolescents view sexual content on mobile devices (Brown & Bobkowski, 2011) which is associated with negative health outcomes (Parkes, Wight, Hunt, Henderson, & Sargent, 2013). They also risk exposure to online sexual victimization (Chassiakos, Radesky, Christakis, Moreno, & Cross, 2016).

Mobile technology use and associated risks may begin in early adolescence (Bass, 2016), defined as ages 11 to 14 years (Hardin & Hackell, 2017). Parental mediation to regulate online activities can mitigate online risks (Nikken & Jansz, 2014). The aims of this research were to (a) explore parental protective practices aimed at mitigating online risks via smartphones, social media, and mobile applications among early adolescents ages 11 to 14 years; and (b) identify strategies that nursing professionals can use to counsel parents in addressing concerns identified in this study

Background

Mobile Technology Use and Online Risks

Mobile technologies are a prevalent means of communication among adolescents. Devices and platforms include smartphones (i.e., mobile communication devices that allow for internet access), social media platforms that allow online interaction, and mobile applications (apps) which are software programs downloaded to smartphones

(Cha & Seo, 2018; Hatchel & Subrahmanyam, 2016). Nearly 75% of adolescents use smartphones to communicate with others, 71% communicate via social media platforms, often through multiple accounts, and 38% use mobile apps (Kachur et al., 2013; Lenhart, 2015). On these devices and platforms, adolescents communicate with others instantly and privately with little adult supervision (Strassberg, McKinnon, Sustaita, & Rullo, 2013). Bentley and associates (2015) reported that adolescents use smartphones and mobile apps approximately three hours per day. Adolescents use these devices and platforms to communicate with others and access entertainment (Kachur et al., 2013).

Although most mobile technology use is for socializing and entertainment, some online activities involve sexual risks. Adolescents view explicit sexual content and have free accessibility to a wide range of sexual websites, which they often seek out deliberately (Sevcikova & Daneback, 2014). Consumption of online pornography is associated with sexual activity, unprotected sex, and multiple sex partners (American College of Obstetricians and Gynecologists, 2016) as well as earlier sexual debut, pregnancy, and sexually transmitted infections (Collins et al., 2017). Adolescents also sext (i.e., sending, receiving or forwarding of nude or seminude images); sexting is associated with unprotected sex, oral sex, and increased number of sex partners (Bass, 2016). Sexual risks also include sexual victimization online (Bass, 2016; Chassiakos et al., 2016), as adult offenders engage in predatory behaviors (Cookingham & Ryan, 2016), and lure adolescents into online and offline sexual encounters (Whittle et al., 2013). Sexual risks often occur on social media (Chassiakos et al., 2016).

An important area of concern is mobile technology use in middle school. Middle school adolescents communicate on smartphones, social media, and messaging apps (Cha

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& Seo, 2018), and viewing of explicit sexual content and sexting is often initiated in middle school (Bass, 2016). Temple and Choi (2016) reported that early exposure to explicit sexual content is associated with sexual activity, and Rice and associates (2014) found that middle school students surveyed were six times more likely to be sexually active if they sext.

Parental mediation

For parents concerned about inappropriate content (Stanley et al., 2017), adolescent smartphone usage is a social concern (Doh, Rhim, & Lee, 2016), as these technologies allow online activities without parental oversight (Charteris, Gregory, & Master, 2018). Parental mediation includes strategies designed to mitigate risks (Nikken & Jansz, 2014), and refers to practices parents use to guide and regulate media use in children (Nikken & Opree, 2018). According to Nikken and Jansz (2014), mediation practices include (a) active mediation with instructive communication and explanations; (b) restrictive mediation that exercises control over media time and content; (c) co-use, or watching together; and (d) supervision, or direct oversight of online activities.

Active mediation involves communication, the fundamental process by which parents convey knowledge, beliefs, and values to children (Jerman & Constantine, 2010). High levels of parental communication regarding online risks is associated lower levels of adolescent engagement with online pornography (Ma, Shek, & Lai (2017). In addition to communicative practices, parents may institute restrictive mediation. Thus, parents limit and control media use by enforcing rules related to time and content (Daneels & Vanwynsberghe, 2017). The extent to which parents impose rules online impacts adolescent online search behaviors (Foss et al., 2013). Thus, content and contacts are

restricted. These restrictions can improve adolescent self-regulation of media use (Doh, Rhim, & Lee, 2016).

Many parents extend mediation practices beyond communication and restrictive practices to physical presence online, or co-use. Parental authority is evident when parents are physically present and direct oversight is performed during usage (Doh, Rhim, & Lee, 2016). This may be an important strategy, as lack of parental co-use increases the chance of risky online behaviors (Notten & Nikken, 2016). Supervision and co-use are primarily applied to younger children while active and restrictive mediation are applied to older children (Nikken & Schols, 2015).

Parenting practices are influenced by parenting style, or levels of parental involvement and strictness (Lau & Yuen, 2013). Valcke, Bonte, De Wever, and Rots (2010) identified parenting styles as (a) *permissive* with boundaries that are not explicit, (b) *Laissez-faire* with low levels of control and involvement, (c) *authoritative* with clear rules and expectations that adolescents will act in a responsible and self-regulated way, and (d) *authoritarian* with expectations of unconditional obedience without explanation.

Despite evidence that mediation is effective, some parents struggle with these practices. Many parents have few rules about media usage or time spent online (Strasburger et al., 2013), possibly due to less technological skills (Stanley et al., 2017). Social media platforms can heighten issues with technology, as higher digital competency is needed (Daneels & Vanwynsberghe (2017). Parents also encounter adolescent resistance (Stanley et al., 2017), conflicts (Doh, Rhim, & Lee, 2016), and secretive online behaviors (Ahern, Kemppainen, & Thacker, 2016) when mediation practices are enforced. Other factors affecting mediation practices include lower income and

educational status (Nikken & Opree, 2018) and minority status (Ritzhaupt, Liu, Dawson, & Barron, 2013), as these factors affect access and utilization skills. Gender is also a factor, as mothers are often more involved in online activities (Symons, Ponnet, Emmery, Walrave, & Heirman, 2017). Although there has been research regarding parental mediation, evidence pertaining to parental mediation of mobile technology use with early adolescent children is limited. This exploratory descriptive study examined parental use of active mediation, restrictive mediation, co-use, and supervision with early adolescent children.

Specific Aim

The specific aim of this study was to explore parental protective practices (i.e., mediation styles) aimed at mitigating online risks via smartphones, social media, and mobile applications among early adolescents ages 11 to 14 years. The specific research question was as follows: What internet mediation practices do parents of early adolescent children utilize?

Methods

The purpose of this exploratory descriptive study was to examine generalized actions (i.e., parental mediation) that parents perform with their early adolescent children ages 11 to 14 years to guide behavior and regulate online access, contacts, and content on mobile technologies (e.g., smartphones and associated social media accessed through downloadable mobile applications). Survey questionnaires were used to examine mediation styles. To ensure the protection of human subjects, this research was approved by the University of South Carolina Institutional Review Board (Appendix D). This

research was submitted for expedited review, as there were no more than minimal risks to human subjects (University of South Carolina, 2018).

Setting

Surveys were collected from parents via anonymous email link. To enhance diversity in data collection, confidential paper-based surveys were administered face-to-face to parents of early adolescent children in food courts and shopping areas of three public malls in North Carolina over the course of three days.

Sample and Inclusion Criteria

Recruitment involved a purposive sampling of participants in North and South Carolina. Participants were English-speaking parents (e.g., mothers and fathers) of early adolescent children. In all survey invitation letters, parents of early adolescent children 11 to 14 years were asked to complete the survey separately. Community and academic leaders forwarded online written invitations that included the purpose of survey, contact information, survey link, and request to voluntarily participate to parents on their email lists. Three academic leaders in (a) a community college in North Carolina and, (b) two 4-year colleges in South Carolina and eight community leaders in North Carolina participated in online survey recruitment. These email lists resulted in snowball sampling, as parents who received the invitation and survey link forwarded it to other parents who might be interested in participation and/or posted it on social media platforms.

Instrumentation and Data Collection

Surveys utilized items from Nikken and Jansz (2014) mediation scales (α 0.75 to 0.94); Mediation styles included (a) active mediation with communicative explanations;

(b) restrictive mediation, both general and content specific, to regulate online access, behaviors, and content; (c) co-use, or collaborative surfing; and (d) supervision, or direct oversight online. Data collection was accomplished using (a) an anonymous REDCap online survey questionnaire (98, 96%), a secure web application for building and managing online surveys from a web browser (Arnold School of Public Health, 2017); and (b) paper-based confidential survey questionnaires (4, 4%). Some participants opted to omit some questions, as they did not have to answer any question they did not want to. Responses from the paper-based surveys were manually entered into the REDCap database by the primary author.

Data Analysis

Analysis identified how often parental mediation practices were performed, using a 5-point Likert scale consisting of never, seldom, sometimes, often, and very often. Likert scale responses were numerically coded as one to five, very often to never. Mediation practices included how often parents engaged in active mediation, co-use, restrictive mediation-general, restrictive mediation-content specific, and supervision (Appendix B). For analysis purposes, parental mediation practices were transformed and classified into two categories, frequently and infrequently; Very often and often were transformed to frequently and sometimes, seldom, and never were transformed to infrequently. Transformation resulted in greater ease of description (Boston University, n.d.), and enhanced comparability of Likert-scale items (He et al., 2017). The survey contained 19 Likert-scale statements for smartphone mediation practices, within five sections (Appendix B). Demographics were collected on parents and children, including a question on parenting style. Devices and social media platforms used by parents and

early adolescent children were identified using a dropdown menu and text box. Mediation practices were assessed for up to four children, described as first, second, third, and fourth child, youngest to oldest. Some questions were omitted in all categories of children. Parents did not answer most questions on third children and all questions on fourth children, so these children were not included in analysis. Data analysis was conducted using REDCap statistical tools and IBM SPSS Statistics Version 22.

Results

Sample Characteristics and Mobile Technology Use of Parents and Children

One hundred two parents participated in this survey. Sample characteristics included sex, age, marital status, income level, ethnicity, and educational level. Parental demographics are provided in Table 3.1. Parents reported demographics of children by age (Table 3.2). One question was included to examine parenting styles. Parenting styles regarding smartphone rules included (a) Laissez-faire with no rules; (b) authoritarian, or rules without explanation; and (c) authoritative with rules and an explanation of why these rules were important. Results include parental mobile devices, social media, and mobile applications. By sample size and percentage, parental mobile technology use included smartphones (101, 99%), computers (85, 83%), tablets (54, 53%), flip phones (2, 2%), Alexa Amazon digital assistant (1, 1%), and Raspberry (1, 1%). Social media and mobile applications included Facebook (83, 81%), Email (88, 86%), Instagram (47, 46%), Snapchat (25, 24%), Twitter (12, 12%), WhatsApp (5, 5%), LinkedIn (3, 3%), Music.ly (1, 1%), GroupMe (1, 1%), and Pinterest (1, 1%). In Table 3.3, parents reported early adolescent use of devices by sex and age. Social media and mobile applications

used by early adolescent children are provided in Table 3.4. Some parents omitted one or more questions in all response categories.

Mediation Practices

Mediation practices, presented as practices frequently and infrequently performed, were reported for first and second children. Table 3.5 depicts parental mediation practices. Active and restrictive mediation, both general and content-specific, were predominantly performed for first and second children. Although these practices were frequently performed, co-use and supervision practices were performed with lesser frequency.

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Discussion

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This study expanded current knowledge on parental mediation and provides insight into strategies nursing professionals can use to counsel parents in their efforts to mitigate online risks in early adolescent children, specifically in the areas of educational needs and barriers to effective mediation. Mobile technology use among early adolescent children in this study was prevalent, and online risks associated with this use concerned parents. First, parents identified specific styles of mediation practices that they use with early adolescent children regarding smartphone, social media, and mobile apps use. Active mediation, largely concerned with conversational practices, was the most frequently used mediation style among parents. Parents imparted knowledge and guidance by talking to these children about online strangers, protection of personal information, bullying online, rules and expectations online, and appropriate behavior on social networking sites and instant messaging platforms. Predominantly, parents were communicative about personal information and online conduct which is consistent with

active mediation. Consistent with current research, communication is a primary means of conveying parental expectations (Suleiman, Lin, & Constantine, 2016). Parents increase safety online by talking to their children about positive and negative aspects of media and inappropriate content (Chassiakos et al., 2016; Ma, Shek, & Lai, 2017; Sonck, Nikken & De Haan, 2013). Risks can be averted through communicative practices that explain and instruct (Nikken & Jansz, 2014).

Findings also highlighted use of authoritative parenting style with early adolescent children. Authoritative style is communicative (Shakya, Christakis, & Fowler, 2012), which suggested that these parents communicated clear rules and expectations regarding mobile technology use and expected these children to use mobile technologies in a responsible and self-regulated manner (Valcke et al., 2010). These findings suggested that communication regarding online risks had taken place, and that online autonomy had been extended to these children.

Secondly, parents engaged in restrictive mediation practices, both general and content specific. Thus, parents applied rules to online communication regarding content and time online. Predominantly, parents were concerned about how long their children used the internet. Research conducted by Nikken & Jansz (2014) supported these findings, as parents are vigilant about compulsive internet use. It is plausible that time online is a source of negotiation among parents and children, as early adolescent children may struggle with regulation.

Beyond mediation practices, gender was a factor in parental response. Despite requests for mothers and fathers to complete the survey separately, respondents were primarily female. This was not surprising, given that current evidence points to higher

involvement in mothers regarding adolescent online activities (Nikken & Jansz, 2014; Padilla-Walker & Coyne, 2011; Symons et al., 2017; Valcke et al., 2010).

Additionally, there were some mediation practices that parents performed infrequently which identified areas where early adolescents may be at risk. Co-use was infrequently performed with these children. This was unexpected, as parents usually perform mediation practices more frequently with younger children (Nikken & Jansz, 2014) and in stark contrast to Notten and Nikken (2016) who reported that co-use was very important, especially with younger children. Collaborative surfing is a common parental practice that reduces online risks with children (Nikken & Jansz, 2014). These findings are cause for concern, given that lack of co-use increases risky online behaviors (Notten and Nikken, 2016).

Along with co-use, a final unexpected finding was related to supervision. Parents were infrequently present or close to the smartphone when children web surfed. This was surprising, given that supervision is the most common style of mediation, especially with younger children (Nikken & Jansz, 2014). Furthermore, supervision and co-use are often applied, together, with younger children (Nikken & Opree, 2018). Infrequency of supervision, combined with infrequent co-use, suggested that early adolescent children may be experiencing higher levels of autonomy, perhaps beyond what their developmental level would require. With so much autonomous time online, it stands to question whether early adolescent children in this study were experiencing online risks, unbeknownst to parents.

Although much was learned regarding mediation practices among parents of early adolescent children, there were limitations within this study. Homogeneity of the sample

prevented correlations regarding sex, age, ethnicity, educational level, or family income. Furthermore, respondents were primarily educated Caucasian married females of a higher socioeconomic status, which limited insight into paternal roles and families of lower socioeconomic status and educational attainment. Thus, survey completion may have been impacted by demographic factors, as those who were less educated, as reported by Niikken and Opree (2018), and those who were of ethnic backgrounds, as reported by Ritzhaupt and associates (2013) often have less access and utilization skills. Thus, demographic factors may play an important role in mediation practices. Parents also did not answer some questions. Although this is not believed to have adversely affected results, some parents failed to provide demographic data on age and sex of children.

Nursing Implications

Much was learned in this study, specifically regarding educational needs of parents. Early adolescents require varied mediation practices to support online communication via mobile technologies. As such, smartphones, social media, and mobile apps use is associated with risks, especially for early adolescents. Parents should remain vigilant. This study identified mediation practices, both frequent and infrequent, in early adolescent children. This presents implications for nursing practice. As education is a function of nursing practice, nurses can educate parents regarding the need for ongoing communication about rules and expectations online as well as being involved in online activities with the child. Education should include guidance about online restrictions on content and use. Above all, parents need to understand the need for continued supervision of mobile devices and platforms throughout early adolescence as well as providing support to parents who may be struggling with mediation.

Conclusions

Early adolescent children use mobile technologies (i.e., smartphones, social media platforms, and downloadable mobile applications) to go online. Online risks such as exposure to explicit sexual content and contact with strangers are associated with these devices and platforms. Parental mediation can mitigate risks. Parents in this study performed active and restrictive mediation practices to regulate early adolescent online communication via mobile technologies. However, parental co-use and supervision were low. Although parents frequently communicated with early adolescent children regarding online risks and initiated restrictive practices to control online activities on smartphones, these findings indicate that early adolescent children in this study were largely autonomous online. Future research should examine parental barriers to co-use and supervision with early adolescent children.

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Table 3.1 Parental Demographics

Demographics	n (%)
Sex	
Female	82 (80)
Male	20 (20)
Age	
20-30	1 (1)
31-40	42 (42)
41-50	51 (50)
>50	7 (7)
Marital status	
Married	84 (84)
Divorced	7 (7)
Separated	4 (4)
Never married	5 (5)
Educational level	
High school graduate	15 (15)
College <4 years	25 (25)
College 4 years	23 (22)
College 5-8 years	25 (25)
College >8 years	11 (11)
I did not graduate high school	2 (2)
Family income	
< $25,000	4 (4)
$25,000-$50,000	24 (25)
$51,000-$100,000	27 (28)
>$100,000	41 (43)
Ethnicity	
African American	8 (8)
Caucasian	89 (89)
Bi-racial Caucasian/Afro-Latino	1 (1)
Unspecified	1 (1)
	1 (1)

Table 3.2 Demographics of Early Adolescent Children

First Child	n (%)	Second Child	n (%)
Sex		Sex	
Female	41 (44.1)	Female	15 (50.0)
Male	39 (41.9)	Male	9 (30.0)
Age		Age	
11 years	21 (22.6)	11 years	16 (53.3)
12 years	18 (19.4)	12 years	4 (13.3)
13 years	26 (28.0)	13 years	4 (13.3)
14 years	27 (29.0)	14 years	6 (20.0)

Table 3.3 Early Adolescent Devices by Sex and Age

	11 years	12 years	13 years	14 years	Unspecified Age
Devices by Sex and Age *n* (%)					
Sex					
Female	15 (12)	11 (9)	14 (12)	13 (11)	5 (4)
Male	18 (15)	9 (7)	12 (10)	17 (14)	2 (2)
Unspecified sex	1 (1)	1 (1)	1 (1)		
Smartphone	25 (20)	15 (12)	26 (21)	25 (20)	4 (3)
Tablet	26 (21)	14 (11)	16 (13)	15 (12)	10 (8)
Computer	28 (23)	18 (15)	24 (20)	26 (21)	7 (6)
Flip phone	2 (2)			1 (1)	2 (2)
Other					
PlayStation	1 (1)				
iPod	1 (1)	1 (1)			1 (1)
Xbox				1 (1)	

Table 3.4 Early Adolescent Social Media and Mobile Applications

Social Media and Mobile Applications Used by Children *n* (%)	
Instagram	55 (47)
Snapchat	51 (43)
Facebook	33 (28)
Email	75 (64)
WhatsApp	1 (1)
Other	
Music.ly	8 (7)
YouTube	2 (1.7)
Video gaming	2 (1.7)
Hangouts	2 (1.7)
Instant messaging	1 (0.8)
Facetime	1 (0.8)
Duo	1 (0.8)
Text	1 (0.8)
Kik	1 (0.8)
House Party	1 (0.8)
Pinterest	1 (0.8)
Twitter	1 (0.8)
School sites	1 (0.8)
None	16 (14)

Table 3.5 Parental Mediation Practices

Mediation Style	1st child		2nd child	
	Mediation Practices n (%)			
Active Mediation				
Tell your child what to do about online strangers	Never	0 (0.00)	Never	0 (0.00)
	Seldom	1 (1.0)	Seldom	0 (0.00)
	Sometimes	23 (23.2)	Sometimes	6 (20.0)
	Often	37 (37.4)	Often	8 (26.7)
	Very often	38 (38.4)	Very often	16 (53.3)
	Frequently	75 (75.8)	Frequently	24 (80.0)
	Infrequently	24 (24.2)	Infrequently	6 (20.0)
Tell him/her to protect personal information	Never	0 (0.00)	Never	0 (0.00)
	Seldom	3 (3.0)	Seldom	1 (3.3)
	Sometimes	14 (14.1)	Sometimes	5 (16.7)
	Often	35 (35.4)	Often	7 (23.3)
	Very often	47 (47.5)	Very often	17 (56.7)
	Frequently	82 (82.9)	Frequently	24 (80.0)
	Infrequently	17 (17.1)	Infrequently	6 (20.0)
Say what to do if they are bullied or harassed	Never	2 (2.0)	Never	0 (0.00)
	Seldom	7 (7.1)	Seldom	2 (6.7)
	Sometimes	24 (24.2)	Sometimes	6 (20.0)
	Often	32 (32.3)	Often	8 (26.7)
	Very often	34 (34.3)	Very often	14 (46.7)
	Frequently	66 (67)	Frequently	22 (73.4)
	Infrequently	33 (33)	Infrequently	8 (26.7)
Talk to your child about what rules of conduct to follow (online)	Never	0 (0.00)	Never	0 (0.00)
	Seldom	2 (2.0)	Seldom	1 (3.2)
	Sometimes	17 (17.2)	Sometimes	7 (22.6)
	Often	38 (38.4)	Often	6 (19.4)
	Very often	42 (42.4)	Very often	17 (54.8)
	Frequently	80 (80.8)	Frequently	23 (74.2)
	Infrequently	19 (19.2)	Infrequently	8 (25.8)
Explain how to behave on social networking sites	Never	5 (5.3)	Never	0 (0.00)
	Seldom	3 (3.2)	Seldom	0 (0.00)
	Sometimes	20 (21.1)	Sometimes	7 (24.1)
	Often	34 (35.8)	Often	9 (31.0)
	Very often	33 (34.7)	Very often	13 (44.8)
	Frequently	67 (70.5)	Frequently	22 (75.8)
	Infrequently	28 (29.6)	Infrequently	7 (24.1)

Explain to your child what he may do on IM websites (instant messaging with real-time chat capability, like Facebook messenger)	Never	4 (4.2)	Never	2 (6.9)
	Seldom	8 (8.4)	Seldom	2 (6.9)
	Sometimes	21 (22.1)	Sometimes	5 (17.2)
	Often	31 (32.6)	Often	6 (20.7)
	Very often	31 (32.6)	Very often	14 (48.3)
	Frequently	62 (65.2)	Frequently	20 (69.0)
	Infrequently	33 (34.7)	Infrequently	9 (31.0)
Explain to your child how to use webmail	Never	14 (15.1)	Never	3 (11.1)
	Seldom	18 (19.4)	Seldom	6 (22.2)
	Sometimes	22 (23.7)	Sometimes	4 (14.8)
	Often	25 (26.9)	Often	4 (14.8)
	Very often	14 (15.1)	Very often	10 (37.0)
	Frequently	39 (42.0)	Frequently	14 (51.8)
	Infrequently	54 (58.2)	Infrequently	13 (48.1)

Co-use

Surf together, because the child wants to	Never	10 (10.4)	Never	5 (17.2)
	Seldom	24 (25.0)	Seldom	5 (17.2)
	Sometimes	40 (41.7)	Sometimes	8 (27.6)
	Often	18 (18.8)	Often	7 (24.1)
	Very often	4 (4.2)	Very often	4 (13.8)
	Frequently	22 (23.0)	Frequently	11 (37.9)
	Infrequently	74 (77.1)	Infrequently	18 (62.0)
Surf together, because you want to	Never	13 (13.5)	Never	7 (24.1)
	Seldom	22 (22.9)	Seldom	4 (13.8)
	Sometimes	46 (47.9)	Sometimes	9 (31.0)
	Often	11 (11.5)	Often	4 (13.8)
	Very often	4 (4.2)	Very often	5 (17.2)
	Frequently	15 (15.7)	Frequently	9 (31.0)
	Infrequently	81 (84.3)	Infrequently	20 (68.9)
Talk with your child about what is fun on the internet	Never	8 (8.2)	Never	6 (20.7)
	Seldom	26 (26.8)	Seldom	8 (27.6)
	Sometimes	36 (37.1)	Sometimes	5 (17.2)
	Often	21 (21.6)	Often	5 (17.5)
	Very often	6 (6.2)	Very often	5 (17.2)
	Frequently	27 (27.8)	Frequently	10 (34.7)
	Infrequently	70 (72.1)	Infrequently	19 (65.5)

Restrictive Mediation
General

Say that online games are unsuitable	Never	7 (7.4)	Never	3 (10.7)
	Seldom	20 (21.3)	Seldom	2 (7.1)
	Sometimes	38 (40.4)	Sometimes	8 (28.6)
	Often	15 (16.0)	Often	6 (21.4)
	Very often	14 (14.9)	Very often	9 (32.1)
	Frequently	29 (30.9)	Frequently	15 (53.5)
	Infrequently	65 (69.1)	Infrequently	13 (46.4)

Say which online game genres are allowed	Never	8 (8.5)	Never	3 (11.1)
	Seldom	8 (8.5)	Seldom	1 (3.7)
	Sometimes	22 (23.4)	Sometimes	5 (18.5)
	Often	29 (30.9)	Often	9 (33.3)
	Very often	27 (28.7)	Very often	9 (33.3)
	Frequently	56 (59.6)	Frequently	18 (66.6)
	Infrequently	38 (40.4)	Infrequently	9 (33.3)

Tell your child when/how long to use internet	Never	1 (1.1)	Never	2 (6.9)
	Seldom	5 (5.3)	Seldom	2 (6.9)
	Sometimes	19 (20.0)	Sometimes	4 (13.8)
	Often	28 (29.5)	Often	8 (27.6)
	Very often	42 (44.2)	Very often	13 (44.8)
	Frequently	70 (73.7)	Frequently	21 (72.4)
	Infrequently	25(26.4)	Infrequently	8 (27.6)

Restrictive Mediation
Content Specific

Say which films may be downloaded	Never	3 (3.3)	Never	1 (3.6)
	Seldom	10 (10.9)	Seldom	2 (7.1)
	Sometimes	15 (16.3)	Sometimes	7 (25.0)
	Often	25 (27.2)	Often	5 (17.9)
	Very often	39 (42.4)	Very often	13 (46.4)
	Frequently	64 (69.6)	Frequently	18 (64.3)
	Infrequently	28 (30.5)	Infrequently	10 (35.7)

Say which products may be bought online	Never	2 (2.2)	Never	1 (3.6)
	Seldom	9 (9.9)	Seldom	0 (0.00)
	Sometimes	4 (4.4)	Sometimes	6 (21.4)
	Often	27 (29.7)	Often	5 (17.9)
	Very often	49 (53.8)	Very often	16 (57.1)
	Frequently	76 (83.5)	Frequently	21 (75.0)
	Infrequently	15 (16.5)	Infrequently	7 (25.0)

Say what kind of avatar is allowed	Never	19 (20.9)	Never	2 (7.4)
	Seldom	19 (20.9)	Seldom	5 (18.5)
	Sometimes	11 (12.1)	Sometimes	6 (22.2)
	Often	16 (17.6)	Often	5 (18.5)
	Very often	26 (28.6)	Very often	9 (33.3)
	Frequently	42 (46.2)	Frequently	14 (51.8)
	Infrequently	49 (53.9)	Infrequently	13 (48.1)
Say what music may be listened to/downloaded	Never	6 (6.5)	Never	2 (7.4)
	Seldom	14 (15.1)	Seldom	6 (22.2)
	Sometimes	17 (18.3)	Sometimes	5 (18.5)
	Often	26 (28.0)	Often	4 (14.8)
	Very often	30 (32.3)	Very often	10 (37.0)
	Frequently	56 (60.3)	Frequently	14 (51.8)
	Infrequently	37 (39.9)	Infrequently	13 (48.1)
Supervision				
Keep an eye on the child and the computer (or smartphone)	Never	1 (1.1)	Never	2 (6.9)
	Seldom	6 (6.5)	Seldom	0 (0.00)
	Sometimes	20 (21.5)	Sometimes	10 (34.5)
	Often	30 (32.3)	Often	9 (31.0)
	Very often	36 (38.7)	Very often	8 (27.6)
	Frequently	66 (71.0)	Frequently	17 (58.6)
	Infrequently	27 (29.1)	Infrequently	12 (41.4)
Allow the child to web surf only when you are present	Never	16 (17.4)	Never	5 (17.2)
	Seldom	22 (23.9)	Seldom	6 (20.7)
	Sometimes	25 (27.2)	Sometimes	6 (20.7)
	Often	14 (15.2)	Often	5 (17.2)
	Very often	15 (16.3)	Very often	7 (24.1)
	Frequently	29 (31.5)	Frequently	12 (41.3)
	Infrequently	63 (68.5)	Infrequently	17 (58.6)
Stay close to the computer (or smartphone) to help if necessary	Never	7 (7.6)	Never	3 (10.7)
	Seldom	22 (23.9)	Seldom	6 (21.4)
	Sometimes	26 (28.3)	Sometimes	7 (25.0)
	Often	20 (21.7)	Often	6 (21.4)
	Very often	17 (18.5)	Very often	6 (21.4)
	Frequently	37 (40.2)	Frequently	12 (32.1)
	Infrequently	55 (59.8)	Infrequently	16 (67.8)

CHAPTER 4

PARENTAL PERCEPTIONS REGARDING EARLY ADOLESCENT

BEHAVIORS AND SEXUAL RISKS ONLINE VIA MOBILE

TECHNOLOGIES: AWARENESS, PROTECTIVE PRACTICES, AND

SUPPORT[3]

Many, if not most, adolescents communicate online via mobile technologies (i.e., smartphones and social media platforms, often accessed through downloadable mobile applications). Nearly 75% of adolescents have access to a smartphone, 71% use one or more social media sites, and 38% use mobile applications (Kachur et al., 2013; Lenhart, 2015). Mobile technology use can result in risks, many of which are sexual. Adolescents who communicate online via mobile technologies are exposed to explicit sexual content (Brown & Bobkowski, 2011), exchange of nude or semi-nude images, or sexting (Bass, 2016), and contact with strangers online (Sevcikova, Simon, Daneback, & Kvapilik, 2015), all of which is associated with sexual activity (Brown & Bobkowski, 2011; O'Sullivan, 2015; Sevcikova et al., 2015; Temple & Choi 2016). Sex-related mobile technology use can have negative health outcomes such as sexual activity, sexually transmitted infections (STIs) and teen pregnancy (Center for Disease Control and Prevention [CDC], 2017). These risks often begin in early adolescence (Bass, 2016), defined as ages 11-14 years (Hardin & Hackell, 2017). Risk mitigation begins with parental awareness of mobile technology use that can result in sexual risks in early adolescent children (Bass, 2016). Nursing professionals can support parents through focused health assessments and education.

The aims of this exploratory descriptive study were to (a) examine parents' level of awareness of early adolescent engagement in online behaviors and sexual risks via diverse technologies (i.e., smartphones, social media platforms, and downloadable mobile applications) and (b) engage parents of early adolescent children in identifying strategies that nursing professionals can use to counsel parents in addressing identified concerns. A better understanding of parental perspectives may provide nursing professionals with

knowledge to tailor health assessments and education to the needs of parents and their early adolescent children.

Background

Mobile technologies have changed the social landscape of adolescent communication, as social interaction now occurs within a culture of instant connectivity and mobility. Intertwined with increased mobility is sexual risks. Pornography, defined as depictions of genitals and/or sexual intercourse (Herring & Kapidzic, 2015), has increased among adolescent children with the proliferation of mobile technology use (Owens, Behun, Manning, & Reid, 2012; Vanden Abeele, Campbell, Eggermont, & Roe, 2014). Adolescent exposure to pornography can be volitional or unintentional.

Volitionally, 20% of adolescents exchange sexual content over smartphones; mobile viewing of pornography is associated with peer pressure and expectations, as exchange of these images is used to negotiate peer group position and acceptance (Vanden Abeele et al., 2014). Along with volitional exposures, adolescents are unintentionally exposed to pornography via misleadingly names websites or pop-ups that redirect adolescents to sexually explicit websites; 15% of youth ages 11 to 12 years of age have experienced unintentional exposures to nudity or images of people having sex (Livingstone & Smith, 2014). Frequent exposure to explicit sexual content, or pornography, increases the risk for sexual intercourse (Owens et al., 2012), and more frequent exposure is associated with early sexual debut, sexually transmitted infections (STIs), and teen pregnancy (Collins et al., 2017).

Viewing of sexualized media includes sexting, or sending, receiving or forwarding nude or seminude images (Bass, 2016). Sexting is associated with

smartphones (Rice et al., 2018) and social media use (Romo et al., 2017), as mobile

technologies make it easier than ever to create and circulate sexual images (Livingstone

& Smith, 2014). Sexting is not an alternative to real-world sexual behaviors but rather a

part of sexual behaviors of sexually active teens (Rice et al., 2018). Adolescents who

sext have more than seven times the odds of having ever had sexual intercourse and are

1.32 times more likely to be sexually active (Temple & Choi, 2016).

Sexting is associated with sexual victimization online. Adolescents accept

strangers as friends on social media (Gross, 2008), often resulting in exposure to

unwanted sexual advances and sexual solicitation (Livingstone & Smith, 2014; Morelli,

Bianchi, Baiocco, Pezzuti, & Chirumbolo, 2016; Reyns, Burek, Henson, & Fisher, 2013).

Sexual solicitations include sex talk, solicitation of sexual images, and requests to meet

offline (Wurtele & Kenny, 2016). Sexting is associated with sexual activity, unprotected

sex, increased number of sex partners, and oral sex (Bass, 2016; Temple & Choi, 2016).

Risks associated with mobile technology use begin in early adolescence.

Approximately 69% of early adolescent children own mobile phones and 65%

communicate on social media platforms (Kachur et al., 2013). These children chat with

strangers online and seek out pornography sites (Dowell, Burgess, & Cavanaugh, 2009).

They also sext (Bass, 2016). Exposure to explicit sexual content and sexting in early

adolescent children is associated with negative health outcomes such as sexual initiation,

unwanted sex, STIs, and teen pregnancy (Bass, 2016; Parkes, Wight, Hunt, Henderson, &

Sargent, 2013).

Parents are concerned about mobile technology use (Doh, Rhim, & Lee, 2016)

and exposure to inappropriate content on these devices and platforms (Stanley, Vaterlaus,

Tulane, & Beckert, 2017). These concerns are impacted by awareness levels associated with online risks. Awareness often begins with communication. Communication is a fundamental means by which parents convey knowledge and values to children (Jerman & Constantine, 2010) and is a strategy for mitigating sexual risks associated with mobile technology use. Communication can deter online risks (Khurana, Bleakley, Jordan, & Romer, 2015; Weigle & Reid, 2014) and is associated with lower levels of viewing online pornography in adolescents (Ma, Shek, & Lai (2017).

The strongest predictor of adolescents' permissive sexual attitudes and risk-taking is perceived parental communication competence and effectiveness (Holman & Kellas, 2015). Parents may struggle with communication about sexual issues (Wisnieski, Sieving, & Garwick, 2015), as explicit sexual communication requires negotiation and assertiveness skills (Widman et al., 2014). Parental awareness also includes knowledge of online activities. Parents increase awareness of activities by checking websites and social media profiles, reviewing messages, and talking with adolescents about online activities (Anderson, 2016). Activities directed at risk mitigation are often more prevalent in younger children (Nikken & Jansz, 2014).

Awareness of adolescent online activities can mitigate sexual risks, but multiple factors impact awareness levels. Parents may be unaware of access to inappropriate content at school (Len-Rios, Hughes, McKee, & Young, 2016), or they may impose few rules and limited control over online activities (Leung & Lee, 2016). Further impacting awareness, parents often have less technology skills than adolescent children (Stanley et al., 2017), and smartphone activities are often difficult to track (Barth, 2015; Bass, 2016; Mullen & Hamilton, 2016).

Adolescents can further challenge parental oversight through deceptive practices. Adolescents hide social media platforms and mobile apps, disable notifications, delete texts, and hide search histories and contacts (Hamilton, 2015; Mullen & Hamilton, 2016). Disappearing technologies such as Snapchat, Instagram and Tumblr further hinder parental oversight, as these platforms exclude those not invited into the social audience and make adolescent practices less visible to parents (Charteris, Gregory, & Master, 2018). Factors impacting parental awareness can have far-reaching consequences, as lack of parental involvement can result in viewing of pornography and online victimization (Pujazon-Zazik & Park, 2010).

Given the implications for sexual risks via mobile technologies, including the potential for adverse health outcomes, it is important to examine parental awareness levels as a mitigation strategy. Few studies have investigated adolescent sexual risks via mobile technologies from a parental perspective, and studies with a focus on early adolescent children is limited.

Specific Aims and Questions

The specific aims of this research were to (a) examine parents' level of awareness of early adolescent engagement in online behaviors and sexual risks via diverse technologies (aim 1), and (b) engage parents of early adolescents in identifying strategies that nursing professionals can use to counsel parents in addressing the concerns identified in aim 1.

The research questions were:

- What is the level of parental awareness regarding early adolescent access to and/or participation in sexual behaviors via smartphones, social media, and mobile applications?

- What protective practices do parents utilize in relation to early adolescents' online behaviors and risks?

- What are the associations between parental gender and parental protective practices?

- What are strategies that nursing professionals can use to counsel parents regarding risks associated with mobile technology use?

Methods

The purpose of this exploratory descriptive study, conducted in two phases, was to explore parental perceptions and experiences regarding early adolescent online behaviors and sexual risks on mobile technologies (i.e., smartphones and associated social media accessed through downloadable mobile applications) utilizing a six-step thematic analysis approach (Braun & Clark, 2006). This approach was chosen to provide richness and depth to parental experiences and perceptions (Ivankova, Creswell, & Stick, 2006).

The first phase included qualitative, semi-structured interviews in-person or over the phone with English-speaking parents of early adolescent children ages 11 to 14 years to address aim 1. Guided by Phase I interviews, Phase II included follow-up phone interviews with five parents from the qualitative portion of Phase I to identify strategies that nursing professionals could use to counsel parents in addressing salient concerns identified in Phase I. In both phases, pseudonyms are used to conceal participant

identities. To ensure the protection of human subjects, this research was approved by the

University of South Carolina Institutional Review Board (Appendix D). This research

was submitted for expedited review, as there were no more than minimal risks to human

subjects (University of South Carolina, 2018).

Study participants and settings

Recruitment involved a purposive sampling of English-speaking parents of early

adolescent children ages 11 to 14 years in North and South Carolina. Recruitment

occurred via personal verbal invitation and recommendations by community or academic

leaders of parents who agreed to be contacted.

Data collection

Data was collected through interviews, conducted in two phases, using open-

ended, semi-structured interview guides. In Phase I, individual or dyadic interviews were

conducted with fifteen parental participants at various times and locations chosen by the

participants. Locations included homes and church conference rooms. Some Phase I

participants preferred to be interviewed over the phone. In Phase two, results from Phase

I interviews were used to develop an interview guide, and Phase II interviews were

conducted with five participants over the phone.

Data analysis

Phase I and Phase II interviews were audiotaped, transcribed verbatim, and de-

identified. Transcribed responses were denaturalized to remove idiosyncratic elements of

speech (e.g., pauses and involuntary vocalizations) and focus on the substance of the

interview and the meanings and perceptions created and shared during conversations

(Oliver, Serovich, & Mason, 2005). Each interview was analyzed using a qualitative

descriptive approach via iterative process which included content analysis, reflexivity via journaling, an audit trail, summarization of interviews, field notes for transparency, development of patterns and themes via coding, and member checking to ensure accuracy of interpreted meanings (Willis et al., 2016). Phases of thematic analysis include (a) familiarization with the data, (b) generating initial codes, (c) searching for themes, (d) reviewing themes, (e) defining and naming themes, and (f) producing the report (Braun & Clark, 2006).

Phase I Results

Phase I interview data provided insight into parents' level of awareness of early adolescent engagement in online behaviors and sexual risks via smartphones, social media, and mobile applications. Responses to open-ended interview questions resulted in 5 themes which were (a) mobile devices and social media platforms; (b) parental awareness of online mobile technology risks; (c) contributing factors to online risks via mobile technologies; (d) parental protective practices, both actional and relational, and (d) gender-specific practices. Interviews took place in various locations including participant homes, church conference rooms, and participant-requested phone conversations. Differences in settings are not believed to have influenced responses, as all participants openly and willingly answered all questions, and no substantive differences in responses between groups were noted.

Mobile Devices and Social Media Platforms

In all encounters, parents identified devices in their homes that could access the internet, many being mobile. In one exchange, Carol, a 38-year-old married mother, related that devices in her home that could access the internet included

"Smartphones, tablets, laptops, and TV… Nintendo Switch ™."

Other mobile devices such as iPads, iPods, computer gaming systems, and digital assistants such as Alexa increased communication capacity among parents and early adolescent children. Internet access was important to these families. Most parents (10, 67%) allowed smartphone ownership for early adolescent children. Although most children owned smartphones and readily communicated on these devices, some parents restricted smartphone use, allowing use only under controlled conditions. Diane, a 47-year-old married mother, described her 11-year-old daughter's smartphone use:

"The smartphone use is only on our devices, only in our presence, only when we

ask for her to do something."

Early adolescent children readily requested to use smartphones to communicate on social media, and many parents obliged. Among the most popular platforms for early adolescents were:

"Facebook, Instagram, and snapchat."

"Music.ly and YouTube."

Bill, a 46-year-old married father of a 13-year-old girl, stated:

"Snapchat is probably the biggest one that she uses."

Although most parents allowed social media access, some parents were concerned about online risks which resulted in restricted access to all social media. Edward, the married father of a girl of 14 years, stated:

"No social media."

It was important to these parents to know who their children were communicating with and what content they were accessing, and they were concerned about what could

occur outside of their realm of influence. According to Larry, a 42-year-old married

father of two early adolescent children,

> "It's not just their phone. They go to their friend's houses, who knows what they
>
> look at there."

Outside influences resulted in concern, particularly at school. Molly, a mother of a 12-

year-old boy, stated:

> "I have less control…now at middle school."

> Although concerns were evident, all parents considered these devices and

platforms to be a necessary and enjoyable means of communication. Completely

sheltering early adolescent children from mobile technologies, for many parents, was

deprecatory. As Elain, the mother of a 14-year-old daughter, explained:

> "I wouldn't be from the perspective of completely sheltering them from the
>
> internet because we're supposed to show them how it's useful and harmful…if
>
> some families have the view that you completely disallow it, I think that would be
>
> as dangerous…I think it's important that, while they're young, that we shape their
>
> view of it."

Parental Awareness and Concern for Online Risks

> Parents were keenly aware of risks associated with these devices and platforms.

Parents expressed concern for access to explicit, often graphic, sexual content on

smartphones. This content was often insidious. Lori, a 38-year-old married mother,

explained that her 12-year-old son was unintentionally exposed to graphic sexual content:

> "He kept getting a popup, and they just kept popping up, popping up, popping
>
> up…He couldn't get out of it…. it was sexual images."

Embedded pop-up links that redirected early adolescent children to explicit sexual websites, for these parents, were relentless, and they felt ill-equipped to avert these exposures.

Concern also stemmed from parental personal experiences, as numerous parents had experienced unintentional exposure to graphic sexual content online, specifically from typing in a wrong or misspelled word. Lori described her personal experience of unintentional exposure:

"A couple of years ago…I was listening online…the commercial said, dicksportinggoods.com or dicks.com…I typed that in, and that was not what it was… I was looking for an elliptical machine… I got a lot more than I bargained for…it was sexually inappropriate."

Along with unintentional exposures, parents expressed concern regarding volitional viewing of explicit sexual content. Several early adolescent males had purposefully sought out pornography via mobile technologies. Jim, the father of a 12-year-old son, stated:

"He went to a site to look at pornography."

Volitional exposures were often linked to social media and messaging apps, as these platforms often contained explicit sexual content. Lori revealed personal exposure on social media:

"On Instagram, there was some sexually inappropriate things…Visual."

These experiences were shocking to parents in this study, and they increased vigilance online. Because of pornography, many parents restricted access to social media or

physically observed everything their child did online through safety features with mobile phone companies, often to the dread and exasperation of early adolescent children.

Although pornography was a concern, parents were most concerned about the risk of sexual solicitation and victimization online with mobile technologies. Joy, a 46-year-old mother of a girl of 11 years, described her concerns:

"My biggest concern would be that someone would try to connect with her [daughter] and her unknowingly trust that person…or someone figure out her location."

Carol, an unmarried 38-year-old mother, discussed an experience with an early adolescent family member:

"My 14-year-old niece talked to an older man on a chat line and sent a picture of herself over the internet, over a smartphone."

Contributing Factors to Online Risks via Mobile Technologies

Parental concerns were impacted by factors that contributed to sexual risks online, many of which were outside of their realm of influence. Parents recognized that there was a lot of peer pressure to engage in risky behaviors online, particularly of a sexual nature. Molly discussed an experience with her 12-year-old son:

"A child…at church…he told him to go and look up something…the word was vagina…explicit material popped up."

Jim shared an experience with his 12-year-old son:

"With one of his friends…He was looking at pornography… He received one of those viruses, a message that he had to pay $500 to clear the computer."

As evident in these conversations, concerns extended beyond their own children to early adolescent friendship groups, a situation that is largely beyond their realm of influence.

Beyond peer pressure, mobile technology use was impacted by developmental level. According to parents, early adolescent children are curious. Daniel, a 52-year-old married father of an eleven-year-old girl, expressed that development is a factor:

"It's the risks of their age…There are a number of circumstances that they don't know how to process…it comes out of social maturity…They're not going to understanding those things…. because of simple curiosity…they inadvertently get exposed".

Parents were also concerned about deceptive practices to avoid parental intrusion. Snapchat and Instagram were a concern, as inappropriate content can be uploaded to these platforms and disappear after a period of time. Bill stated,

 "There are certain ways to delete stuff."

A final factor that contributed to parental awareness was support from others. In one conversation, Carol stated,

"I don't feel like I've really had any support."

Others expressed that they have received some support online or through other parents. Joy stated,

"I think most of it I see on social media, warning parents about things that were happening."

Parental Protective Practices: Actional

Contributing factors such as these often resulted in protective practices to mitigate risks. Most practices were actional. Astutely aware of the risk of exposure to explicit

sexual content and contact with strangers, possibly pedophiles, many parents vigilantly supervised early adolescents online. Molly stated,

"Right now, it's all supervised."

Others supervised to a lesser degree through filters and blocks installed by mobile phone companies, and parents checked histories and texts, downloaded approval messages, and disconnected location functions to increase awareness of online activities and protect early adolescent children on mobile devices and platforms. Parents considered it necessary to restrict inappropriate content. Gail, a married 38-year-old mother of an 11-year-old girl stated,

"Adult sites and things like that are blocked."

Protective practices included monitoring. Diane described vigilant oversight of her 11-year-old daughter's iPod,

"I know all passwords…I will pick up that iPod at any time and check it to see what's going on."

Parents were proactive, persistent, and vigilant in their efforts to keep abreast of online activities. Vigilance lead to selectivity. Most parents unapologetically restricted access to certain activities and sites. Thus, access to chatrooms and social media platforms were deemed inappropriate by many parents, and Facebook, Instagram, and Snapchat were frequently denied. Joy described her interaction with her daughter of 11 years,

"This past weekend, she wanted Tumblr, and we told her no. Tumblr is another social media site where they share pictures."

Although most parents extended protective practices to online activities, there were some parents who believed that this was unnecessary, so they did not have blocks on the smartphone. For these parents, limited oversight was a matter of trust and privacy. For Jim,

> "I don't want to be a chopper dad, just hovering over them, looking at what they do, what they say, or what they're looking…it's a matter of trust."

Thus, findings revealed that autonomy varied, and some parents expected early adolescent children to conduct themselves in an appropriate and self-regulated manner rather than depending on protective practices.

Parental Protective Practices: Relational

An important aspect of protective practices extended beyond actional practices to relational practices. Communication was an essential component, as parents talked with early adolescent children about online risks and expectations. Central to these conversations was expectations about online contacts and appropriateness of content uploaded to social media.

Open, frank conversations were common. Molly described her communication with her 12-year-old son:

> "I'm not afraid to talk to him, just real, nothing makes me nervous to talk about with him…I'm not shy about telling him."

Communication was largely proactive, as they wanted to intervene before risks occurred, and rules were similar for all adolescent children in the home regardless of age. Parents hoped that these efforts were enough, as they had placed a lot of confidence in mobile phone companies. They hoped that blocking features were effective in protecting their

children from inappropriate content and adult websites. Technological advances were an issue, as social media sites and messaging apps rapidly changed. Jim stated,

"It's hard to keep up with all the different apps."

Proactive communication was also related to other siblings in the home. Communication and actions between older siblings and parents resulted in less early adolescent risk-taking online.

"She knew the rules because she already observed it with our previous children, two girls…She saw them get in trouble, lying about different things. So, she knew the rules."

Gender-specific Practices

Protective practices, both actional and relational, were often gender-specific. Overall, both parents were engaged in early adolescent use of mobile devices and social platforms, but roles varied. Often, mothers managed day-to-day monitoring by checking histories and approving friend requests and contacts. Discipline was the fathers' domain, as they restricted online privileges, confiscated phones, and exiled early adolescent children from social media accounts, at least for a little while. Bill explained his role in supervision:

"I'm the disciplinarian…. I usually make the decision when their phone is taken away and how long it is taken away."

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Phase II Results

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Phase I interviews informed phase II follow-up interviews to identify strategies that nursing professionals can use to counsel parents in addressing identified concerns. One dad and four moms participated in follow-up interviews. In Phase I, parents

expressed concern that early adolescent children were exposed to pornography and contact with strangers online. This resulted in two themes, *general strategies* and *strategies regarding online sexual risks*.

General Strategies

These parents were not surprised with the results of Phase I interviews, and they expected parental concerns about online risks. Parental caution regarding early adolescent mobile technology use was of utmost importance as a strategy. Parents expressed that upfront and honest communication and online restrictions were paramount to protecting early adolescent children online. But, these conversations could be difficult, and restrictions are not always effective. Daniel alluded to this challenge:

"Simply providing rules or restrictions, it's a failing strategy."

Parents wanted more support from nurses. Parents wanted nurses to provide parental education and skill-building and assessment of early adolescent online risks during clinic visits. Kim, a 46-year-old married mother, discussed parental needs related to mobile technology use:

"Educate the parents on how to use the technology in the way the kids do… how and what's out there…Parents don't know as much as the kids do."

Proactive approaches were considered best, as nurses had a unique opportunity to talk with parents and early adolescent children about online risks before they occurred. Support should extend beyond conversation to strategies that encourage parents to participate in online activities with early adolescent children. Daniel, a 52-year-old married father, explained,

"If a tool could be suggested or a model, a way for them [parents] to explore

things together so the child can learn."

Strategies Regarding Online Sexual Risks

In Phase I interviews, online risks were often sexual, and pornography was a

source of concern. Parents considered these to be delicate issues. Nurses, like parents,

needed tools to effectively support parents with these issues, and conversations around

these issues needed to be standardized. Joy, a 46-year-old married mother, explained her

views on nursing support for sexual risks online:

"I think there needs to be a standardized questionnaire, especially for

pediatricians, to ask the parents and the pediatric patient when they're coming

in…if there's actual behavior going on. Ask them separately, not together."

A nonjudgmental approach was considered foundational to these discussions, as nurses'

expressions of accusation and criticism can create barriers to effective communication

with parents. Diane, a 47-year-old married mother, suggested an approach to these

issues:

"Talk to parents in a way that you don't necessarily blame them… the parents

seem to be the ones that get blamed for kid's actions… you're like, how could

you let this happen? That's a little dangerous."

Discussion

Mobile technologies are an essential part of early adolescent communication, but

there are risks associated with these devices and platforms and negative health outcomes

are possible. Early adolescent children are often inundated with sexualized imagery,

much of which is graphic and unintentional, and they interact with strangers online which

can expose them to sexual victimization. Often, this occurs with smartphones on social media platforms accessed through mobile apps. Parents are justifiably concerned.

Previous research has examined adolescent online risks associated with mobile technology use. Barth (2015) investigated social media use in adolescents, Bass (2016) examined sexting, Symons and associates (2017) explored exposure to explicit sexual content, and Bobkowski and associates (2016) studied sexual intensity online. These risks are associated with sexual activity, STIs and teen pregnancy (Collins et al., 2017).

From a parental perspective, Doh, Rhim, and Lee (2016) examined parental monitoring and restrictive practices associated with adolescent mobile technology use, and Nikken and Jansz (2014) investigated mediation practices directed at guiding internet use and controlling associated risks. Although this research is important, there are gaps in knowledge. Namely, these studies often investigated this phenomenon in a broader fashion, including children of various developmental levels in the same studies; research on early adolescent children is limited. Research focused on the parental perspective is also limited. This study addresses both elements.

This research investigated early adolescent mobile technology use and associated risks from a parental perspective. Integration of these two distinctive elements advanced science in four distinctive ways. Firstly, parental awareness levels are intertwined with early adolescent online activities and risks. Parents in this study were keenly aware of the risks associated with mobile technology use, and this was often related to their perception of developmental factors. According to parents, curiosity and maturity are intertwined with vulnerability to risks.

Secondly, parental awareness of risks also included sexual risks online. Consistent with literature (Bass, 2016; Brown & Bobkowski, 2011; Livingstone and Smith, 2014; Say, Babadagi, Karabekiroglu, Yuce, & Akbas, 2015; Whittle et al., 2013), findings revealed that personal experiences, both with parents and early adolescent children, heightened awareness of explicit, often insidious pornography and online contact with adults who could lure early adolescent children into real-world or online sexual encounters. This was gender-specific, as exposure to pornography occurred with early adolescent males and online contact with an unknown adult male occurred with an early adolescent female. To my surprise, however, findings did not indicate sexting as a source of concern. This contrasts with current research that identified sexting in adolescent children, including early adolescents, as a serious problem with dangerous health implications (Morelli et al., 2016; Temple & Choi 2016).

Thirdly, new insight was gained into protective practices. Parents openly and proactively communicated with early adolescent children about online risks and instituted protective practices, but, unexpectantly, these were similar for all adolescent children. This was surprising, given the evidence that younger children are often more supervised (Nikken & Jansz, 2014). Another unexpected finding was the association between older siblings in the home and less online risk-taking for early adolescent children. It may be that younger children learn rules and expectations more effectively through modeling and observation; modeled outcomes and observed consequences can create negative outcome expectancies that function as disincentives (Bandura, 2001). As such, communication and reactions between older siblings and parents mitigated online risks. This highlights the importance of considering unique developmental needs, as early adolescent children

need clear expectations and rules (CDC, 2018) and basic needs of security and safety online (Maslow, 1943) are achieved through parental protective practices such as these.

Finally, this study added to our understanding of parental perception of support. Although keenly involved, many parents felt unprepared to manage the complexities of online activities via mobile technologies. Likewise, this study provided insight into what Stanley and associates (2017) termed as the generational divide between technology savvy adolescents and parents who are less knowledgeable. The online social landscape was continuously evolving, and newer, more numerous messaging apps quickly made current versions obsolete. Thus, parents struggled to keep up with changing technologies, and they quickly got left behind. Complicating online communication, many messaging apps allowed for disappearing images, hidden apps and deleted contacts and content. Contextually, parents turned to social media and anecdotal strategies to deal with this serious problem. Parents were understandably interested in more support, and they wanted more involvement from nurses.

Parents perceived that nurses could help them manage the complexities of early adolescent mobile technology use and associated risks through communication, education, and better assessments. As evident in this study, sexual risks do occur. The challenge to nursing professionals is collaborative engagement with parents and early adolescent children in an open, honest exchange. Based on these responses, it may be that nurses make moral judgments that alienate parents, nullify parental agency, and result in barriers to effective intervention. Failure to address these barriers can negatively affect early adolescent health outcomes.

As highlighted in these findings, there is an undeniable need for more evidence pertaining to these delicate but serious issues as well as parental inclusion in research. Parents are very involved in mobile technology use with early adolescent children, and they are keenly aware of associated risks, especially on social media platforms. This research has added to our current understanding of this complex phenomenon.

Future research should expand on these findings with further exploration of online sexual issues impacting early adolescent children on mobile technologies. One area that warrants further investigation is sexting. In contrast to current evidence that sexting is a problem among early adolescent children with serious health outcomes, (Bass, 2016; Hatchel & Subrahmanyam, 2016; Morelli et al., 2016; O'Keeffe & Clarke-Pearson, 2011; Temple & Choi 2016), parents in this study did not include sexting as a sexual risk. Research investigating parental perception of sexting in early adolescent children is warranted. Future research should also include development of an educational program for parents to improve technology skills, specifically with social media platforms and mobile applications. It is also important to investigate the impact of older siblings on risk mitigation.

Most importantly, research is warranted for development of a screening tool that can be used by nurses to screen for online risks associated with mobile technology use in early adolescent children. As evidenced in chapter 4, nursing support is needed regarding early adolescent volitional and unintentional exposure to pornography and contact with online strangers that may lead to sexual solicitation online and offline sexual encounters. This tool should be available to pediatric nurse practitioners, nurses in pediatric clinics, and middle school nurses, and collaborative community-based engagement with schools,

health clinics, and youth organizations is needed, as a more comprehensive approach to this problem is warranted. It is also recommended that future research prioritize knowledge and skills assessment of nurses regarding early adolescent mobile technology use and associated risks, as this is essential to effective screening of early adolescent children.

This study is not without limitations. Findings from this study are not generalizable to all parents of early adolescent children. As such, only two single parents were recruited to participate. This limits insight into single-parent homes. Furthermore, parental experiences and perceptions may vary in a larger sample of parents. Additionally, follow-up interviews with all participants may have provided greater insight into strategies that nursing professionals can use to address concerns with pornography and online communication with strangers.

Conclusions

Mobile technologies (i.e., smartphones and social media platforms, often accessed through downloadable mobile applications) are entwined with early adolescent social interaction. Parental perceptions and experiences revealed that mobile technology use is prevalent among early adolescent children, and exposure to pornography and contact online with strangers is a legitimate concern. Parental awareness is an essential component of risk mitigation. Awareness levels are intertwined with protective practices. Parents increased awareness through open, frank communication paired with online supervision. Nursing professionals can support parents in these efforts. Educational strategies can provide necessary knowledge and skills pertaining to online risks with these devices and platforms. Future research is warranted for screening tools to

effectively assess for online risks that can adversely affect early adolescent health

outcomes as well as knowledge and skills assessment of nurses regarding mobile

technology use and associated risks and educational programs to improve technology

skills in parents.

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CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This exploratory descriptive study, conducted in two phases, investigated parental awareness, protective practices, and mediation regarding online risks, sexual behaviors, and mobile technology use (i.e., smartphones and social media platforms, often accessed through downloadable mobile applications) in early adolescent children ages 11 to 14 years. Participants included English-speaking parents of early adolescent children. The following research questions were explored:

- What is the level of parental awareness regarding early adolescent access to and/or participation in sexual behaviors via smartphones, social media, and mobile applications?

- What protective practices do parents utilize in relation to early adolescents' online sexual behaviors and risks?

- What internet mediation practices do parents of early adolescent children utilize?

- What are the associations between parental gender and parental protective practices?

- What are strategies that nursing professionals can use to counsel parents regarding risks associated with mobile technology use?

Specific aims were to (a) examine parents' level of awareness of early adolescent engagement in online behaviors and sexual risks via diverse technologies; (b) explore

parental protective practices aimed at mitigating online sexual risks via smartphones, social media, and mobile applications among early adolescents ages 11 to 14 years; and (c) engage parents of early adolescents in identifying strategies that nursing professionals can use to counsel parents in addressing the concerns identified in Aims 1 & 2.

A mixed method, convergent design was chosen to more robustly and coherently explain quantitative data (Fetters, Curry, & Creswell, 2013). In phase I, I conducted qualitative interviews with 15 parents to explore parental awareness and protective practices and administered survey questionnaires to identify parental mediation practices. In phase II, I conducted follow-up qualitative interviews with five parents to examine strategies for nursing professionals to counsel parents concerning issues identified in phase I. Phase I qualitative and quantitative data were collected during a similar timeframe, analyzed separately, merged, and jointly displayed in Appendix C. Data integration is a convergent design in which qualitative and quantitative data are collected during a similar timeframe, analyzed separately, and then merged; Qualitative data can be used to more robustly explain quantitative data, jointly displayed in an integrated table (Fetters, Curry, & Creswell, 2013).

This study advanced research in two distinct and overarching ways. Firstly, previous studies often investigated mobile technology use and associated risks from a broad perspective with varying adolescent developmental levels within the same study. Secondly, research from a parental perspective was sparse. This study combined these two elements by examining mobile technology use and risks in early adolescent children from a parental perspective.

Mobile technologies have changed the social landscape of communication for early adolescent children, as social interaction now occurs within a culture of instant connectivity and mobility. Intertwined with this communication is risks associated with content and contacts (Bass, 2016; Chassiakos, Radesky, Christakis, Moreno, & Cross, 2016). These risks are often initiated in middle school (Bass, 2016). Sex-related mobile technology use is associated with negative health outcomes in adolescents such as sexual activity, STIs, and teen pregnancy (Parkes, Wight, Hunt, Henderson, & Sargent, 2013; Romo et al., 2017).

Current research on early adolescent mobile technology use and associated risks is limited. Kachur and associates (2013) provided evidence that smartphone and social media use begins in middle school. Bass (2016) and Chassiakos and associates (2016) found that viewing of explicit sexual content, sexting, and contact with online strangers can result in sexual victimization, often beginning in early adolescent children. Sex-related online content in early adolescent children is associated with sexual intercourse and oral sex (Bobkowski, Shafer, & Ortiz, 2016; Brown & Bobkowski, 2011; Hatchel & Subrahmanyam, 2016; Temple & Choi, 2016).

These risks can be mitigated through parental mediation. Parental mediation, or regulation of internet use, is a relatively new concept associated with online activities in children. Nikken and Jansz (2014) added foundational evidence on parental mediation practices (i.e., active mediation, restrictive mediation, co-use, and supervision) for internet use in children up to 12 years of age. Further contributing to evidence, Nikken and Schols (2015) identified supervision and co-use in younger children and active and restrictive mediation for older children as interventions for online risks. Notten and

Nikken (2016) added that absence of co-use increased the chance of risky online behaviors in children, and Daneels and Vanwynsberghe (2017) identified parental limits and control of media use, time, and content as factors.

Consistent with this convergent design, findings from qualitative and quantitative inquires provided insight into the complexities surrounding this phenomenon. Displayed in Table 5.1., parents performed mediation practices to guide online activities. Corresponding quotes from phase I interviews identified risks and parental concerns associated with these practices. This is discussed in greater detail in the next sections.

Although prior research has added to the current body of evidence, this study advanced science in several ways. Firstly, research on mediation practices in early adolescent children, as discussed in Chapter 3, advances Nikken and Jansz (2014) research on children up to 12 years of age. Parents in this study highlighted the extent to which these children communicated on smartphones and social media platforms and identified online risks and mediation practices specific to this age group. Insight was also gained on specific mediation practices. Parents predominantly performed *active mediation*, a communicative approach in which parents talked to early adolescent children about online risks. Parents talked about acceptable behavior on social media platforms and contact with online strangers as well as access to content and time spent online. This resulted in *restrictive mediation practices* to provide internet regulation through rules and control. Findings also indicated that some mediation practices were infrequently performed. *Co-use*, or collaborative surfing, and *supervision* was limited for parents in this study. Although parents were actively communicating with early adolescent children about online risks and instituting online rules, this finding suggested

that access was largely autonomous. Thus, the research question was answered

pertaining to internet mediation practices of parents of early adolescent children.

Interviews, as discussed in Chapter 4, enhanced survey findings with rich insight

into personal experiences. Parental experiences resulted in five themes. *Mobile devices*

and social media platforms, the first theme, revealed that families have abundant

technologies within the home that can access internet, including mobile technologies.

Smartphones and social media were popular with early adolescent children, resulting in

multiple platforms and accounts.

Mobile technology use among early adolescent children resulted in the second

theme, *parental awareness of online mobile technology risks*. Parents were vigilantly

watchful of online activities, especially on social media. Mobile apps were a concern, as

parents struggled to keep up with emerging platforms that were difficult to monitor.

Though vigilant, risks did occur with these early adolescent children. Consistent with

current evidence (Bass, 2016; Brown & Bobkowski, 2011; Sevcikova & Daneback, 2014;

Temple and Choi; 2016), pornography was a problem. This was gender-specific, as

multiple early adolescent males had been volitionally and unintentionally exposed to

explicit sexual content, both of nude images and sexual activity. This occurred on

smartphones and included pop-up links that directed early adolescent children to sexually

explicit websites and purposeful navigation to these sites. Gender-specific contact with

strangers was also identified, as one early adolescent female uploaded a personal image

of herself for an unknown adult male she met online. Contrary to current evidence (Bass,

2016; Chassiakos et al., 2016), parents did not identify sexting as a sexual risk associated

with mobile technology use.

Exposure to pornography was associated with the third theme, *Contributing Factors to Online Risks via Mobile Technologies*. Parents identified influences outside of their realm of influence that resulted in exposure to explicit sexual content. Specifically, peers had steered early adolescent children to sexually explicit websites in situations at church and at a friend's home. Parents were surprised and expressed that they were very concerned about influences outside of the home environment.

Online risks and factors beyond their control led to the fourth theme, *parental protective practices*. These included actional and relational practices parents performed to mitigate online risks on mobile devices and platforms. For example, actional practices involved supervision and restrictions, as parents checked histories, obtained passwords, limited access and time online, and installed filters through mobile phone companies. Relational practices were communicative, as parents were open and frank about online risks and expectations on social media. The final theme, *gender-specific practices*, revealed that although both parents were vigilant, roles were different. Mothers engaged in day-to-day supervision while fathers provided the discipline, especially in the realm of online restrictions.

Themes highlighted the need for greater parental support. Predominantly, parents turned to social media and other parents for guidance on mediation strategies. Supportive nurse-parent relationships may hold the answer to more effective mediation. Phase II participants identified parental strategies to help nurses counsel parents on risks associated with mobile technology use. Strategies were divided into two themes. G*eneral strategies*, the first theme, identified parental support through communication and education. Nursing professionals should stress vigilance online and open

communication with early adolescent children. Education should include skill-building

with current technologies, specifically mobile applications. This education could benefit

from a tool to help parents explore content online together. For the second theme,

strategies regarding online sexual risks, a nonjudgmental approach was essential, as

blaming and judging parents when early adolescent children engaged in sexual behaviors

or risks online was detrimental to the nurse-parent relationship. Furthermore, parents

would like for nurses to have a standardized tool to assess online behaviors and guide

conversations with parents and early adolescent children. Thus, Phase I and Phase II

interviews answered the research questions pertaining to level of parental awareness of

early adolescent access to and participation in sexual behaviors via mobile technologies,

protective practices utilized by parents in relation to these behaviors and risks, gender-

specific practices, and strategies for nursing professionals to use in counseling parents

concerning these issues.

This research is not without limitations. Findings are not generalizable to all

parents of early adolescent children. This study has limited insight into parental

experiences and perceptions in single-parent homes, as only two single parents were

recruited to participate in Phase I interviews. Furthermore, parental experiences of online

risks and perceptions of those risks may be vastly different among a broader sample of

parents. Also, homogeneity of the survey sample limited generalizability, as mediation

practices may vary among parents in different socioeconomic and ethnic groups.

Implications for Nursing Research, Education, and Practice

Parental engagement through awareness, protective practices, and mediation

regarding online risks, sexual behaviors, and mobile technology use is an important area

of investigation and a relatively untapped area of scientific inquiry within nursing research. Current nursing research includes social media patterns of sexual offenders and internet risk behaviors in middle school adolescents (Dowdell, 2011; Dowdell, Burgess, & Flores, 2011). Although important, this evidence highlights insufficient knowledge development among nurse researchers in this area. Nursing research adds a unique perspective. Knowledge development is vital to evidence-based clinical practice (American Nurses Association, 2017; Tingen et al., 2009). This evidence can provide insight into health assessments and education that is tailored to the needs of parents and early adolescent children, as distinct developmental stages require different clinical practice approaches to care.

Parental viewpoints identified support beyond the family and greater involvement from nurses. This has implications for nursing education. Parents wanted more education regarding online risks impacting early adolescent children and better skills to interact with technology on a similar level as these children. As discussed in Chapter 4, parents struggled to keep up with the latest social media platforms and lacked expertise to operate many popular mobile applications. An educational program to advance technology skills in parents would be beneficial, and a screening tool to explore early adolescent online risks can help nurses identify problematic internet use and intervene in online risks. Health assessment to identify these risks can support parental mediation practices.

Future Research Directions

As discussed in Chapter 3, parents had limited co-use and supervision of early adolescent mobile technology use. Further research is warranted for educational

strategies to improve collaborative online participation with early adolescent children as well as approaches to enhance parental oversight of online activities. Also, development of an educational program to improve parental utilization of mobile technologies would be beneficial. Research directed at parental education can increase awareness of online risks on mobile technologies as well as negative health outcomes associated with these risks.

Furthermore, research is warranted for development of a screening tool to guide nursing assessment of online risks and sex-related mobile technology use, as discussed in Chapter 4. Also, research to develop a structured questionnaire to assess nurse's knowledge and skills regarding these issues is needed, as this is essential for effective screening. This presents interdisciplinary opportunities with health fairs, teachers, guidance counselors, primary care, social workers and other professionals, as nurses can educate these disciplines on the seriousness of these issues as well as screening for risks associated with mobile technology use.

Beyond educational and screening strategies, more research is warranted with parents. Given that both early adolescent sexual risks online and parental protective practices were gender-specific in Chapters 3 and 4, more research is warranted in this area. As parents noted volitional and unintentional sex-related mobile technology use in Chapter 3, a program to bridge communication between parents and early adolescent children regarding these issues would also be beneficial. It is important for parents to understand online risks affecting early adolescent children. Nursing research to improve parental awareness and protective practices, including mediation, can support parental

agency and promote parental mitigation of early adolescent risks on mobile devices and platforms.

Conclusions

Parents are an important factor in mitigation of risks associated with early adolescent mobile technology use. Online risks can be mitigated through parental awareness, protective practices, and mediation. Current research has primarily investigated this phenomenon from the perspective of broadly defined age groups, and parental perceptions were limited. This study expanded our understanding of online risks and sex-related mobile technology use by focusing on early adolescent children from a parental perspective. Findings also highlighted the importance of support outside of the family unit, specifically from nurses. Parents identified greater involvement from nursing professionals that included education, technological skill-building, and better assessment of online risks affecting early adolescent children. Nursing support can increase parental agency to effectively mitigate risks associated with mobile technology use. Future research is warranted for educational programs to address parental understanding of online risks and utilization of mobile technologies, assessment of knowledge and skills in nurses regarding these issues, and a screening tool to guide nurses in incorporating mobile technology use into early adolescent health assessments

Table 5.1 Integrated Table

Mediation Style	Qualitative Findings
Active Mediation	
Tell your child what to do about online strangers	"As far as communicating with people…that's one of the biggest no nos."
Tell him/her to protect personal information, say what to do if they are bullied or harassed	"Constantly reminding her to not put out personal information."
Talk to your child about what rules of conduct to follow (online)	"I tell him not to chat with or send pictures to anybody."
Explain how to behave on social networking sites, explain to your child what he may do on IM websites (instant messaging)	"She knew the rules because she already observed it with our previous children, two girls…She saw them get in trouble, lying about different things."
Co-Use	
Surf together, because the child wants to Surf together, because you want to	"A lot of the time, we'll look at things together.
Talk with your child about what is fun on the internet	"For her to just stick with the kid friendly, funny things that she watches."
Restrictive Mediation General	
Say that online games are unsuitable Say which online game genres are allowed	"When he is gaming, he's in the main living room with us."
Tell your child when/how long to use internet	"10 o'clock is her cut off."
Restrictive Mediation Content Specific	
Say which films may be downloaded	"We know what he's downloading…on his smartphone."
Say what music may be listened to/downloaded	"She has a small group of friends that have music.ly, but it's just people she knows."
Supervision	
Keep an eye on the child and the computer (or smartphone)	"We'll take the phone and periodically check and look through the history."
Allow the child to web surf only when you are present	"The smartphone use is only on our devices and only in our presence."
Stay close to the computer (or smartphone) to help if necessary	"I'll let them look it up on my phone, when they're with me."

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APPENDIX A

IRB APPROVAL LETTER

**INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH
APPROVAL LETTER for EXEMPT REVIEW**

Kendra Allison
College of Nursing
1601 Greene Street
Columbia, SC 29208

Re: **Pro00073093**

Dear Ms. Allison:

This is to certify that the research study, ***The Role of Parental Engagement with Early Adolescents Regarding Sexual Behaviors and Risks Online via Mobile Technologies***, was reviewed in accordance with 45 CFR 46.101(b)(**2**), the study received an exemption from Human Research Subject Regulations on **12/4/2017.** No further action or Institutional Review Board (IRB) oversight is required, as long as the study remains the same. However, the Principal Investigator must inform the Office of Research Compliance of any changes in procedures involving human subjects. Changes to the current research study could result in a reclassification of the study and further review by the IRB.

Because this study was determined to be exempt from further IRB oversight, consent document(s), if applicable, are not stamped with an expiration date.

All research related records are to be retained for at least three (3) years after termination of the study.

The Office of Research Compliance is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). If you have questions, contact Arlene McWhorter at arlenem@sc.edu or (803) 777-7095.

Sincerely,

Lisa M. Johnson
Orc Assistant Director
And IRB Manager