Preventing Child Sexual Abuse and Juvenile Offending Through Parental Monitoring

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Preventing Child Sexual Abuse and Juvenile Offending Through Parental Monitoring

by

Kelly E. Stewart

A dissertation submitted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
in
Applied Psychology

Dissertation Committee:
Keith Kaufman, Chair
Greg Townley
Joel Steele
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PREVENTION THROUGH PARENTAL MONITORING

Abstract

In this dissertation, I present three manuscripts to investigate the prevention of a range of crimes committed against, and by, youth, using parental monitoring or guardianship. In the first paper, I tested whether the routine activities of juvenile sexual offenders (JSOs) and their victims’ caregivers was associated with the JSO being placed into a supervisory role, and whether subgroup differences existed in the use of modus operandi strategies between JSO supervisors and non-supervisors (Chapter II). Findings indicated that parents’ need for childcare assistance predicted JSO supervisor status more strongly than perpetrators efforts to get the child alone or disruptions to parents’ lives. Furthermore, JSOs acting as a temporary caregiver to the child they abused was associated with more frequent use of modus operandi strategies overall and more frequent use of bribes and enticements to gain their victims’ compliance. There were no differences between JSO supervisors and non-supervisors on the threats and coercion modus operandi (MO) subscale, and moderators between JSO supervisor status and strategic grooming strategies were not found to be significantly related. The second paper used a series of MANCOVAs to investigate whether differences in parental monitoring exist between JSOs, Juvenile Delinquent (JDs) nonsexual offenders, and non-offending Juvenile Controls (JCs; Chapter III). Findings suggest that JSOs report lower parental knowledge, parental solicitation, and parental control, compared to JCs, but for certain items, they report higher levels of all three compared to JDs. They also differed from JDs such that they reported lower levels of perceived parental monitoring. Finally, the third study
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focused on the development of a quantitative scale measuring technology-based parental monitoring (Chapter IV). The resulting measure will help future researchers determine whether parents’ engagement with different forms of technology to communicate with their youth leads to differential outcomes for those youth, such as decreased delinquency and victimization. In sum, the first study investigates how JSOs end up in supervisory roles, and how their MO differs from non-supervisors, the second study looks at differences in parental monitoring between JSOs, juvenile non-sexual offenders, and community controls, and the third study described the development of a measure of technology-based parental monitoring. This dissertation is the first to apply both psychological and criminological perspectives to the prevention of youth offending and victimization through monitoring and other related concepts.
Acknowledgements

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CHAPTER I. INTRODUCTION

Child sexual abuse (CSA) is a serious and underreported phenomenon with severe consequences. Further, there are numerous barriers to victims’ access to treatment, especially if the child never reports the abuse (Baker, Connaughton & Zhang, 2010). For these reasons, preventing CSA from ever occurring is an important goal for parents and interventionists alike. While parents and other supervisors are often considered the most important line of defense in protecting their child from experiencing or perpetrating CSA, their effectiveness is surprisingly under-researched (Elliot, Browne & Kilcoyne, 1995).

The goal of this dissertation is to integrate the literatures on both parental monitoring and guardianship to provide direction for prevention efforts designed to address CSA. Across three studies, I investigate the strategies parents use to prevent their child from succumbing to, or perpetrating CSA. The first paper uses a sample of juvenile sexual offenders (JSOs) to investigate the types of routine activities that lead to JSOs being placed into supervisory roles over their victims, and the types of modus operandi (MO) strategies that JSOs who supervise their victims engage compared to youth who are not in supervisory roles (see Chapter II). The second paper investigates differences in self-reported parental monitoring between JSOs, juvenile non-sexual offenders, and community controls (see Chapter III). Finally, Chapter IV of this dissertation describes the proposed development of the first quantitative measure of Technology-Based Parental Monitoring (TBPM). This measure can be used to investigate this facet of parents’ CSA prevention efforts, as well as how parents’ engagement in strategies to protect their child from harm, in general. In summary, parents are considered “the” first line of defense in
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protecting their children from experiencing and perpetrating CSA. As such, it is important that researchers draw from both criminology and psychological theory and research, as well as the perspective of offenders and parents themselves, to develop comprehensive prevention directions to enhance youth safety.

Child Sexual Abuse

Despite the development of promising interventions, numerous studies point to CSA as a highly prevalent and underreported phenomenon in communities and settings throughout the world (Fanniff & Kolko, 2012; Finkelhor, 1994; Kaufman, Hayes & Knox, 2012; Stoltenborgh, van Ijzendoorn, Euser, Bakermans-Kranenburg, 2011). This is an important issue to address considering the adverse short and long term consequences experienced by victims of CSA perpetration. The Centers for Disease Control (2007) defines CSA broadly as any sexual activity with an underage minor who cannot legally consent. Sexual activity can include a variety of behaviors including but not limited to inappropriate exposure, touching, genital contact, and vaginal and anal penetration. The American Academy of Pediatrics expands on this definition to include activities that violate the developmental preparedness of the child, activities that are beyond their comprehension, and activities that violate social taboos (Kairys et al., 1999). According to the World Health Organization (Butchart, Harvey, Mian, & Furniss, 2006) CSA perpetrators can be children or adults who have a position of power or trust over the victim. The lack of consensus as to the exact definition of CSA makes it difficult to measure CSA prevalence, however, experts agree that it is a pervasive problem that must be addressed.
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Scope of the Problem

Professional estimates, meta-analyses, and scandals in various institutions reflected in the popular media help form a picture of the pervasiveness of CSA perpetration. According to an estimate by Baker et al. (2010), 1 in 3 girls and 1 in 7 boys in the United States are sexually molested before the age of 18, and only 10 to 35 percent of incidents involving sexual exploitation are ever reported (Baker, et al., 2010). Additionally, a meta-analysis consisting of sixty-five articles covering sexual abuse in 22 countries indicated that 7.9% of men and 19.7% of women experienced some form of sexual abuse prior to the age of 18 years of age (Pereda, Guilera, Forns & Gómez-Benito, 2009). This is particularly alarming considering that CSA statistics are known to be under-reported (Stoltenborgh, et al., 2011). Another factor that has highlighted the problem over the past decade is the increase in reports of CSA related scandals in churches, schools, sports, non-profits, and youth-serving organizations (YSOs) that have drawn national attention to this concern (Boyle, 2014; Lanning & Dietz, 2014; Trocmé & Schumaker, 1999). Research in response to these scandals has provided additional insights into the scope of CSA. For example, a report from John Jay College identified allegations of sexual abuse in 4,392 Catholic Priests between 1950 and 2002, accounting for 3%-6% of all priests in the U.S. (Lanning & Dietz, 2014). Further, estimates suggest that 6% to 10% of school children experience abuse by teachers or other staff in school settings (Colton, Roberts & Vanstone, 2010), and 8% of Canadian athletes have experienced sexual abuse while training or competing (Parent & Bannon, 2012). In the UK there have been reports of numerous cases of physical and sexual abuse of children in
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residential care (Colton et al., 2010), leading to estimates that 31-158 out of every 1000 children have experienced abuse in such settings (Sullivan & Beech, 2002; Gallagher, 1999). While a systematic mechanism for reporting and tracking organizational and institutional abuse is lacking, these findings clearly underscore a significant problem that necessitates additional attention. Taken together, these statistics indicate an ongoing concern about the very serious problem that CSA poses and the alarming number of children impacted.

Impact of CSA on Victims

The widespread nature of CSA perpetration is particularly alarming due to the negative outcomes experienced by many of its victims. Short-term impacts of CSA include anxiety, depression, fear, anger, aggressive behavior and sexually inappropriate behavior (Beitchman, Zucker, Hood, & Akman, 1991; Browne & Finkelhor, 1986; Tremblay, Hébert, & Piché, 1999). Long-term effects include anxiety, depression, self-destructive behavior, isolation, stigma, low self-esteem, distrust of others, substance abuse, sexual problems, and suicide attempts (Browne & Finkelhor, 1986; Pérez-Fuentes et al., 2013; Tremblay et al., 1999). However, not all victims experience the same type or severity of CSA outcomes. A number of abuse characteristics have been associated with a greater extent of harm experienced by CSA victims. These characteristics include a close relationship to the perpetrator, frequency and duration of the abuse, and abuse involving penetration, force, or violence (Putnam, 2003). The severity of these potential negative consequences, combined with reports of the prevalence of CSA, underscore the importance of developing effective prevention and intervention strategies. To better
understand CSA it is important to examine relevant theories related to its onset and maintenance.

Theory-Driven Approaches to CSA Prevention

There are several important theories with implications for describing and preventing CSA perpetration. The following sections will provide an overview of four theories relevant to CSA prevention: Rational Choice Theory; Routine Activity Theory; the Public Health Model; and the Situational Prevention Approach. Together, these theories create a strong foundation for effective evidence-based prevention of CSA perpetration.

Rational Choice Theory (RCT)

Rational Choice Theory (RCT) is a popular theory developed by Cornish and Clarke (2002) that attempts to explain why a wide variety of crimes occur. According to RCT, an offender decides whether to commit a crime by weighing the cost of detection or negative outcome against whatever benefit they might derive from committing the crime, such as money, power or sexual gratification. According to RCT, the final decision to act is based upon an internal “cost-benefit” analysis of these risks and rewards. RCT states that even when a crime seems impulsive or random, a series of small decisions on the part of the offender actually precedes the final act of perpetration. Factors identified in RCT that play into whether a particular offender choses to commit a crime in a given situation includes characteristics and past experiences of the offender, needs of the offender, and their perceptions of how different solutions may meet their needs, their reaction to chance events that arise in the situation, their readiness to commit a crime, and
ultimately, their final decision making process as to whether or not to commit the crime (Cornish & Clarke, 1986). Cornish and Clarke (1986) point out that criminals adopt a “crime-specific focus”, meaning that crimes will vary according to their specific circumstances in terms of the offenders’ needs and characteristics of the setting in which the crime may occur. As time passes and an offender commits a greater number of crimes, their decision-making process will evolve, being affected by their increased level of skill and criminal “professionalism,” changes in their values and lifestyle due to their past successes or failures in committing crimes, and finally, changes in their peer group that may lead to greater contact with deviant as opposed to non-deviant peers, as well as adopting the label of a criminal (Cornish & Clarke, 1986). This theory is useful in explaining a broad variety of crimes reflecting a wide range of severity and victim impact.

RCT has been used to explain a variety of sexual and non-sexual crimes in the literature since it was first developed in the mid-1980s. For example, RCT has been successfully applied to homicide (De Souza & Miller, 2012), assault (Reynald & Elffers, 2009; Schreck & Fisher 2004), burglary (Groff, 2007), cybercrime (Yar, 2005), domestic violence (Mannon, 1997), sexual offenses involving adults (Beauregard, Proulx, Rossmo, Leclerc, & Allaire, 2007), and the perpetration of child sexual abuse (Leclerc, Wortley & Smallbone, 2010). Notably, RCT has been used to explain how sexual offenders seek out child victims as well as how convicted serial sexual offenders engage in the “hunting” process (Proulx, Ouimet, & Lachaine, 1995; Beauregard, Rossmo & Proulx, 2007). These studies are important because they establish that sexual offenders engage in rational
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decision-making similar to non-sexual offenders (Beauregard et al., 2007). Together, these findings support the validity of RCT and highlight the importance of situational factors in determining the decisions an offender makes about whether to engage in a crime. For example, when a burglar is deciding which house to rob, they are likely to choose a house where no one is home, that is accessible to them, and that is away from neighbors and the street (Cornish & Clarke, 1986). This rational approach to crime has important implications for prevention practice and policy.

**Routine Activity Theory (RAT)**

Developed by Larry Cohen and Marcus Felson (1979), Routine Activity Theory (RAT) focuses on environmental determinants of crime and the three underlying factors that promote the perpetration of crime. These factors include: (1) the presence of a suitable victim; (2) the presence of a motivated offender; and (3) the absence of supervision (Cohen & Felson, 1979). RAT states that acts of crimes are not random, but rather are determined by the presence or absence of these key factors (Cohen & Felson, 1979). First, the presence of a suitable victim is represented by both the availability and the attractiveness of a crime victim or target (e.g. specific household) to a particular offender (Cohen & Felson, 1979). Second, the presence of a motivated offender reflects someone willing to commit a crime if the right circumstance should arise. Finally, a lack of supervision or guardianship is represented by the absence of any person or technology that might deter the crime from occurring (Tseloni, Wittebrood, Farrell, & Pease, 2004). Together, these three factors contribute to an understanding of how day-to-day routines may facilitate or deter crime.
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There are both strengths and limitations associated with RAT. For one, it has been successfully applied to a variety of crimes (Clodfelter, Turner, Hartman & Kuhns, 2008; Franklin, Franklin, Nobles, & Kercher, 2012; Mannon, 1997; Mustaine & Tewksbury, 1999; Vézina, Hébert, Poulin, Lavoie., Vitaro, & Tremblay, 2011; Tewkesbury & Mustaine, 2006). Further, RAT accounts for social structures such as families, neighborhoods and communities that may facilitate the likelihood of an offender engaging in illegal activities (Cohen & Felson, 1979). For example, RAT helps explain how an offender might take advantage of a parent’s work schedule or situations when a parent is highly distracted (e.g., caring for an ill younger child) to commit child sexual abuse. RAT also effectively explains why certain groups experience higher rates of victimization than others (Leclerc, Smallbone & Wortley, 2013). For instance, having a mother who works outside of the home may prompt higher risk routine activities on the part of their child, such as regularly walking home alone (Finkelhor & Baron, 1986). There are also some important limitations to RAT. For one, it was originally created to explain street crime and therefore may be more effective in explaining extra-familial abuse and less easily adapted to intra-familial CSA (Finkelhor & Asdigian, 1996). Children who are abused by their parents or family members are more consistently subject to risks associated with routine activities. Another significant limitation of RAT is that it fails to account for personal attributes, such as gender, in explaining the perpetration of particular types of crime (Finkelhor & Asdigian, 1996). In other words, female babysitters may find it easier to commit CSA without being detected due to
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societal beliefs that they don’t pose a serious risk to children. Despite these limitations, RAT has important implications for crime prevention.

The application of RAT to a variety of problem areas, including sexual crimes, has been well documented in the literature. RAT has been found to predict the sexual harassment of college students (Clodfelter et al., 2008), dating and domestic violence (Mannon, 2007; Vézina et al., 2011), sexual assault (Franklin et al., 2012), online harassment (Holt, Bossler & May, 2011; Marcum, Higgens & Ricketts, 2010), the stalking of women (Mustaine & Tewksbury, 1999) and the housing location of convicted sex offenders (Tewksbury & Mustaine, 2006). Also, Leclerc et al. (2010) found RAT to be predictive of the perpetration of CSA. Clearly, with its efficacy in addressing a broad array of crimes as well as its applicability specifically to sexual crimes, further research regarding RAT and CSA perpetration and further tailoring of interventions around RAT is warranted.

The Public Health Model

The public health model is an important community-oriented approach to prevention. The public health approach uses a culturally competent and data-informed approach to address violence at a population level (Centers for Disease Control and Prevention, 2004). There are four steps to the public health model: 1) Define the problem, 2) Identify risk and protective factors, 3) Develop and test prevention models, 4) Ensure widespread adoption (Centers for Disease Control and Prevention, 2004). In the first step, “Define the problem,” data is collected to see how widespread of a problem CSA victimization is in a particular population sub-group. Sources of data for the scope
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of the problem can include community resource centers, the criminal justice system, or surveys. In the second step (i.e., identify risk and protective factors), researchers identify the specific risk and protective factors that can be targeted for effective prevention programming. In the third stage, (i.e., develop and test prevention strategies), data is gathered from experienced practitioners and stakeholders using methods such as interviews or focus groups to develop and determine the effectiveness of prevention strategies. At this stage, rigorous evaluations of program effectiveness and implementation are undertaken to ensure that the program is effective. The fourth and final step (i.e., ensure widespread adoption) occurs after there is an adequate amount of data supporting the effectiveness of the program. At this stage, dissemination techniques are undertaken to ensure widespread program adoption. Techniques undertaken should include trainings, process evaluations to ensure fidelity, and outcome evaluations when applying the approach to new populations (Centers for Disease Control and Prevention, 2004). Following all four of these steps and using the most accurate evidence-based information available is critical to effectively applying the public health approach to prevention.

The Focus of Prevention Initiatives

The Center for Disease Control (2004) defines the prevention of sexual violence using the ecological model. This model accounts for the complex relationship between individual-level, interpersonal relationship-level, community-level and societal-level influences. The first level, individual-level influences, refers to biological and personal history factors that relate to sexual violence risk. At the next level, interpersonal
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relationship-level influences refer to family, peer and intimate partner relationships that can influence behavior. Next, community-level influences describe characteristics of environments such as neighborhood, schools, and workplaces that can create risk. Finally, societal-level influences are macro-level factors such as laws or policies, cultural beliefs and norms that contribute to tension between groups of people. This model is often depicted as a series of four embedded concentric circles with individual-level factors occupying the inner most circle, surrounded by interpersonal-relationship factors, which are both within the community-factors circle (See Figure 1.1). These three circles are contained in the outermost “social-factors” circle. This positioning of ecological levels reflects both level specific concerns and impacts as well as the way in which the presence of positive or negative factors at any given level causes a “ripple effect” at other levels of the model. The ecological model underscores the importance of both measurement and intervention across levels to ensure effectiveness. In particular, addressing sexual violence at multiple levels can contribute to more comprehensive prevention of sexual violence (Centers for Disease Control & Prevention, 2004). More research is needed in order to better establish risk and protective factors that exist at various levels.

**Timing of Prevention Interventions**

The public health model describes prevention occurring at three points in time and refers to these as: 1) Primary Prevention, 2) Secondary Prevention and 3) Tertiary Prevention (Centers for Disease Control and Prevention, 2004). At the earliest point in time, Primary Prevention targets entire populations, and aims to prevent crime before it
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happens by targeting risk factors. Secondary Prevention interventions target specific
groups within the population who have been identified as already showing signs of being
at risk to develop the target problem. Finally, Tertiary Prevention interventions take place
in groups who have already been exposed to or experienced the target problem (Centers
for Disease Control and Prevention, 2004). Ideally, prevention strategies should include
interventions to address individuals at each of the three stages, while remaining largely
focused on primary prevention. Unfortunately, at present, child sexual abuse (CSA)
intervention strategies tend to rely more heavily on tertiary prevention approaches, while
the goal is to shift the focus to the primary level to prevent problems from manifesting
(Smallbone, Marshall, & Wortley, 2013).

Who Prevention Targets

Another way in which interventions can be conceptualized according to the
Center for Disease Control (2004), is with an emphasis on who is the focus of the
intervention. Using this conceptualization, interventions can be described as universal,
selected or indicated. Universal interventions are aimed at the entire population. This can
be achieved either geographically, as in targeting a school or neighborhood, or based on
certain characteristics such as gender or age. Selected interventions focus on those who
may be at a higher risk of sexual violence. Finally, indicated interventions are targeted at
those who have already been victimized or already perpetrated sexual violence (Centers
for Disease Control and Prevention, 2004). While the timing of interventions (e.g.,
primary, secondary, tertiary) may be more commonly referred to than whom the
intervention targets, both are important in establishing a comprehensive conceptualization of interventions as part of the public health model.

**The Situational Prevention Approach (SPA)**

Another promising crime prevention approach is Situational Crime Prevention (Clarke, 1995). Situational Crime Prevention is a comprehensive primary prevention model based on theory that has been put into practice in to create safe housing for over sixty years and focuses on the immediate behavioral setting in which crimes take place (Kaufman et al., 2012; Wortley & Smallbone, 2004). It focuses on reducing crime through minimizing opportunities and increasing the chance of the offender being caught, as well as reducing rewards associated with perpetration and reducing the plausibility of excuses for criminal behavior (Clarke & Homel, 1997). Kaufman and his colleagues (Kaufman, Mosher, Carter & Estes, 2006), drawing on a combination of situational prevention, RAT and RCT, developed a version of this strategy for application in youth serving organizations that he refers to as “The Situational Prevention Approach” (SPA). At the core of the SPA model is a three-factor structure known as the “Crime Opportunity Structure,” which determines whether a potential offender will decide to perpetrate against a child. Factors in this model component are Victim Characteristics, Target Locations and Facilitators (Kaufman et al., 2006). Victim Characteristics focus on attributes that make a child more or less vulnerable to abuse. Example attributes could be age, gender, developmental delays or emotional neediness, as well as attributes of others who directly affect them, such as living in a single parent household or having a parent who is a substance abuser. The
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second factor, Target Locations, refers to areas that are at a high risk for abuse to take place due to their isolation, limited visibility or restricted access. The third factor, Facilitators, refers to any part of the setting or organization that might make crime more likely to take place. For example, inadequate staff training or high staff turnover in an organization could act as a facilitator for the presence of risks associated with CSA perpetration. Together, these three factors provide a solid foundation for prevention efforts.

Beyond these three primary factors are several other components that contribute to the SPA model. The first is Routine Activities, which can lead to an increase in risks beyond the core Crime Opportunity Structure. For example, the child’s routine activity of walking home alone after school may put him or her at heightened risk for abuse related to both increased Target Locations and Victim characteristics, (e.g., inadequate parental supervision). Another component is the Larger Physical Environment, which refers to attributes of buildings and neighborhoods that heighten CSA risk. Organizational Climate & Local Community Influences also contribute to CSA perpetration risk. Policies, procedures or cultural norms in place at an organization or local government could allow for certain offenders to remain undetected, or for prevention opportunities to be missed. For example, delayed background checks could allow perpetrators access to children. Finally, offender specific factors, such as likelihood of recidivism, as well as socioeconomic structures may also increase risks of CSA with the SPA model. Together, these factors paint a comprehensive picture of risk (See Figure 1.2).
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Strengths and Weaknesses of the Situational Prevention Approach

There are both strengths and weaknesses associated with the SPA for CSA prevention. With regard to strengths, SPA strategies can be easily applied in the context of institutions, many of which have been catalysts for CSA perpetration and abuses of power over the years (e.g., the Catholic Church; Terry, Smith, Schuth, Kelly & Vollman, 2011). Moreover, the implementation of the SPA has the potential to prevent, not just CSA perpetration, but also a whole spectrum of sexual and non-sexual crimes and other potential dangers for children and teens (e.g., accidents, health concerns, consequences of physical aggression), across a broad variety of settings (Kaufman et al., 2012). Another strength of the SPA is that it moves away from child-focused prevention strategies that have been criticized for placing a developmentally inappropriate responsibility on children to protect themselves against adults and older teens, who are much better equipped to manipulate and coerce them (Renk, Liljequist, Steinberg, Bosco & Phares, 2002). A criticism of situational prevention is that it has the potential to create rules and policies that are overly invasive. However, Wortley (2010) responds to this criticism by noting that checks and balances exist to ensure that safety is balanced with freedom, such as exists with airport security checks and bank monitoring of credit card fraud. Another criticism of situational prevention is that it only displaces crime (e.g., offenders discouraged from applying at one organization may seek a position at another). However, research indicates that situational factors are important in determining the occurrence of crime, separate from criminal disposition. For example, a study of 102 situational crime prevention evaluations found that displacement occurred in only 26% of interventions,
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and when displacement did occur, it tended to be of lesser severity (Guerette & Bowers, 2009). In conclusion, the SPA is a promising new approach. Since it is relatively new approach, SPAs efficacy still must be established across various settings.

Modus Operandi

In order to effectively target sexual offenders’ perpetration of CSA, the SPA can be tailored to offenders’ most likely modus operandi in different types of settings (Kaufman et al., 2012). Modus operandi (MO) is defined by Kaufman et al., (1996, p. 18) as “a pattern of behaviors a perpetrator displays in the period prior to, during, & following illicit sexual contact.” Studies throughout the years have supported the existence of such patterns (Kaufman, Hilliker & Daleiden, 1996; Leclerc et al., 2013), which involve the offenders’ use of various strategies that take place along a temporal continuum. CSA modus operandi usually begins with the offender gaining access to a potential victim, “grooming” them, and in some cases their parent(s) to foster trust, seeking or creating opportunities to be alone with the potential victim, using bribes and enticements and/or threats and coercion to gain compliance in abusive acts, and finally, working to obtain the victim’s silence about the abuse (Kaufman et al., 2012). Understanding which strategies different types of offenders (e.g., adult vs. adolescent) tend to use, based on variations in children’s characteristics (e.g., young children vs. older teens, males vs. females) and key situational factors (e.g., familial, leisure setting with minimal supervision, highly structured school setting) has important implications for the development and implementation of CSA prevention and intervention strategies. For example, if a supervisor at a community center knows which strategies are typically used
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to gain a young child’s (e.g., 6-8-year-old) trust (e.g., “special attention,” gifts, time alone) by adult staff and volunteers, he or she can advocate for policies that restrict such behaviors in that setting. This may lead to more effective staff safety practices around such things as taking children to the rest room or contact with children outside of program hours. The supervisor can also educate staff to be more vigilant in monitoring the behavior of staff and volunteers while interacting with children in the program. These strategies can be incorporated into the use of the SPA in the community settings to ensure that related situational risk factors (e.g., unlocked, unused rooms, staff who may be alone with children who need help in the restroom, transportation of youth on field trips) are identified and addressed to enhance youth safety (Kaufman et al., 2012). This systematic method of assessing risks and vulnerabilities and linking those risks to prevention or risk reduction strategies (i.e. the SPA) is fairly simple to implement and provides a basis for low cost comprehensive interventions that target crime at multiple levels (Kaufman et al., 2012).

The Application of Modus Operandi to Prevention Strategies

As already noted, the differential use of modus operandi strategies or more frequent use of certain strategies based on offender, victim or situational characteristics is important to consider in planning CSA prevention efforts (Kaufman et al., 1996) and requires careful consideration. For instance, adolescent intra-familial offenders (e.g., siblings, cousins) adopt certain types of strategies, such as giving gifts to gain victim’s trust, more frequently than extra-familial adolescent offenders who may be more likely to use drugs and alcohol (Kaufman et al., 1996). Another example involves the fact that
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adolescent offenders appear to use more modus operandi strategies, in general, than their adult counterparts in perpetrating CSA (Kaufman et al., 1998). Finally, in a youth serving organization that has its own swimming pool, the locker room, adjacent bathroom stalls, and showers may represent locations where the risk of CSA is particularly high. Recognition of these important “red flag” behaviors can provide a framework to assist parents, supervisors and organizational staff remain vigilant for particular modus operandi or “grooming patterns” to keep children in their care as safe as possible. At the same time, attention to risky organizational locations can prompt the development of specific prevention strategies to address these concerns. Information regarding sexual offenders and their modus operandi can be a powerful prevention tool if utilized in an effective and culturally appropriate manner.

Risks for Child Sexual Abuse

Research reveals that CSA offenders are a heterogeneous group, yet some important systematic subgroup differences have been identified. First, differences between Juvenile Sexual Offenders (JSOs) and Adult Sexual Offenders (ASOs) have been noted. A second distinction between intra-familial sexual offenders and extra-familial offenders has also been made. The following section will detail characteristics of offenders related to these important subgroup distinctions.

Adult Versus Juvenile Sexual Offenders

Early research findings on JSOs failed to account for the differences in behavior, motivation, and prognosis between JSOs and ASOs, but subsequent research has revealed that they are in fact distinct groups (Finkelhor, Ormrod & Chaffin, 2009). JSOs represent
a subtype of offender that have been found to commit over one-third of the sex crimes perpetrated against children (Finkelhor et al., 2009). JSOs differ from ASOs in some key ways, including their use of different grooming strategies along the modus operandi continuum. For example, ASOs often rely on their authority over victims to gain compliance in sexually abusive behaviors and to maintain victim silence following abuse onset. JSOs, on the other hand, are less likely to have as high a level of authority or control over their victims. Perhaps as a result, they are more likely to rely on a broad array of modus operandi strategies and more frequent use of a broad range of strategies to gain control over their victims, such as the use of bribes and enticements, threats, coercion, and strategies to maintain silence (Kaufman et al., 1998). These major differences in grooming strategies between JSOs and ASOs have important implications for parents and caregivers who might be looking for “red flags” related to CSA.

Further, rates of CSA offending vary across the life cycle. At age 12, there is a surge in rates of sex offences that levels out at age 14. This is the peak age for JSO’s offending against younger children. In later adolescence, there are reported increases in sex offenses against younger teens (Finkelhor et al., 2009). Later, CSA perpetration peaks again in men in their mid to late thirties (Abel, Osborn & Twigg, 1993). Some would argue that sexual offending begins in adolescence and persists throughout the lifetime; however, reports from adult offenders indicate that a majority did not begin offending in their adolescence (Righthand & Welch, 2004), and studies consistently find recidivism rates for JSOs to be low (Caldwell, 2016; Finkelhor, Ormrod & Chaffin, 2009).
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Male Versus Female Offenders

For the most part, both JSOs and ASOs are overwhelmingly male. A review by Cortoni and Hanson (2005) found that the prevalence of female sexual offenders ranged from .6% in New Zealand to 8.3% in the US. Some research has focused special attention on the behavior of female offenders. For instance, research has found that female JSOs are more likely to be young, have victims who are male and related to them, have multiple victims, and engage in a higher frequency of offending than their male counterparts (Finkelhor et al., 2009). While it is important to understand the particularities of female sexual offending, the overwhelming majority of apprehended offenders are male, suggesting that focusing on males is likely the best course for prevention.

Intra- Versus Extra-Familial Offenders

Another important distinction in CSA offender characteristics is related to the difference between intra-familial and extra-familial offenders. One conceptualization of intra-familial CSA involves abuse by someone who is from the same family as the victim, and may or may not be living in the same household, such as a parent, stepparent, cousin or sibling (Fischer & McDonald, 1998). Other studies define intra-familial CSA as abuse perpetrated by any person residing in the same household as the victim, such as parents, stepparents, a parent’s romantic partner, siblings or foster siblings (Kaufman et al., 1998). Extra-familial sexual abuse typically involves abuse by someone outside of the family. Examples of extra-familial abusers could be teachers, coaches, friends, neighbors, acquaintances or strangers (Fischer & McDonald, 1998). Intra-familial abuse
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is thought to have a longer duration and higher frequency of incidents than extra-familial abuse (Fischer & McDonald, 1998). Extra-familial offenders, on the other hand, are more likely to have a greater number of victims and victims who are male (Abel et al., 1993). Intra- and extra-familial offenders have also been found to differ in their use of various modus operandi strategies. For instance, in one study, intra-familial JSOs used a greater number of bribes and enticements to gain victim trust and compliance, and a greater number of threats and coercion to maintain silence than extra-familial JSOs (Kaufman et al., 1996). Another study comprised of both JSOs and ASOs found that extra-familial CSA offenders used alcohol and drugs to gain victim compliance more often than intra-familial CSA offenders, while intra-familial offenders are more likely to use bribes and enticements (Kaufman et al., 1998). These are important distinctions for understanding patterns of offending and their implications for prevention.

What Puts Children at Risk For CSA?

There are several factors that can potentially contribute to CSA victimization risk in children. When a number of these factors converge, it often results in a child who is at higher risk for CSA victimization. First, studies on gender differences have consistently found girls to be at a higher risk for CSA than boys. This difference likely holds true even in spite of reporting differences between genders (e.g., lower for boys; Finkelhor & Baron, 1986). Studies examining victimization differences between males and females have found that males are more likely to experience intrusive forms of abuse (e.g., oral and anal abuse), and more likely to experience threats, whereas females are more likely to experience a higher frequency of touching and fondling (Kendall-Tackett & Simon 1992;
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Ketring & Feinauer, 1999). All children are at risk in terms of age, but some research has indicated that children are most vulnerable between the ages of 7 and 13 years of age (Finkelhor, 1994; Finkelhor & Baron, 1986). It is important to note that this peak in offending may be skewed due to the fact that younger children are less likely to disclose and/or more likely to repress memories of abuse. Unlike other forms of child abuse, CSA victimization does not appear to be related to social class. Another risk factor for CSA victimization is social isolation, although it is unclear whether social isolation is actually a risk factor, or whether it is a consequence of abuse. (Brown, Cohen, Johnson, & Salzinger, 1998; Finkelhor & Baron, 1986; Seto & Lalumiere, 2010). Other important CSA risk factors are related to victims’ parents. CSA victimization has been associated with living without their biological father or living with a stepfather, having a mother who works outside of the home, having a mother who is ill or disabled, witnessing conflict between parents and having a poor relationship with one parent (Bagley, Thurston & Tutty, 2006; Finkelhor & Baron, 1986; Walsh, MacMillan, & Jamieson, 2003). Despite the existing evidence on CSA victimization risk, further research is needed to identify new risks as well as determine how risk factors may vary by developmental stage or in response to other demographic factors, such as ethnicity.

The previous sections indicate that there are many risk factors associated with CSA perpetration. These risk factors are important to consider when forming prevention interventions. Another seemingly important piece of CSA prevention is the monitoring or supervision of children. The following sections will detail how supervision has been
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conceptualized in the research literature and how it acts as a protective factor against CSA perpetration.

Parental monitoring and CSA Perpetration

Within the SPA prevention framework, a lack of supervision would be related to increased risk, while better supervision is related to reduced crime perpetration (Kaufman et al., 2012). Parental monitoring has been conceptualized differently in different literatures, but it refers to the same phenomena of tracking a child or children’s whereabouts in order to protect them from harm. In the psychology literature, supervision is referred to as parental monitoring, whereas in the criminology literature, supervision is referred to as guardianship (Cohen & Felson, 1979; Dishion & McMahon, 1998). According to Merriam-Webster, supervision is the action or process of watching and directing what someone does or how something is done. Typically, a child’s primary supervisor consists of one or more primary supervisors, such as a parent or guardian, and they may have additional supervisors throughout the day such as a teacher, camp counselor, family member or babysitter. Sometimes, a child may have multiple supervisors tracking them at once, other times, a single supervisor may have to track multiple children.

In order for CSA perpetration to occur, either parental supervision or parental judgment are often lacking (Crosson-Tower, 2005). Supervision can also affect the severity and duration of CSA. A recent study found that the mere presence of another person, when controlling for victim and situational characteristics, reduced the duration of sexual contact and reduced the occurrence of penetration in CSA by 86% (Leclerc et
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al., 2013). This section will summarize how two conceptualizations of parental monitoring, parental monitoring and guardianship, are defined in the literature.

Parental Monitoring and CSA Perpetration

The parental monitoring literature provides important clues as to how parents provide effective supervisions for their kids. The following section summarizes how parental monitoring has been defined and how it has been measured, followed by a discussion of how parental monitoring has been applied to various CSA outcomes. Despite the paucity of research in this area, defining and understanding the nuances of how parental monitoring relates to CSA perpetration can be an important piece of CSA prevention.

Defining Parental Monitoring

Parental monitoring is defined as “a set of correlated parenting behaviors involving attention to and tracking of the child’s whereabouts, activities, and adaptations” (Dishion & McMahon, 1998, p. 61). In the injury prevention literature, there are three primary facets of supervision that are generally agreed upon. These include: (1) visual and auditory attention to the child; (2) physical proximity to the child; and (3) continuity of supervision (Schwebel & Kendrick, 2009). Visual attention refers to the degree to which a caregiver watches and listens to a child. Physical proximity refers to how close the caregiver is to the child, ranging from touching, such as helping teach a small child to swim, to being in another location, such as a parent who intermittently checks on children playing in the next room. Finally, continuity of supervision is an indication of how often the caregiver is supervising versus how often they are distracted or involved in other
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tasks (Schwebel & Kendrick, 2009). When implemented, these supervision components vary according to the environment and developmental needs of the child or children being monitored. For example, an older child playing in their room may require only intermittent auditory and visual attention, while a toddler in a busy public location would require a high continuity of attention and supervisor proximity. These facets are hierarchical, such that each is dependent on one another in order to be effective (Schwebel & Kendrick, 2009). For example, visual attention will be ineffective if the proximity to the child is not close enough to prevent injury if a risk arises, and a supervisor at close proximity will not be effective if there is little continuity of supervision. Parental monitoring looks different in different situations, yet it is always represented by active efforts on the part of caregivers to protect children.

Measuring Parental Monitoring

Parental supervision has been measured in the literature via naturalistic observation, laboratory simulations and self-report measures. Each approach has advantages and disadvantages. Naturalistic observation provides a realistic portrayal of supervisor behaviors. Logistically, however, measuring supervision long enough to capture its relationship to low base rate phenomenon such as injuries or CSA victimization would be invasive, unethical, and require a great deal of resources. Another way to assess supervision is via laboratory-based observation of parent and child dyads engaging around simulated hazards (Schwebel & Kendrick, 2009). This method provides a clearer picture of parental behaviors in response to risks, but it is important to note that supervisors may be regulating their behavior in a socially desirable manner in response to
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observation, and the simulated situations may lack ecological validity. A final method of measurement is through the use of self-report measures or diary methods (Scwebel & Kendrick, 2009). This approach can be administered while caregivers participate in simulated laboratory situations or following an event, such as a child’s accidental injury (Saluja et al., 2004). Self-report and diary measures may be less subject to social desirability biases than observation in establishing supervisor behavior. Despite this strength, diary and self-report measures of parental monitoring have been criticized for tapping into what the parent knows about the child’s whereabouts, rather than active tracking and checking on the child (Stattin & Kerr, 2000; Racz & Mcmahan, 2011). Each method of measuring parental monitoring is not without its limitations. Observation can require a great deal of resources, be invasive and subject to social desirability bias, and self-report measures can also elicit social desirability bias and fail to capture the true phenomenon. Despite these limitations, replicating measures of supervision across these methods and developing new methods of measurement can help researchers paint a suitable picture of effective monitoring.

One important aspect of measuring parental monitoring is risk perception (Saluja et al., 2004). Caregiver, child, and environmental characteristics have a bidirectional and complex relationship that together determine the risk perception of the caregiver. In order for studies to truly capture supervisor behaviors, it is imperative that they account for this complex relationship. The fact that caregiver over-protection is undesirable both further complicates risk perception, and lends support to the fact that ignoring the complexity and contextual factors influencing risk perception will result in distortions in our
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understanding of parental monitoring perception (Saluja et al., 2004). Findings suggest that accounting for risk perception and factors that influence risk perception is key to understanding monitoring behaviors.

Parental Monitoring Findings

Researchers have found parental monitoring to be associated with a number of child outcomes. In observational studies, verbal and physical strategies used to divert children away from danger have been associated with a reduction in child injuries (Saluja et al., 2004). It is likely, however, that these supervisory behaviors change across different contexts, and should be studied further in order to more fully determine the impact of contexts on these behaviors (Saluja et al., 2004). Other studies relying on supervisor self-reports have examined the role of parental monitoring in preventing child victimization, but results in this area have been inconsistent. Esbensen, Huizinga and Menard (1999) found parental monitoring to be a moderate negative predictor of child victimization. In contrast, Turner, Finkelhor & Ormrod (2007) found parental monitoring to be a positive predictor of child victimization, perhaps due to the fact that child victimization leads to increases in parental monitoring in response to the original victimization. Overall, findings from parental monitoring studies indicate that it has potential as an area of prevention research, but methodological improvements are needed in order to better clarify the relationship between key variables of interest.

In conclusion, a thorough review of all literature relating to parental monitoring indicated that it is a concept related to many child outcomes, including CSA perpetration. Despite the wide acceptance of its importance, the protective features of parental
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monitoring are poorly understood. Better understanding the complexities of parental monitoring in different contexts is needed in order to effectively apply parental monitoring recommendations to intervention efforts.

Guardianship and Routine Activity Theory

Another way in which supervision can be defined is through “guardianship,” which comes from the criminology literature and is considered part of Routine Activity Theory (RAT). As previously noted, RAT examines how every day routines contribute to risk and suggests that three key factors facilitate crime: (1) the presence of a suitable victim; (2) the presence of a motivated offender; and (3) a lack of supervision (Cohen & Felson, 1979). Risk related to the third factor, a lack of supervision can, be mitigated using what RAT refers to as a “guardian.” The following section will review how guardianship is defined, followed by an overview of how guardianship can overcome various common barriers to effectively monitoring children.

Defining Guardianship

Guardianship is defined as the presence of any person who can deter a crime. According to Cohen and Felson (1995) there are two types of guardians who can prevent victimization. A “capable guardian” is a direct supervisor who has the ability to step in and prevent a crime from taking place, such as a parent. A “potential guardian,” by contrast, is any individual who might not be acting as a supervisor, but whose mere presence may deter a crime from taking place. Introducing guardianship to account for “lack of supervision” can help to explain why crime takes place according to RAT.
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Guardianship Findings

Despite being a core component in Cohen and Felson’s (1986) original theory, the lack of a potential guardian as a risk factor for crime has received less attention in the literature than the other two facets of RAT (e.g., the presence of a suitable victim and the presence of a motivated offender; Tewksbury, Mustaine & Stengel, 2008). Further, studies that have examined guardianship roles in preventing crime have had inconclusive findings (Tewksbury et al., 2008; Tewksbury and Mustaine, 2003). One reason past studies have had inconclusive findings may be related to a lack of psychometrically sound measures. For example, a study that measured guardianship in terms of the presence of police and fire stations, number of “active block watches” and unemployment rates failed to find a relationship between guardianship and sexual offenses (Tewksbury et al., 2008). This brings into question why these particular measurements of guardianship were expected to have a measurable effect on sexual crime. Additional research is necessary in order to determine what variables related to guardianship may have protective factors, as well as what types of guardians, such as community members, parents or police officers, may better predict the perpetration of crime and their prevention.

Extending Guardianship

Extending guardianship refers to ways in which supervision can be enhanced beyond the efforts of a primary supervisor to other forms of surveillance in the community. Criminological theory has found the strict control of adolescent behaviors by their parents to be relatively ineffective as a prevention strategy due to the amount of
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time adolescents spend away from their parents (Well and Rankin, 1988). One way to more effectively address this issue is through the development of policies that extend guardianship to other responsible adults in public places and youth focused community organizations. For example, guardianship may be extended by: increasing formal surveillance with security cameras; making greater use of “place managers” such as security guards or crossing guards; reducing the anonymity of potential offenders by having community centers check IDs; increasing natural surveillance (e.g., moving a play area to a location that can be easily seen by supervisors); and creating policies that prevent children from interacting alone with other adults or older teens (Clarke, 1995; Felson, 1995). Youth Serving Organizations (e.g., Big Brothers and Big Sisters, YMCA) are important sources of extended guardianship for children where these policies can be implemented. Research suggests that despite offenders’ skill at circumventing supervision, these strategies do provide a protective role in reducing risks related to child victimization. Nonetheless, there is still a great deal to be learned about the characteristics of guardianship that make it more or less effective in preventing CSA victimization.

In conclusion, guardianship provides another way in which supervision of children can be theoretically conceptualized. Accounting for guardianship helps to better describe crime risk according to RAT. Better understanding how and when guardianship is effective in deterring crime is an area that requires further research.
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The Present Investigation

While parental monitoring is often considered one of the first lines of prevention for child abuse and juvenile offending, there is a paucity of research to support these claims (Kaufman et al., 2012, Tewksbury, et al., 2008). The next three chapters present three studies that help to elucidate the relationship between parental monitoring and effective prevention for youth, filling critical gaps in the crime prevention and child development literatures. The first study (chapter II) found that the parents’ routine activities are related to JSO supervisor status, and that JSO supervisor status is related to grooming patterns. The second study (chapter III) found evidence of differences in parental monitoring between parents of JSOs, JDs, and JCs (Stewart, Sitney, Kaufman, DeStefano, & Bui, 2019). The final study (chapter IV) described the development of the first quantitative measure of technology based parental monitoring for parents of teens. A series of exploratory regressions were conducted between the resulting measure and a variety of participant demographics. Together, these findings have important implications for parental caregivers, policy makers, and treatment providers.
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Figure 1.1 Ecological Systems Theory
Adapted from Bronfenbrenner (1994)
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Figure 1.2 The Situational Prevention Model for Child and Adolescent Sexual Abuse
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CHAPTER II. MANUSCRIPT I. INVESTIGATING THE RELATIONSHIP BETWEEN SUPERVISOR STATUS AND THE MODUS OPERANDI OF JUVENILE SEXUAL OFFENDERS

Abstract

A significant proportion of child sexual abuse perpetration is committed by juvenile sexual offenders (JSOs), a subgroup of offenders whose patterns of offending, or “modus operandi,” have been found to be markedly different compared to their adult counterparts (Kaufman et al., 1996; Kaufman et al., 1998). Sometimes JSOs commit sexual abuse while acting as a babysitter, or a temporary supervisor to their victim. The present study investigates the routine activities of JSOs and their victims’ caregivers that are associated with the JSO being placed into a supervisory role. The study also investigates subgroup differences in the use of modus operandi strategies between JSO supervisors and non-supervisors. Data from this study included 370 JSO participants from four states. Results indicated that parents’ needs’ for childcare assistance predicts JSO supervisor status over perpetrators efforts to get the child alone and disruptions to parents lives. Furthermore, JSO acting as a supervisor was associated with more frequent use of modus operandi strategies overall and more frequent use of bribes and enticements to gain their victims compliance. There were no differences between JSO supervisors and non-supervisors on the threats and coercion subscale. Finally, no victim characteristics JSO characteristics, or disruptions to parents lives, significantly moderated the relationship between JSO supervisor status and strategic grooming. Findings have important implications for research and policy related to child sexual abuse prevention and intervention.
Introduction

Supervising children is one strategy generally accepted as an important line of prevention against Child Sexual Abuse (CSA), and it is central to many prevention theories, however it has been surprisingly under researched (Rudolph & Zimmer-Gembeck, 2016). Better recognizing how offenders subvert supervisor’s efforts to protect their children can provide important clues as to where parents and interventionists can focus prevention efforts. One way Juvenile Sexual Offenders (JSOs) subvert supervision efforts is by assuming the role of supervisor themselves. They might assume the role of babysitter, or volunteer to help with childcare tasks while parents are busy or overburdened. The following section provide an overview of this problem through a brief review of relevant theories and research findings relating supervision to sex offender’s efforts at grooming their victims.

Parental monitoring and CSA Perpetration

Supervision has been conceptualized differently in different literatures, but it refers to the same phenomena of tracking a child or children’s whereabouts to protect them from harm. Parental monitoring is defined in the psychology literature as “a set of correlated parenting behaviors involving attention to and tracking of the child’s whereabouts, activities, and adaptations” (Dishion & McMahon, 1998, p. 61). There are three primary facets of supervision that are generally agreed upon. These include: (1) visual and auditory attention to the child; (2) physical proximity to the child; and (3) continuity of supervision (Schwebel & Kendrick, 2009). When implemented, these supervision components vary according to the environment and developmental needs of
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the child or children being monitored. For example, an older child playing in their room may require only intermittent auditory and visual attention, while a toddler in a busy public location would require a high continuity of attention and supervisor proximity. They are also hierarchical and inter-dependent, such that each is dependent on one another in order to be effective (Schwebel & Kendrick, 2009). For instance, visual attention will be ineffective if the proximity to the child is not close enough to prevent injury if a risk arises, and a supervisor at close-proximity will not be effective if there is little continuity of supervision. Parental monitoring looks different in different situations, yet it is always represented by active efforts on the part of caregivers to protect children.

Another way to conceptualize supervision is through guardianship, which comes from the criminology literature and is part of Routine Activity Theory (RAT). RAT examines how every day routines contribute to risk and suggests that three key factors facilitate crime: (1) the presence of a suitable victim; (2) the presence of a motivated offender; and (3) a lack of supervision (Cohen & Felson, 1979). Risk related to the third factor, a lack of supervision can, be mitigated through guardianship. Guardianship is defined as the presence of any person who can deter a crime. More specifically, a capable guardian is a someone whose presence prevents a crime from taking place, and a potential guardian, is an individual who may or may not effectively prevent a crime through their presence or intervention (Felson, 1995). Furthermore, extended guardianship refers to ways in which supervision can increase past a primary supervisor to other forms of surveillance in the community. For example, guardianship may be extended by: increasing formal surveillance with security cameras; making greater use of
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“place managers” such as security guards or crossing guards; reducing the anonymity of potential offenders by having community centers check IDs; increasing natural surveillance (e.g., moving a play area to a location that can be easily seen by supervisors); and creating policies that prevent children from interacting alone with other adults or older teens (Clarke & Eck, 2005; Felson, 1995). A strength of guardianship is that it accounts for typical barriers that arise when it comes to providing effective supervision for a child or adolescent that cannot be addressed through parental monitoring. Parents are important sources of guardianship, but even in the best of circumstances, their direct supervision is not consistent over time (Demo, 1992; Well and Rankin, 1988). Moreover, as children grow older, they are more likely to be trusted to be on their own and left without direct supervision (Schwebel et al., 2011). Research suggests that despite offenders’ skill at circumventing supervision to some extent, these strategies do provide a protective role in reducing risks related to child victimization. Nonetheless, there is still a great deal to be learned about the characteristics of guardianship that make it more or less effective in preventing CSA victimization.

The Situational Prevention Approach

Situational crime prevention is an example of a primary prevention model that focuses on the immediate behavioral setting in which crime such as CSA takes place (Wortley & Smallbone, 2006). It focuses on reducing crime through minimizing opportunities and increasing the chance of the offender being caught, as well as reducing rewards associated with perpetration and reducing the plausibility of excuses for criminal behavior (Clarke & Homel, 1997). Within a situational prevention framework, a lack of
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supervision would be related to increased risk, while better supervision is related to reduced crime perpetration (Kaufman et al., 2012). Kaufman and his colleagues (Kaufman, Mosher, Carter & Estes, 2006), drawing on Routine Activity Theory and Rational Choice Theory, further developed this model for application in youth serving organizations, calling their method “the Situational Prevention Approach” (SPA).

There are strengths and weaknesses associated with the SPA for CSA prevention. For one, SPA strategies can be easily applied in the context of institutions, many of which have been catalysts for CSA perpetration and abuses of power over the years (e.g., the Catholic Church; Terry, Smith, Schuth, Kelly & Vollman, 2011). A criticism of situational prevention is that it has the potential to create rules and policies that are overly invasive. However, Wortley (2010) responds to this criticism by noting that checks and balances exist to ensure that safety is balanced with freedom, such as exists with airport security checks and bank monitoring of credit card fraud. Another criticism of situational prevention is that it only displaces crime (e.g., offenders discouraged from applying at one organization may seek a position at another), however a study of 102 situational crime prevention evaluations found that displacement occurred in only 26% of interventions, and when displacement did occur, it tended to be of lesser severity (Guerette & Bowers, 2009). SPA is a promising new approach, but since it is relatively new, efficacy still must be established across various settings. The SPA has potential to prevent not just CSA perpetration, but also a whole spectrum of sexual and non-sexual crimes, injuries and accidents in a broad variety of settings (Kaufman et al., 2010).

Modus Operandi
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To effectively target sexual offenders’ perpetration of CSA, situational prevention can be tailored to offenders’ most likely modus operandi in different types of settings (Kaufman et al., 2010). Modus operandi (MO) is defined by Kaufman, Hilliker and Daleiden (1996, p. 18) as “a pattern of behaviors a perpetrator displays in the period prior to, during, & following illicit sexual contact.” Studies throughout the years have supported the existence of such patterns (Kaufman et al., 1996; Kaufman et al., 1998; Leclerc, Proulx & Beauregard, 2009), which involve the offenders’ use of various strategies that take place along a temporal continuum. CSA modus operandi usually begins with: the offender gaining access to a potential victim; grooming them, and in some cases their parent(s) to foster trust; seeking or creating opportunities to be alone with the potential victim; using bribes and enticements and/or threats and coercion to gain compliance in abusive acts; and finally, working to obtain the victim’s silence about the abuse (Kaufman et al., 2010). Understanding which strategies different types of offenders (e.g., adult vs. adolescent) tend to use, based on variations in children’s characteristics (e.g., young children vs. older teens, males vs. females) and key situational factors (e.g., familial, leisure setting with minimal supervision, highly structured school setting) has important implications for the development and implementation of CSA prevention and intervention strategies. For example, if a supervisor at a community center knows which strategies are typically used by offenders to gain a young child’s trust (e.g., special attention, gifts, time alone) by adult staff and volunteers, he or she can advocate for policies that increase vigilance around, and perhaps restrict, such behaviors in that setting. This systematic method of assessing risks and vulnerabilities and linking
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those risks to prevention or risk reduction strategies is simple to implement and provides a basis for low cost comprehensive interventions that target crime at multiple levels (Kaufman et al., 2010).

Past research

Research has identified distinguishing factors among groups of CSA offenders in their use of strategies across the MO continuum. For example, adolescent sex offenders use a greater number and frequency of modus operandi strategies than their adult counterparts to gain victim silence and compliance, and intra-familial offenders are more likely to use gifts to gain victim’s trust (Kaufman et al., 1996). Differences based on victim age reveal that juveniles with older victims tend to use more force or violence (Aebi, Vogt, Plattner, Steinhausen, & Bessler, 2012; Fanniff & Kolko, 2012). Sex differences also exist in apprehended offenders, such that a majority are male and a majority of victims are female (Cortoni & Hanson 2005; Finkelhor, Ormrod & Chaffin, 2009). Despite these important findings, there are additional critical distinctions related to sexual offenders’ modus operandi strategies that are yet to be identified, such as how offenders adjust their MO strategies based on supervision of their victim.

Thus far, parental monitoring has been only loosely related to CSA perpetration and modus operandi strategies. For instance, children who are left unattended have been found to be targets for abuse (Elliot, Browne & Kilcoyne, 1995). Further contributing to the idea that parental monitoring is important to CSA prevention is the fact that certain parent characteristics have been linked to an increased risk of child sexual abuse. Examples include less formal education, greater amounts of absenteeism from the home,
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single mother households and parental substance use (Bagley, Thurston & Tutty, 2006; Walsh, MacMillan, & Jamieson, 2003). Interventions can be targeted around children who are exposed to these parent risk factors, however better elucidating the nature of these risks may reveal a variety of more effective directions for CSA prevention and intervention (Bagley et al., 2006; Walsh et al., 2003).

Despite being a core component in Cohen and Felson’s (1979) original theory, lack of a potential guardian as a risk factor for crime has received less attention in the literature then the other two facets of RAT (e.g., the presence of a suitable victim and the presence of a motivated offender; Tewksebury, Mustaine & Stengel, 2008). Several studies of apprehended offenders indicate that offenders are willing to commit CSA in the presence of others (Leclerc, Smallbone & Wortley, 2015; McKillop, Brown, Wortley & Smallbone, 2015; Underwood, Patch, Cappellety & Wolfe, 1999). While the presence of others does not appear to be a deterrent for a substantial group of offenders, Leclerc et al., (2015) did find that the presence of others decreased both the duration and the occurrence of penetration in cases of CSA (Leclerc et al., 2015).

Guardianship has been previously linked to time and location of CSA offences. Walker, Golden and VanHouten (2001) found that adult sexual offenders live and congregate in areas with high concentrations of children, supporting the notion that sex offenders seek child victims in public places. A previous study by Sasse (2005) that found age of sexual victimization is consistent with the age at which children are started to be allowed time free from parental supervision. A more recent study using latent profile analysis model on 147 ASOs and found that demographic variables such as “being
at home” or “being out” were insufficient for measuring guardianship (Pedneault & Beauregard, 2014). Together, these results suggest that measures of “being out” versus “being at home” may not sufficiently capture the dynamics involved in many cases of CSA (Pedneault & Beauregard, 2014). Additional research is necessary to determine what variables related to guardianship may have protective factors, as well as what types of guardians, such as community members, parents or police officers, may better prevent the perpetration of crime. Current models of parental monitoring have evolved to account for personal characteristic, social and ecological factors that may influence supervision decisions. Guardianship can serve as a compliment to parental monitoring measures by accounting for potential and extended guardianship above and beyond direct parental supervision.

**Current Study**

The purpose of the current study is to determine how strategies used by JSOs to commit CSA differ according to their supervisory status. It’s likely that factors related to JSO efforts, parents’ need for child care assistance, and factors that interfere with parents’ ability to adequately care for their children all contribute to the chances of a JSO being placed in the role supervisor for a child. It also follows that the supervisory role affords the juvenile a certain degree of status and power that likely translates into a diminished need to use modus operandi strategies to involve children in the process that leads up to sexual abuse (e.g., as compared to JSOs who are not in a supervisory role). At the same time, it is likely that characteristics of the JSO, their victim, and the victim’s parent (i.e., regarding their availability to supervise) will impact supervision in such a
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way that the JSOs’ use of various manipulative and coercive modus operandi strategies are altered as they proceed toward their goal of offending against the child in their care. Findings associated with supervision and its relationship to a JSOs choice of modus operandi strategies have implications for prevention within a Routine Activities Theory framework.

This study will expand on measures of parental monitoring and guardianship through use of a unique measure of supervision drawing from offender reports. A clear theme in both the parental monitoring and RAT literature is that “adequate supervision” often looks different based on the developmental stage of the child and on other significant contextual factors such as the supervisor’s perception of risk (Leclerc et al., 2015; Racz & Mcmahan, 2011; Saluja et al., 2004; Stattin & Kerr, 2000). Improving upon this research will help to determine how caregiver supervision can protect against a host of negative outcomes for children in differing contexts.

Methods

Participants
The present study is part of a larger, ongoing investigation by Dr. Keith Kaufman and his colleagues on sex offenders’ patterns of perpetration (e.g., “modus operandi”) and the impact of parental supervision on offending behavior (supported by CDC Grant R49/CCR016517-01). The original subsample consisted of 854 offenders, 370 of who were juvenile sexual offenders (JSOs), are the focus of this study. JSOs were recruited from offender facilities located in Florida, Oregon, New York and South Carolina. Seventy-four percent of the sample (n = 248) reported being a student as their primary
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job before they were incarcerated. The average age those participants reported first abusing a child was 11.36 years old ($SD = 8.23$). Forty-eight percent of the sample ($n = 163$) reported that they lived with or were related to their victim(s), whereas 50.7% of the sample ($n = 171$) reported at least one extra-familial victim.

**Measures**

Modus Operandi was assessed via responses to the Adolescent Modus Operandi Questionnaire (AMOQ; Kaufman, 1994). This 369-item self-report questionnaire was developed drawing on input from offenders, victims, and professionals in fields such as law enforcement, victim treatment, and offender treatment. It has shown to be a reliable and valid tool for better understanding the modus operandi of juvenile sexual offenders (Kaufman et al., 1998). The questionnaire asks sex offenders to identify the frequency with which they used certain strategies ($0 =$ never, $3 =$ almost always) to commit CSA across the continuum from accessing potential victims through maintaining victim silence once abuse has begun. The current study examines four content areas of the AMOQ, including: (1) Gaining Victim Trust; (2) Gaining Victim Cooperation; (3) Threats to Get the Victim Involved in Sexual Activity; and (4) Keeping the Victim Quiet About Sexual Abuse.

Mean subscale scores for each participant were calculated from these items for the purpose of this study. To account for missed items, subscales were only calculated for cases in which the participant responded to at least half of the items in that subscale. An overall mean score defined as strategic grooming was computed across the four subscales, consistent with Kaufman et al.’s (1998) measurement of overall modus
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operandi. The overall mean score demonstrated excellent reliability, with a Cronbach’s alpha of .98. Individual items for each of the AMOQ subscales and internal reliability for those subscales are presented in Table 2.1.

Victim supervision was assessed using the Supervision Questionnaire (SQ; Kaufman, 2001). The SQ was designed for the original larger CDC study and included multiple self-report subscales assessing victim supervision as reported by the juvenile offender. For this study, supervisor status is assessed with the question “Put a check on the line next to the people that were responsible for knowing where the child was during any of the times that you were abusing him/her” where JSOs marked the line “I was the supervisor.” Supervision Questionnaire subscales and their internal consistency are presented in Table 1.2, and include efforts to get the child alone (e.g., “offering to babysit the child”), parents’ need for child care assistance (e.g., “asking the juvenile to babysit”), and parental disruptors (e.g., “s/he was trying to keep a marital or dating relationship”). Participants responded to each item on a Likert scale ranging from 0 (never) to 4 (always).

Procedures

IRB approval for the study was obtained from Portland State University prior to data collection. Juvenile sex offender (JSO) participants were recruited from juvenile correctional facilities in four states (e.g., Florida, Oregon, New York and South Carolina). JSOs provided assent using a form, which was read aloud to them, in addition to consent that was provided by representatives of state facilities who have custody of adolescents. All responses were anonymous and participation was voluntary. Next,
participants were screened for reading level, comprehension abilities, and significant mental disabilities. Eligible participants were given three paper and pencil questionnaires: The Demographic Questionnaire (Kaufman, 2001), the Supervision Questionnaire (SQ; Kaufman, 2001), and the Adolescent Modus Operandi Questionnaire (AMOQ; Kaufman, 1994). Participants typically took between 45 and 60 minutes to complete the Demographic Questionnaire and the SQ, and approximately 40 minutes to complete the AMOQ. A research assistant remained on hand to ensure that participants answered all survey questions. The research assistant then collected the completed questionnaire packets and returned them to Portland State University where they remain secured in a locked file cabinet.

**Results**

Several variables collected via the Demographics Questionnaire were used to establish the final sample for the study. Offenders who did not commit a sexual offense before the age of 18 \( (n = 10) \) were excluded from the analyses, as were offenders who did not report victims under the age of 12 \( (n = 2) \), female offenders \( (n = 11) \), and offenders who completed their measures in Spanish \( (n = 9) \). The final sample included 337 offenders between the ages of 11 and 23 \( (M = 16.71, \text{SD} = 2.23) \) when they completed the measure, with self-reported ethnic identities of Asian American \( (n = 3) \), African American \( (n = 37) \), European American \( (n = 189) \), Latino \( (n = 30) \), Native American \( (n = 11) \) and Mixed ethnicity \( (n = 66) \). 213 participants \( (63.2\%) \) reported having at least one male victim. Offenders reported having an average of 5.63 victims \( (\text{SD} = 7.51) \), with the
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average age of the last child they abused as 7.53 ($SD = 3.47$) years of age. Forty-three (43) participants reported having only male victims, 119 (35%) participants reported having only female victims, and 170 (50%) participants reported having a mix of both male and female victims.

Preliminary Analyses

A series of preliminary analyses were run to test whether the data meets the assumptions required for linear regression analyses. Examination of the data did not point to any outliers. Tests of skew and kurtosis did reveal a strong positive skew in the dependent variables. A series of transformations was initially considered, however non-linear transformations would lead to reductions in variance, which would ultimately make subtle differences difficult to detect. Despite the strong skew, Central Limits Theorem argues that large sample sizes serve as a protective factor for false results due to distribution. In other words, the low base rate responses in our sample may in fact reflect that these are simply low base-rate behaviors in the general population of JSOs.

Next, the data was examined for missing items. Sub-scale scores that were not calculated for the AMOQ due to missing items accounted for less than 2% of the data. JSOs who did not report the age of their last victim or disruptions to the victim’s parents’ supervision accounted for a slightly higher percentage of missing data (i.e., 4%) however a series of chi-square tests revealed that those JSOs did not differ significantly from JSOs who were included in the analyses on their strategic grooming score. This was true for both age of last victim ($\chi^2(303, N = 337) = 303.15, p = 0.454$) and disruptions to the victim’s parents’ supervision ($\chi^2(303, N = 337) = 279.99, p = 0.824$).
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A series of regression analyses were conducted in order to test whether certain covariates should be included in the final analyses. Past literature suggested that both length of treatment and state of data collection may be related to our outcomes of interest, however neither of these variables were significantly related to any of the outcome measures, and thus were excluded from further analyses.

Inferential Analyses

Supervisor Status

For the first set of hypotheses, logistic regressions were used to determine whether perpetrators’ efforts to get the child alone (M = .77, SD = .81), parents’ need for child care assistance (M = 1.56, SD = .85), and disruptions to supervision (M = .74, SD = .70). The outcome variable was whether the offender reported acting as a supervisor at any time while offending against their victim (i.e., with 1 = yes [n = 83] and 0 = no [n = 254]). Perpetrators efforts to get the child alone were significantly related to the log odds of acting as a child’s supervisor, $\chi^2 (1) = 11.10, p = .001$, Cox-Snell $R^2 = .033$. Each one-point increase in efforts to get the child alone was associated with a 3.67 times greater chance that the JSO would be the child’s supervisor. Parents’ need for childcare assistance was also significantly related to JSO supervisor status. Each one-point increase in parents’ need for childcare assistance was associated with a 1.65 times greater chance of JSO being a supervisor, $\chi^2 (1) = 58.33, p = .000$, Cox-Snell $R^2 = .16$. Disruptions to supervision were not significantly related to the log odds of acting as a child’s supervisor, $\chi^2 (1) = .98, p = .318$, Cox-Snell $R^2 = .003$. A one-point increase in disruptions to
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supervision was only associated with a 1.20 increase in likelihood of JSO being the child’s supervisor.

The three predictors together were significantly related to the log odds of acting as a child’s supervisor, $\chi^2 (3) = 56.03$, $p = .000$, Cox-Snell $R^2 = .159$. Controlling for the other variables, however, only parental need for childcare assistance significantly predicted the outcome variable. Specifically, controlling for the other variables, parents’ need for childcare assistance positively predicts the log odds of acting as a child’s supervisor, slope = 1.28, Wald $\chi^2$ statistic = 37.55, $p = .00$. Controlling for the other variables, perpetrators efforts to get the child alone fails to predict the log odds of acting as a child’s supervisor, slope = .07, Wald $\chi^2$ statistic = .133, $p = .72$, as do disruptions to supervision, slope = .159, Wald $\chi^2$ statistic = .592, $p = .44$.

Modus Operandi

To test the relationship between JSO supervisor status and their use of modus operandi strategies, a series of standard regressions were used. Whether the JSO reported acting as a supervisor was treated as the independent variable. Outcomes included bribes to gain victim compliance and related subscales, threats to gain victim compliance and related subscales, as well as strategic grooming (see Table 1.3).

Supervisor status explained a significant proportion of variation in strategic grooming ($R^2 = .02$, $F(1, 333) = 5.97$, $p = .02$), however the directionality was opposite of what was predicted, with JSO supervisors using modus operandi more frequently than their non-supervising counterparts. Supervisor status did not explain a significant proportion of variation in threats to gain compliance ($R^2 = .00$, $F(1, 333) = .03$, $p = .87$),
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nor did it predict any of the subscales within this category: threats to harm others ($R^2 = .00$, $F(1, 333) = 1.13, p = .29$), use of a weapon ($R^2 = .00$, $F(1, 333) = 2.43, p = .12$), making the victim feel helpless ($R^2 = .01$, $F(1, 333) = 3.08, p = .08$), or psychopathy ($R^2 = .00$, $F(1, 333) = 1.20, p = .27$).

JSOs who served in a supervisory role to their victim used significantly more bribes and enticements to gain victim compliance than JSOs who were non-supervisors. Supervisor status did explain a significant proportion of variation in bribes to gain victim compliance ($R^2 = .01$, $F(1, 333) = 5.51, p = .02$), such that JSO supervisors reported using more of these strategies than their non-supervising JSO counterparts. Upon further analysis, supervisor status significantly predicted two of the subscales within this category: desensitizing the victim to sexual contact ($R^2 = .02$, $F(1, 332) = 6.97, p = .01$) and giving gifts and privileges ($R^2 = .04$, $F(1, 329) = 14.43, p = .00$). Supervisor status did not significantly predict the remaining four subscales: buying the victim clothing ($R^2 = .00$, $F(1, 332) = .04, p = .85$), drugs and alcohol ($R^2 = .00$, $F(1, 328) = 1.68, p = .20$), exposure to pornography ($R^2 = .00$, $F(1, 332) = .12, p = .73$), and engagement in pornography ($R^2 = .00$, $F(1, 333) = .20, p = .65$).

**Moderated Analyses: JSO Characteristics**

A series of moderated analyses were undertaken to determine whether the relationship between JSO supervision and strategic grooming is moderated by key JSO characteristics (i.e., age, number of previous victims), key victim characteristics (e.g., age, gender), and by “disruptors” in victim’s parents’ lives, measured here as the composite score of a 8-item scale (e.g., working too many hours, too many other family
members to care for, trying to keep a marital or dating relationship, the child was visiting with his/her other parent, the parent was suffering from emotional problems, the parent was suffering from physical/health problems, the parent was suffering from domestic violence, the parent was using drugs and/or alcohol).

First, a regression analysis was conducted to determine the extent to which JSO age of first offense and acting as a JSO supervisor predicts strategic grooming. The model explained 2.1% of the variance in strategic grooming, $F(3, 331) = 3.43, p = .02$. JSO supervisor status significantly predicted strategic grooming, $B = .26, t(331) = 2.07, p = .05$, however neither offender age ($B = .10, t(331) = 1.81, p = .11$), nor the interaction term ($B = .03, t(331) = .13, p = .74$) were significant predictors. Next, a regression analysis was conducted to determine whether number of previous victims and acting as a JSO supervisor predicts strategic grooming. This model explained 14.4% of the variance in strategic grooming, $F(3, 317) = 18.97, p = .00$. Both JSO supervisor status ($B = .25, t(317) = 2.06, p = .04$) and number of previous victims ($B = .32, t(317) = 5.60, p = .00$) significantly predicted strategic grooming, with the interaction term approaching significance, $B = .27, t(317) = 1.90, p = .06$. Number of previous victims is associated with more strategies for supervisors versus non-supervisors, opposite in direction from what was predicted in the original hypothesis.

**Moderated Analyses: Victim Characteristics**

Next, a regression analysis was run to determine whether JSO supervisor status and age of the last child abused predict strategic grooming. This model was not significant, $R^2 = .01, F(3, 220) = 1.63, p = .18$. To examine the effect of victim gender
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and JSO supervisor status on strategic grooming, three regression analyses were conducted. First, a regression analysis was conducted to see whether JSO supervisor status and having only male victims predicts strategic grooming. This model explained 2.2% of the variance in strategic grooming, $F(3, 327) = 3.42, p = .02$. When controlling for the other variables, neither supervisor status ($B = .23, t(327) = 1.72, p = .09$), having only male victims ($B = -.34, t(327) = -1.92, p = .06$), nor the interaction term ($B = .68, t(327) = 1.56, p = .12$) were significant predictors. Next, the same model was run with female only victims. This model accounted for 1.4% of the variance in strategic grooming, $F(3, 330) = 2.54, p = .06$. When controlling for the other variables, JSO supervisor status ($B = .40 t(330) = 2.56, p = .01$) was a significant predictor, while having only female victims ($B = -.02, t(330) = -.17, p = .87$) and interaction term ($B = .27, t(330) = .27, p = .32$) were not. Finally, the regression was run using mixed gender versus single gender victims as the interaction term. This model explained 1.7% of the variance in strategic grooming, $F(3, 330) = 2.94, p = .03$. When controlling for the other terms, neither supervisor status ($B = .32, t(330) = 1.73, p = .08$), having mixed gender victims ($B = .19, t(330) = 1.52, p = .13$), nor the interaction term ($B = -.04, t(330) = -.17, p = .86$) were significant predictors.

**Moderated Analysis: Parental Disrupters**

Finally, a regression analysis was run to determine whether JSO supervisor status and disruptions to supervision predict strategic grooming. This model explained 4.6% of the variance in strategic grooming, $F(3, 320) = 6.19, p = .00$. When controlling for other variables, JSO supervisor status ($B = .27, t(320) = 2.17, p = .03$) and disruptions to
parental supervision ($B = .18, t(320) = 2.96, p = .00$) were significant predictors, but the interaction term was not significant ($B = .07, t(320) = .47, p = .63$).

**Discussion**

**Becoming a Supervisor**

The data supports the hypothesis that perpetrators’ efforts, parents’ need for childcare assistance, and parental disrupters significantly predict which JSOs become a child’s supervisor. It partially supports the hypothesis that each of those factors contribute unique and significant variance to becoming a supervisor, with only parental need for childcare assistance acting as a significant predictor when controlling for the other two factors (i.e., perpetrators efforts and parental disruptors).

These results have important implications for CSA prevention. While JSO’s likely take advantage of multiple risk factors to perpetrate CSA as originally hypothesized (Cohen & Felson, 1979; Finkelhor & Baron, 1986), these results suggest that the simple need for childcare assistance drives whether a JSO becomes a supervisor above and beyond the JSOs efforts to assume that role. JSOs might decide to commit CSA based on opportunities provided to them rather than specifically seeking out a supervisory role to commit abuse. An alternative hypothesis is that JSOs who seek supervisory roles target parents who have previously asked for childcare help. Previous research has found that adult sexual offenders target single mothers who are overworked and in need of childcare (Elliot et al., 1995). Future research could help to elucidate whether this strategy extends to JSOs, as well, and what strategies may be effective in addressing this type of vulnerability.
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The results also point to the limited value of only targeting parents who exhibit a narrow band of risk related characteristics (e.g., working too many hours, suffering from mental illness) for prevention programming. Since some parents may rely on adolescents for help with supervision from time to time whether or not routine distractions exist, prevention initiatives should take a more universal approach, informing all parents of the heightened risk of relying on adolescents who are not appropriately screened or adequately prepared for supervising their children. Parents can also be instructed in the use of more active supervisory strategies over adolescent babysitters (i.e., unannounced home visits) to increase child safety.

Finally, these results have implications for offender intervention. Based on the results certain JSOs do make efforts to gain the role of supervisor over their victim by offering to babysit or help with childcare. These offenders may be particularly drawn towards CSA (e.g., sexual and fantasies involving children; Seto & Lalumiere, 2010) and may require differential treatment compared to more opportunistic JSOs, including stricter supervision following treatment (Efta-Breitbach, & Freeman, 2004; Zankman & Bonomo, 2004). While these results suggest that some JSOs strategically offer to care for children as a precursor to committing CSA, more research is needed to determine which JSOs are most likely to make this decision prior to taking on childcare responsibilities and which are offending in a more opportunistic fashion.

**Strategic Grooming**

The data shows that JSOs who held supervisor roles used MO strategies significantly more frequently than JSO non-supervisors, opposite of what was expected.
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This may be due to the greater amount of time that a supervisor spends with a victim that allows and may even require the JSO to engage in a range of strategies (Cohen & Felson, 1979; Leclerc, Wortley & Smallbone, 2010). JSOs who engage in more strategic grooming may be more manipulative, or may appear more intelligent to parents, and as such may be more likely to be chosen as supervisors. Overall, having status as a supervisor does not appear to reduce the frequency of modus operandi strategies in JSOs making them similar to adult offenders, but perhaps supervisor status instead lends credibility to the JSOs efforts to lure their victim, gain compliance in CSA, and maintain silence following abuse (Kaufman et al., 1998).

It is interesting to note that there was a small subset of JSO non-supervisors who reported using modus operandi behaviors at rates higher than all other JSOs. This subset of offenders may warrant further investigation in order to determine why acting as a supervisor did not fit into their highly strategic use of modus operandi strategies. Perhaps JSOs who engage in such frequent use of modus operandi strategies appear untrustworthy to parents and are less likely to be trusted with a parent’s children.

No significant differences were found between JSO supervisors and non-supervisors on the threats and coercion scale or any of its associated subscales. Items on the threats and coercion scale were not endorsed highly overall by either group, and may be more subject to social desirability bias compared to some sections of the questionnaire (Kaufman et al., 1996; Tan & Grace, 2008). Alternatively, JSOs may simply be relying on more prosocial strategies (i.e., bribes and enticements) to commit abuse whenever possible (Kaufman et al., 1996).
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Finally, JSO supervisors were found to use significantly more bribes and enticements to gain victim compliance compared to non-supervisors. Specifically, JSO supervisors tended to desensitize their victims to sexual contact, as well as give gifts and privileges more often than their non-supervisor counterparts. Parents of children who sometimes rely on adolescents for supervision should be aware of behaviors in which the older child might be “overly touchy” or treat the younger child to gifts or privileges (Elliot et al., 1995; Henggeler et al., 2009; Zankman & Bonomo, 2004). Not all adolescent babysitters who engage in such behaviors will necessarily sexually offend against a child. However, parents should have clear rules and boundaries around physical touch and the types of privileges that they can offer the children in their care as a means of enhancing CAS prevention efforts (Elliot et al., 1995; Henggeler et al., 2009; Zankman & Bonomo, 2004).

Factors that moderate strategic grooming

JSO characteristics (i.e., age of first offence and number of victims) did not moderate the relationship between JSO supervision status and strategic grooming. Rational Choice Theory states that criminals develop increased professionalism for committing crimes over time (Cornish & Clarke, 1986). The acquisition of skills and knowledge to commit crime may help explain why adults tend to rely on fewer modus operandi strategies for committing CSA than juvenile sex offenders (Kaufman et al., 1998). In this study, only supervisor status predicted strategic grooming (i.e., while controlling for age of onset of committing abuse and the interaction between JSO supervision and age of onset). There are a number of possible explanations for these
results. Despite their age, older JSOs are still limited by financial restraints, less knowledge about the world, a developing brain, and have fewer skills compared to adult offenders (Kaufman et al., 1998). Also, when controlling for supervisor status, age may relate less strongly to access to the victim and opportunities to groom the victim.

The interaction between supervisor status and number of previous victims approached significance ($p = .06$), however, such that JSO supervisors who had more victims used modus operandi strategies more frequently than JSO non-supervisors with more victims. This could point to a subset of JSOs who seek out supervisory situations, have multiple victims, and are involved in ongoing efforts to identify potential victims and carry out CSA. In line with this interpretation, JSOs may build a wider array of modus operandi strategies as they gain more experience offending, and they may gain more confidence in their ability to use those strategies and not get caught. Alternatively, this could simply reflect an increase in access to victims and opportunities for grooming for JSO supervisors versus JSO non-supervisors. Additional research is warranted to examine whether JSOs who take on supervisory roles and have multiple victims represent a unique subtype of strategic offender or if they are simply reacting to the opportunities afforded by greater access to victims while involved in child care.

The proposed moderating effects of victim characteristics (i.e., age and gender) and JSO supervisor status on strategic grooming was not supported. This is surprising given findings in the literature that support a relationship between victim characteristics and offenders’ modus operandi (Aebi et al., 2012; Fanniff & Kolko, 2012; Kaufman et al, 1996; Leclerc et al., 2009; Kendall-Tackett & Simon 1992; Ketring & Feinauer, 1999)
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Future research on more ethnically/racially or economically diverse sample of JSOs may reveal such differences.

Finally, the proposed moderating effects of parental “disrupters” and JSO supervisor status on strategic grooming was not supported. It seems that for both JSO supervisors and JSO non-supervisors, disruptions to parental supervision can serve as a cue to JSOs that parent safety mechanisms have been compromised. The disruptors may also create “routine activities” on the part of the parent that make the perpetration of CSA more likely to succeed. Parents who suffer from disruptions to their supervision may require a combination of prevention strategies (e.g., educated about a variety of modus operandi strategies that JSOs have the potential to use against their young children (Elliott et al., 1995; Kaufman et al., 2012) and practical assistance to address the disruptor more directly.

Limitations

Next, data is based on self-report by the JSOs, and measures of distractions in the victim’s primary supervisor’s life may have not been apparent to the JSO (e.g., whether or not the parent is trying to keep a romantic relationship together or suffers from a drug or alcohol problem). Despite this limitation, gathering data from the JSOs perspective provides real insight into how their understanding of how their environment influences their behavior.

JSOs in this study may not be generalizable to other JSOs who have never been apprehended for their crime. Future studies investigating the relationship between JSO supervisor status and their use of modus operandi strategies may want to compare
incarcerated JSOs to those in outpatient treatment. Outpatient JSOs may differ from incarcerated JSOs in terms of the severity of their crime, their ability to conceal certain pieces of their crimes, or their access to economic resources. It is also important to note that since the sample consisted solely of JSOs, these results are not generalizable to all adolescent babysitters.

A further limitation to consider is the measurement of victim characteristics. JSO-victim relationships were operationalized based on both the age and gender of the last victim the JSO offended against. This is the same victim for whom the participant was thinking of, and referring to, while responding to the questionnaires. It is likely however that some of the JSOs who had more than one victim may have abused against victims with different characteristics. It is possible that offenders with multiple victims may have reported differently if they had been asked to report about the full spectrum of their victims. Despite this limitation, participant responses still reveal important details about their relationship with that particular victim.

**Future Directions**

There are a number of important future directions for research in this area. First, a more in-depth examination of babysitters and temporary supervisors as a subtype of JSO offenders is warranted. It is likely that other subgroup differences exist within this group that relate to the use of modus operandi strategies in ways that were not revealed in this study. For example, there may be appreciable differences in the effect of JSO supervisor status when the frequency and duration of supervision is considered, or whether or not the offender lives with their victim is taken into account (Leclerc et al., 2015). There may
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also be differences between self-appointed supervisors and supervisors as reported by the victim’s parent. It is possible that JSOs who act as supervisors on a more frequent or intensive basis may more closely resemble adult offenders, in terms of grooming patterns, as originally hypothesized (Kaufman et al., 1998). Replicating this study with a measure of supervision which focuses more closely on issues described in this study should be considered. For instance, it may be useful to investigate differences in modus operandi between JSOs who are trusted to watch young children without an adult on a regular basis versus occasional babysitters and non-babysitters.

This study makes an important contribution to the child sexual abuse literature through the examination of modus operandi through the lens of JSO supervisor status, however it will be important for future studies to validate this measure of supervision (Schwebel & Kendrick, 2009). This can be through additional studies of JSO modus operandi that include measures of specific types of supervision, ranging from JSOs who only assist with childcare in the presence of the child’s parent, to JSOs who are hired as long term babysitters for their victim. Future studies should also investigate whether JSOs self-reports as their victim’s supervisor coincide with the report of the victim’s parent (Schwebel & Kendrick, 2009).

Conclusion

While it can be tempting to view these results as a caution against the use of teenage babysitters at all, that is not the intended recommendation of this study for several reasons. Even though several of the analyses reached statistical significant, their effect sizes were still quite small. As such, statistical significance in this study does not
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necessarily equate with clinical significance. For example, the finding that JSO supervisors used grooming strategies more frequently than non-supervisors explained only 2% of the variance. Future research is needed to better understand what makes up the remaining 98% of variance. Potential factors could include perpetrator-specific factors such as personality traits or socio-economic status, or victim-specific factors such as number of other family members living in the home.

There are also practical reasons why parents should not avoid the use of adolescent babysitters. First, many families have limited resources for childcare and may depend on adolescents for assistance (Leclerc & Felson, 2014). Second, there are numerous benefits to having teenagers supervise younger children, and in most cases, teenagers can be trusted to appropriately supervise children. Instead, these results should be used to strengthen prevention efforts, such that parents can be made aware of ways to increase the quality and quality of supervision and monitoring provided to their children’s babysitters (Leclerc, Proulx & Beauregard, 2009; Leclerc, Carpentier, & Proulx, 2006). Prevention may need to more often incorporate practical and direct strategies to ensure children’s safety (e.g., more frequent “surprise visits,” more active adult supervision or other “guardians” to ensure safety), even in cases where the adolescent in charge is trusted and capable. It is also important that any suggestions or signs of child sexual abuse should be taken seriously by parents and other adult supervisors (Leclerc et al., 2009; Leclerc & Felson, 2014). Together, the results of this study suggest a variety of interesting implications for future research, prevention, and the effective treatment of JSOs.
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These results suggest acting as a supervisor plays a role in JSO’s use of modus operandi strategies. It is important to educate professionals and members of the public to recognize that offenders with less strategic or seemingly more pro-social grooming styles may go more easily undetected (Kaufman et al., 1998). Understanding the breadth of common CSA grooming patterns can also have important implications for both preventing and investigating reported cases of CSA (Kaufman et al., 2012; Wortley & Smallbone 2006).
### Table 2.1 Adolescent Modus Operandi Questionnaire Subscale Items* (Internal Consistency)

**PART ONE: Gaining Trust (.92α)**

<table>
<thead>
<tr>
<th>Love and Attention (.92α)</th>
<th>Drugs and Alcohol (.63α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spend a lot of time with them</td>
<td>Give them beer or liquor</td>
</tr>
<tr>
<td>Give them a lot of attention</td>
<td>Give them drugs</td>
</tr>
<tr>
<td>Tell them they're special</td>
<td>Give them other gifts</td>
</tr>
<tr>
<td>Take them places</td>
<td>Let them smoke cigarettes</td>
</tr>
<tr>
<td>Talk like their age</td>
<td></td>
</tr>
<tr>
<td>Trick them into feeling safe with you</td>
<td></td>
</tr>
<tr>
<td>Say loving, caring things to them</td>
<td></td>
</tr>
<tr>
<td>Touch them non-sexually</td>
<td></td>
</tr>
<tr>
<td>Let them decide what you will do together</td>
<td></td>
</tr>
<tr>
<td>Protect them from people who might hurt them</td>
<td></td>
</tr>
<tr>
<td>Play with them</td>
<td></td>
</tr>
<tr>
<td>Do what they like to do</td>
<td></td>
</tr>
<tr>
<td><strong>Giving Gifts (.86α)</strong></td>
<td></td>
</tr>
<tr>
<td>Give them candy or favorite food</td>
<td>Have another child talk about having fun with you</td>
</tr>
<tr>
<td>Give them toys</td>
<td></td>
</tr>
<tr>
<td>Give them privileges or rewards</td>
<td></td>
</tr>
<tr>
<td>Give them money</td>
<td></td>
</tr>
</tbody>
</table>

*How often then used this strategy for engaging in child sexual abuse (0 = never, 3= almost always)
Table 2.1 Adolescent Modus Operandi Questionnaire Subscale Items* (Internal Consistency)

PART TWO: Bribes and Enticements for Gaining Victim Compliance (.94α)

**Buying Victim Clothing (.82α)**
- Buy them bathing suits
- Buy them underwear or sleepwear
- Buy them other clothes

**Drugs and Alcohol (.89α)**
- Give them beer or liquor just after sexual abuse
- Give them drugs just after sexual abuse
- Give them cigarettes just after sexual abuse

**Exposure to Pornography (.83α)**
- Have them watch you do sexual things with other kids
- Show them media with naked adults
- Show them media with adults doing sexual things together
- Show them media with adults doing sexual things with kids
- Show them media with naked children
- Show them media with kids doing sexual things together
- Show them media with animals doing sexual things
- Show them media with people doing sexual things with animals

**Desensitizing the Victim to Sexual Contact (.88α)**
- Talk more and more about sex
- Wear less clothes and tell child to wear less
- Touch them more and more
- Tell them their friends have already had sex
- Start sexual abuse like no big thing
- Start sexual abuse when they were upset
- Get them curious about sex
- Get them sexually excited
- Say loving things
- Touch them non-sexually
- Say nice things about them
- Say you will 'teach' them something
- Say you will love them more if they do this with you
- Say you will take them places
- Say you will spend more time with them
- Save their friend, who you've been sexual involved with say it's ok

**Giving Gifts and Privileges (.88α)**
- Give them gifts sometimes
- Give them candy just after sexual abuse
- Give them money just after sexual abuse
- Give them toys just after sexual abuse
- Give them privileges or rewards just after sexual abuse

*How often then used this strategy for engaging in child sexual abuse (0 = never, 3= almost always)
Table 2.1 Adolescent Modus Operandi Questionnaire Subscale Items* (Internal Consistency)

<table>
<thead>
<tr>
<th>PART THREE: Threats to Gain Victim Compliance (0.92α)</th>
<th>Psychopathy (0.85α)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Making the Victim Feel Helpless (0.87α)</strong></td>
<td>Say you will hurt their pet</td>
</tr>
<tr>
<td>Say you will tell on them about having sex with you</td>
<td>Say you will kill their pet</td>
</tr>
<tr>
<td>Say you will make up things to tell on them</td>
<td>Get them drunk</td>
</tr>
<tr>
<td>Make them feel like there is nothing to do to stop it</td>
<td>Get them high with drugs</td>
</tr>
<tr>
<td>Say you will hit them if they don’t do it</td>
<td>Get them high with prescription drugs</td>
</tr>
<tr>
<td>Say they don’t love you if they don’t do sexual things</td>
<td>Hurt a pet in front of them</td>
</tr>
<tr>
<td>Use force to make them do sexual things</td>
<td></td>
</tr>
<tr>
<td>Hope they thought you would hurt them</td>
<td></td>
</tr>
<tr>
<td>Hope they thought you would hurt a family member</td>
<td></td>
</tr>
<tr>
<td>Hope they thought you would get them in trouble</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Threatening to Harm Others (0.93α)</th>
<th>Use of a Weapon (0.81α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Say you will hurt their siblings</td>
<td>Put a weapon where they could see</td>
</tr>
<tr>
<td>Say you will hurt their mother</td>
<td>Say you will hurt them with a gun</td>
</tr>
<tr>
<td>Say you will hurt their father</td>
<td>Say you will hurt them with a knife</td>
</tr>
<tr>
<td>Say you will hurt their friends or relatives</td>
<td>Say you will hurt them with another object</td>
</tr>
<tr>
<td>Say you will kill their sibling</td>
<td>Say you will kill them</td>
</tr>
<tr>
<td>Say you will kill their mother</td>
<td></td>
</tr>
<tr>
<td>Say you will kill their father</td>
<td></td>
</tr>
<tr>
<td>Say you will kill their friends or relatives</td>
<td></td>
</tr>
</tbody>
</table>

*How often then used this strategy for engaging in child sexual abuse (0 = never, 3 = almost always)
### Table 2.1 Adolescent Modus Operandi Questionnaire Subscale Items* (Internal Consistency)

#### PART FOUR: Keeping the Victim Quiet about the Sexual Contact (.92α)

<table>
<thead>
<tr>
<th>Benefits and Consequences for the Victim or the Offender (.89α)</th>
<th>Threatening to Harm the Victim (.79α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Say you will give privileges of if they don't tell</td>
<td>Say they would get in trouble if they told</td>
</tr>
<tr>
<td>Say you will take them places if they don't tell</td>
<td>Say you would hurt them with a gun</td>
</tr>
<tr>
<td>Say you will spend more time together if they don't tell</td>
<td>Say you would hurt them with a knife</td>
</tr>
<tr>
<td>Say you will love them more if they don't tell</td>
<td>Say you would hurt them with another object</td>
</tr>
<tr>
<td>Say you cannot spend time together if anyone knew</td>
<td>Hurt them as warning</td>
</tr>
<tr>
<td>Say you cannot go places together if anyone knew</td>
<td>Hope they thought it was their fault</td>
</tr>
<tr>
<td>Say you cannot buy but them things if anyone knew</td>
<td>Hope they thought you would hurt them</td>
</tr>
<tr>
<td>Say their parents would not love them anymore</td>
<td>Hope they thought you would get them in trouble</td>
</tr>
<tr>
<td>Say that you would not love them anymore</td>
<td></td>
</tr>
<tr>
<td>Say you would tell on them about their sexual activity</td>
<td></td>
</tr>
<tr>
<td>Say you would tell on them about bad behaviors</td>
<td></td>
</tr>
<tr>
<td>Take away love or affection as warning</td>
<td></td>
</tr>
<tr>
<td>Hope they wouldn't want to lose you</td>
<td></td>
</tr>
</tbody>
</table>

#### Threatening to Harm Others (.94α)

| Say you would hurt their siblings                             | Say you would hurt their relatives     |
| Say you would hurt their mother                              | Say you would hurt their friends or relatives |
| Say you would hurt their father                              | Say you would kill their siblings      |
| Say you would kill their mother                              | Say you would kill their mother        |
| Say you would kill their father                              | Say you would kill their father        |
| Say you would kill their friends or relatives                 | Say you would kill their friends or relatives |
| Say you would kill their pet                                 |                                          |

*How often then used this strategy for engaging in child sexual abuse (0 = never, 3 = almost always)
## Table 2.2 Supervision Questionnaire Subscale Items* (Internal Consistency)

### JISO Efforts to Get the Child Alone (.85α)
- Offer to babysit
- Attempt to get the child alone
- Volunteer to help child get dressed or undressed
- Volunteer to help child take a bath
- Volunteer to help child get ready for bed
- Volunteer to help child eat or take care of him/herself
- Volunteer to help play games with the child
- Volunteer to help check on child during the night

### Parents Need for Childcare Assistance (.91α)
- Ask you to babysit
- Ask you to watch the child while they are elsewhere in their house
- Ask you to watch the child while they run errands
- Leave the child alone
- Leave the child in your care

### Factors that Interfere with Parent’s Ability to Adequately Care for their Child (.99α)
- The parent was working too many hours
- The parent had too many other family members to care for
- The parent was trying to keep a marital or dating relationship
- The child was visiting with his or her other parent
- The parent was suffering from emotional problems
- The parent was suffering from physical/health problems
- The parent was suffering from domestic violence
- The parent was using drugs and/or alcohol

*How often (0 = never, 4 = always) during the times the abuse occurred
### Table 2.3 Modus Operandi Group Mean Scores

<table>
<thead>
<tr>
<th>Mean Scores (Standard Deviation) *</th>
<th>JSO Supervisors</th>
<th>JSO Non-Supervisors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bribes and enticements to gain victim compliance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buying the victim clothing</td>
<td>.46 (.33)</td>
<td>.34 (.43)</td>
</tr>
<tr>
<td>Drugs and alcohol</td>
<td>.12 (.40)</td>
<td>.14 (.45)</td>
</tr>
<tr>
<td>Exposure to pornography</td>
<td>.20 (.59)</td>
<td>.12 (.48)</td>
</tr>
<tr>
<td>Engagement in Pornography</td>
<td>.23 (.30)</td>
<td>.21 (.47)</td>
</tr>
<tr>
<td>Desensitization to sexual contact</td>
<td>.99 (.70)</td>
<td>.75 (.75)</td>
</tr>
<tr>
<td>Giving gifts and privileges</td>
<td>1.11 (.99)</td>
<td>.67 (.86)</td>
</tr>
<tr>
<td><strong>Threats and coercion to gain victim compliance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threatening to harm others</td>
<td>.18 (.23)</td>
<td>.19 (.37)</td>
</tr>
<tr>
<td>Making the victim feel helpless</td>
<td>.06 (.23)</td>
<td>.10 (.38)</td>
</tr>
<tr>
<td>Use of a weapon</td>
<td>.54 (.61)</td>
<td>.40 (.62)</td>
</tr>
<tr>
<td>Psychopathy</td>
<td>.07 (.28)</td>
<td>.14 (.41)</td>
</tr>
<tr>
<td><strong>Strategic Grooming</strong> (i.e., overall score across the 4 modus operandi categories)</td>
<td>.48 (.33)</td>
<td>.36 (.41)</td>
</tr>
</tbody>
</table>

*0 = never used this strategy, 3 = almost always used this strategy
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CHAPTER III. MANUSCRIPT II. PREVENTING JUVENILE SEXUAL OFFENDING THROUGH PARENTAL MONITORING: A COMPARISON STUDY OF YOUTHS’ EXPERIENCES OF SUPERVISION

This chapter was previously published in its entirety in the Journal of Sexual Aggression.


**Abstract**

The parental supervision literature has long observed a link between parental monitoring and juvenile antisocial behaviour. This study extends this line of research to juveniles who commit sexual abuse. The present study investigates whether self-reports of parental monitoring differ between juvenile sexual offenders \( (n = 338) \), juvenile delinquents \( (n = 346) \), and non-incarcerated juvenile controls \( (n = 256) \). Results indicate that juvenile sexual offenders generally reported worse supervision, less parental solicitation, less parental control, and less parental knowledge compared to non-incarcerated juvenile controls. Juvenile sexual offenders differed from juvenile delinquents such that they reported lower levels of perceived parental monitoring. Conversely, for certain items, juvenile sexual offenders reported higher levels of parental knowledge, parental solicitation and parental control compared to juvenile delinquents. Potential explanations for these findings as well as practical implications for prevention are discussed.
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Introduction

The link between parental monitoring and the development of juvenile delinquency has been the subject of research since the 1950s. However, no studies to date have investigated the relationship between parental monitoring and juvenile sexual offending (Keijsers, 2016; Seto & Lalumiere, 2010). This dearth of research may be due, in part, to a tendency for investigators to focus on crime-specific factors (e.g., sexual development), as opposed to factors more generally related to juvenile delinquency (e.g., parental monitoring; Seto & Lalumiere, 2010). Ignoring more general types of risk factors for juvenile sexual offending can lead to missed opportunities for prevention interventions. The following section will briefly summarise the literature on parental supervision strategies to prevent juvenile delinquency, and provide context for our application of these approaches to juvenile sexual offenders (JSOs).

Parental Monitoring

Parental monitoring is defined in the literature as an active set of behavioural strategies employed by parents to track where their child is located and what activities they are engaged in (Dishion & McMahan, 1998). Unfortunately, a variety of challenges are associated with these measures of parental monitoring. Naturalistic observation, for instance, can provide a wealth of information but is costly to implement; at the same time, laboratory observations and self-report measures are prone to social desirability bias (Schwebel & Kendrick, 2009). Further complicating the assessment of parental monitoring is the fact that it is not a simple top-down dyadic process between a parent
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and their child, but rather a complex dynamic relationship embedded in a larger social ecosystem (Chun & Steinberg, 2006; Racz & McMahon, 2011). In other words, parents develop monitoring behaviours based not only on their own traits and experiences, but on those of the child, as well as on social norms and expectations around parenting. Further, as a child grows older, a parent shifts their monitoring efforts from direct supervision, towards more distal forms of supervision such as creating rules and checking in with the youth (Dishion & McMahon, 1998). Despite methodological challenges, there has been a long-standing call in the literature for better research establishing the particular components of parental monitoring that foster the protection of children from harmful outcomes such as injury, abuse, and delinquency (Kerr, Stattin, & Burk, 2010; Saluja et al., 2004; Turner, Finkelhor, & Ormrod, 2007).

Early cross-sectional studies linking parental monitoring to juvenile delinquency (i.e., Loeber & Dishion, 1983; Reid & Patterson, 1989) seem to suggest that strict monitoring is an effective means of preventing youth from engaging in delinquent behaviour. However, later research pointed out that many of these early studies merely measured parental knowledge, as opposed to more effective active monitoring which involves soliciting, tracking and checking on the youth (Kerr & Stattin, 2000; Stattin & Kerr, 2000). Moreover, studies linking parental monitoring to child victimisation have been sparse and contradictory, perhaps due to the fact that parents typically increase their monitoring efforts in response to a child’s initial victimisation (Esbensen, Huizinga, & Menard, 1999; Turner et al., 2007). While past research on parental monitoring and child
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outcomes has been fraught with conceptual problems, more recent research has begun to
distinguish between parental monitoring and other related, but distinct, facets of
parenting such as parental knowledge, parental solicitation, and parental control (Kerr et
al., 2010).

Parental Knowledge

Parental knowledge refers to the degree to which a parent is aware of their child’s
activities and whereabouts (Stattin & Kerr, 2000). This parenting construct has often been
conflated with monitoring in the literature despite evidence that knowledge is
distinctively different from active monitoring strategies. In fact, in their review of
parental monitoring and adolescent conduct problems, Racz and McMahon (2011) found
that a majority of the 47 articles identified in the literature measured parental knowledge,
even when the articles claimed to be measuring parental monitoring. At the same time,
the relationship between parental knowledge and adolescent delinquency or conduct
problems has been consistently reported in the literature (Hoeve et al., 2009; Racz &
McMahon, 2011). Researchers have questioned whether parents’ efforts to gain
knowledge about their children actually prevent conduct problems or whether children
who are delinquent simply do not disclose such behaviours to their parents (Kerr et al.,
2010). However, recent evidence suggests that parental knowledge is indeed a result of
parental monitoring efforts (Bendezú, Pinderhughes, Hurley, McMahon, & Rac, 2016;
Walters, 2017). These findings suggest interventions aimed at increasing parents’
knowledge of their child’s behaviour may have potential for preventing juvenile
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delinquency. At present, the literature does not include investigations examining a link between parental knowledge and juvenile sexual offending. As a result, there is currently no evidence to guide interventions that would prevent juvenile sexual offending. Further research is needed to determine how parental knowledge diverts specific types of offending behaviours. This includes both the breadth of parents’ knowledge as well as information about where that knowledge is drawn from.

**Parental Solicitation**

Parental solicitation refers to active strategy’s parents use to gain knowledge about their child (Stattin & Kerr, 2000). For example, parents may ask their child who they’ve been with or what they were doing when they were away from the parents’ immediate supervision. It should be noted that parental solicitation is considered distinct from youth disclosure. Where parental solicitation reflects an active process on parents’ part, youth disclosure suggests a youth’s spontaneous provision of information to their parents. Further, parental solicitation studies that have controlled for youth disclosure have yielded mixed results. In some cases, they have failed to find a significant link between parental solicitation and delinquency (Tilton-Weaver, Burk, Kerr, & Stattin, 2013). In other studies, a significant positive relationship has been reported (Kiesner, Dishion, Poulin & Pastore, 2009; Rekker, Keijzers, Branje, Koot & Meeus, 2017; Willoughby & Hamza, 2011). Researchers have proposed a number of explanations for these inconsistent findings. First, there may be certain factors that moderate the effects of parental solicitation, such that certain monitoring practices could be supportive to some
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children and overly invasive to others. For instance, Crocetti et al. (2016) found that parental solicitation was associated with an increase in antisocial behaviour for youth with high state empathy, but not for those with low state empathy, suggesting that some youth may find particular forms of parental solicitation intrusive. At the same time, parental abdication, or the tendency for parents to disengage from children when their behaviour is more deviant, may have an impact on the parent-child relationship and indirectly on parental solicitation (Crocetti et al., 2016). No studies were identified as having investigated parental solicitation in youth who sexually offend. One study, however, did find that parents with higher parental solicitation have adolescents who avoid premature sexual activity (Longmore, Manning, & Giordano, 2001).

Parental Control

One of the more straightforward ways parents attempt to monitor and supervise their children is through the establishment of house rules. Before going out, youth may be required to report where they are going and who they will be with. They may have a curfew indicating by what time they must be back home. They may also be allowed certain freedoms (e.g., playing outside the store while their parent goes grocery shopping), but not others (e.g., walking to the store by themselves to purchase their own items). However, the literature which examines parental control and juvenile delinquency suggests that rule setting is only marginally effective for improving a child’s or adolescent’s behaviour. Statin and Kerr (2000) found that parental control was significantly associated with lower rates of juvenile delinquency, but other factors, such
as spontaneous disclosures of where the child was and what they’re doing, were much more important for predicting delinquency. In fact, parental control only explained three per cent (3%) of the variability in their model. Similarly, Hoeve et al.’s (2009) meta-analysis found that parental control only produced a small to moderate effect on reducing delinquency. Other studies have found that parental strictness, on its own, was either totally ineffective at reducing delinquency (Apel & Kaukinen, 2008; Melotti, Poti, Gianesini, & Brighi, 2017) or in some instances even produced a harmful effect, such that controlling parents had more delinquent children (Rekker et al., 2017).

Only a handful of studies have specifically examined the role of parental control for families with JSOs. Some of these studies suggest that parents of JSOs have fewer rules and less control over their children than community controls (Cupp Knight, 2002; Duane, Carr, Cherry, McGrath, & O’Shea, 2003). However, family rule setting did not differ between families of JSO youth who were at low, medium, or high risk for reoffending (Smith, Wampler, Jones, & Reifman, 2005). Additionally, to date, no studies have compared parental control across families of juvenile sexual offenders, general juvenile delinquents (JDs), and non-incarcerated juvenile controls (JCs).

**Aims of the Current Study**

The aim of the current study is to fill a gap in the literature regarding facets of parental monitoring and youth sexual offending. First, we hypothesised that JSOs and JDs would be less likely to report that they were supervised well, or that their supervisor

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1 Throughout the article, the terms parent and supervisor are used interchangeably
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was at home when they were home, compared to non-incarcerated JCs. Second, we hypothesised that JSOs and JDs would report lower parental solicitation compared to JCs. For example, JSOs and JDs would be less likely to report that their supervisor asks where they are going and what they are doing. Third, we predicted that JSOs and JDs would report lower levels of parental control compared to JCs. For example, their supervisors would be more likely to allow them to go to a friend’s house with no one there to supervise. Finally, we hypothesised that JSOs and JDs would report lower parental knowledge (i.e., active tracking of the child’s whereabouts and behaviour) compared to JCs. It is notable that this study will be the first to provide a direct comparison of parental monitoring between JSOs, JDs, and non-incarcerated JCs.

Methods

Procedure

The data for this investigation comes from a larger research study that focuses on the patterns of perpetration (or modus operandi) of juvenile sexual offenders (CDC Grant R49/CCR016517-01). Data was collected between 2000 and 2004 from JSOs and JDs who were recruited from correctional facilities in four states (Florida, Oregon, New York, and South Carolina). Non-incarcerated juvenile controls were recruited from local community centres in the same states as the correctional facilities. All youth provided informed assent. Parental consent was also gathered for youth who were in the community control group. For incarcerated youth, consent was granted through the governing body of the correctional facility. JSOs are those youth whose most recent
incarceration was due to an offence that was sexual in nature and was committed before they were 18 years of age. JDs were defined as any incarcerated youth who had committed a crime other than a sexual offence, prior to their 18th birthday. JCs were non-incarcerated community-based youth who had never been arrested. For the purposes of this study, 65 participants were excluded for not self-identifying as male and 37 for being older than 20 at the time of the data collection. As only a small percentage of data was missing from the dataset (3.7%), no adjustments were made.

**Participants**

The participants in this study were 940 male youth. These youths represented three groups: JSOs \((n = 338)\), JDs \((n = 346)\), and non-incarcerated JCs \((n = 256)\). Participants ranged in age from 11 to 20 years old \((M = 16.1 \text{ years old}, SD = 1.92)\). Forty per cent \((40.4\%)\) of youth identified as white, 22.9% identified as black, and 16.0% identified as Hispanic. One-way ANOVAs were conducted to compare JSOs, JDs, and JCs on demographic variables, which revealed some important differences between groups. Incarcerated youth (JSOs: \(M = 16.47, SD = 2.01\), JDs: \(M = 16.72, SD = 1.40\)) were found to be significantly older than JCs \((M = 14.70, SD = 1.72)\) \((F = 114.173, p <.001)\). However, as youth were asked to retrospectively report on their supervision experiences during the last year in which they lived at home, further analyses revealed no significant group differences in the age at which they last lived at home \((F = 2.241, p = ns)\). That is, while JCs were reporting on the last calendar year \((M = 14.70, SD = 1.72)\),
incarcerated youth were reporting on their caregiver’s supervision practices from before their incarceration ($M = 14.1, SD = 2.02$).

**Measures**

As this research represents a subsample of a larger data collection project, only relevant measures to this project will be discussed here.

*Demographics Questionnaire*

Youth completed a brief, self-report questionnaire describing their demographics. Respondents were asked to indicate their age, gender, education level, and family’s socioeconomic status.

*Supervision Questionnaire*

All youth completed a measure which solicited information regarding their experience being supervised as a child/adolescent. Incarcerated youth were specifically asked to think about the last year that they were in the community before their incarceration when completing this assessment device. Non-incarcerated youth were asked to report on the last year prior to data collection. This questionnaire asked the youth to indicate their primary supervisors’ relationship to them (i.e. “birth mother”, “uncle”) and when each person supervised them during a typical week. Additionally, youth were asked to report whether they had a curfew, and how much knowledge they thought their supervisors had about their whereabouts and activities when they were not being actively watched by their supervisors.

*Parental monitoring*
In this study, parental monitoring was assessed using 2 variables. The first was a composite variable of the average quality of supervision received by the youth (1 = not well supervised, 3 = very well supervised). Second, a question that indicated whether or not the youth was allowed to spend time unsupervised (“when I was at home, my supervisor was also in the house”) was included in this section.

*Parental knowledge*

Six items were included in parental knowledge measure. These items asked the youth to indicate how often their supervisors really knew about their whereabouts and actions (e.g., “how often did your supervisor know where you went after school?”).

*Parental solicitation*

This measure is composed of 10 items that assessed whether the youths’ supervisors inquired about what the youth was doing, where he was going, who he was with, and if an adult would be present when the youth left the house. Also included in this measure were questions regarding supervisors’ soliciting information from sources besides their own child (e.g., “how often did your supervisor call to make sure there was an adult supervisor present when you were going to be away from home?”).

*Parental control*

Parental control was assessed through a 3-item scale that assessed the presence or absence of rules (e.g., “what time did you have to be home at night?”, “my supervisor made rules to try and keep me out of trouble”), as well as a 4-item scale that assessed parental persistence around rules. This second scale included items which indicated that
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supervisors put time and effort into making sure that their children were clear about the expectations and consequences for their behaviour. Items such as “my supervisor made sure that I understood the rules” and “when my supervisor caught me doing things I wasn’t supposed to do, I got in trouble,” were also included in this measure.

Data Analysis

All hypotheses were tested using the Statistical Package for the Social Sciences version 24.0. Multiple analyses of variance (MANOVAs) were conducted for each of the five subscale measures of parental monitoring (i.e., monitoring, knowledge, solicitation, control and persistence). Following each significant MANOVA, corresponding univariate ANOVAs were conducted in order to identify specific differences between groups.

Results

A one-way between groups MANOVA examining parental monitoring was conducted to assess differences in supervision practices of JSO, JD, and JC youth (see Table 3.1). A statistically significant main effect was found $F(4, 1740) = 40.41, p < .001, \text{Wilks' } \lambda = .84, \eta_p^2 = .085$.

Post-hoc tests using a Bonferroni correction demonstrated that JCs felt that their caregivers provided a significantly higher quality of supervision than either JSOs or JDs. Incarcerated youth also differed from one another, such that JDs reported a higher quality of supervision than did JSOs. Consistent with these results, JSOs and JDs were also significantly more likely to report that they were left home alone than JCs, though in this case, incarcerated youth did not differ from one another.
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The MANOVA for supervisor knowledge was found to be significant $F(12, 1670) = 18.335, p < .001, \text{Wilks' } \lambda = .781, \eta^2_p = .116$; see Table 3.2). Universally, the supervisors of non-incarcerated juvenile control participants were the most likely to have accurate knowledge about the whereabouts and activities of their children. Interestingly, for the three variables that assessed supervisor knowledge of their child’s location (i.e., “where the youth was when they were out”), JSO supervisors formed a distinct middle group between JCs and JDs. That is, JSO supervisors were significantly more likely to know about their children’s whereabouts than were JD supervisors.

The MANOVA for parental solicitation variables was also significant $F(20, 1642) = 8.522, p < .001, \text{Wilks' } \lambda = .82, \eta^2_p = .094$; see Table 3.3). Post-hoc tests suggested that, in general, parents of non-incarcerated juvenile controls solicit more information from their sons than do the parents of JSOs or JDs. However, for a number of items, JSOs appeared to form a unique middle group. Parents of JSOs appear to be significantly more likely to ask where their child was going when they went out, to ask if an adult will be there to supervise their child while they are out, and to meet the adult that is going to be present (where they are going) as compared to the parents of JDs.

The MANOVA for parental control variables was also significant $F(6, 1832) = 10.438, p < .001, \text{Wilks' } \lambda = .935, \eta^2_p = .033$; see Table 3.4). Notably, despite the significance of the test, very little of the variance associated with group membership was explained by the parental control items (3.3%). Follow-up analyses revealed that JDs lived in homes with the least amount of parental control. JDs were more likely to go out
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with friends without a supervisor and to be allowed to shop at stores alone. Further, JDs were least likely to report that their supervisors made rules to keep them out of trouble. A chi-square analysis was also performed to determine if groups differed on the dichotomous variable assessing the presence or absence of a curfew for participating youth. Consistent with the MANOVA results, JDs were significantly less likely to have a curfew than were JSOs or JCs, $\chi^2(2, N = 878) = 42.89, p < .001, \phi = .22$.

The MANOVA for parental persistence around rules was significant as well $F(8, 1822) = 24.367, p < .001, \text{Wilks' } \lambda = .82, \eta^2 = .097$; see Table 3.5). All subsequently performed univariate ANOVAs were significant at the .01 level. Post-hoc tests using a Bonferroni correction revealed that parents of non-incarcerated JCs were the most likely group to persist in rule setting and follow through. Overall, JD supervisors were the least likely parents to persist, while JSO supervisors fell in between the two other groups. Perhaps unsurprisingly, non-incarcerated JCs were the least likely to report that their supervisors caught them breaking rules. Contrary to our hypotheses, however, JSOs were the group most likely to report that if they were caught, they would get in trouble.

Discussion

This investigation was designed to fill a critical gap in the literature by examining whether self-reports of parental monitoring differed between juvenile sexual offenders (JSO), juvenile delinquents (JD), and non-incarcerated juvenile controls (JC). Findings from this investigation provide preliminary evidence to support the notion that parental
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monitoring differs between JSOs, JDs and JC. This is the first study to investigate and detect monitoring differences between JSOs and other adolescent sub-groups.

Routine Activity Theory may provide an explanation for the association between youth offending and parental monitoring and can be used to inform this study’s findings. According to Routine Activity Theory, crime is driven by the presence or absence of three factors: 1) a motivated offender, 2) a suitable victim, and 3) the presence or absence of a capable guardian (Cohen & Felson, 1979). Several studies examining issues consistent with this theory have reported a significant relationship between unsupervised routine activities, adolescent delinquency, and parental knowledge (i.e., Laird, Criss, Pettit, Dodge & Bates, 2008; Osgood & Anderson, 2004; Walters, 2017). Moreover, Walters (2017) found evidence that parental knowledge may serve to decrease adolescent delinquency by supporting parents’ ability to guide a youth’s unstructured activities. This suggests the value of developing interventions that bolster parents’ ability to effectively monitor their adolescents as a method of preventing or reducing crime. In this study, JC indicated that they were supervised better than JSOs and JDs and were also more likely to report that a parent was in the house when they were home. While not a robust measure of monitoring, this finding nonetheless adds to the body of literature supporting the presence of differences in the supervisory behaviour of non-delinquent youth’s parents as opposed to delinquent youths’ parents (Kerr et al., 2010). Future research should more rigorously investigate the degree to which proximity of a parent may protect against adolescent sexual and non-sexual offending.
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Parental solicitation findings reflect a number of interesting results as well. JSOs reported that their parents were higher on solicitation than JDs, but lower than JCs. Parental solicitation items include asking where the youth will be going, if an adult will be there to supervise, meeting the adult that is going to be supervising the adolescent, and calling to make sure a supervisor is actually going to be present. It follows that those strategies may not be enough to prevent youth from sexual offending, particularly if parents don’t use these strategies consistently. Moreover, meeting a parent who will be supervising a youth in their home is not the same as vetting that person to ensure that they are a quality supervisor. Finally, a particular supervisor may not be sufficiently educated to effectively recognise and intervene in situations where adolescents may be behaving inappropriately (Kaufman, Hayes & Knox, 2010). These findings are consistent with Seto and Lalumiere’s (2010) “specialised” explanation of juvenile sexual offender perpetration. Their review found that although most JSOs have committed non-sexual crimes, they still tend to have less extensive criminal histories, along with fewer antisocial peers, compared to non-sexual offenders. Given these findings, it is not surprising that parents of JSOs were found to exhibit levels of solicitation that fall between those of JD and JC parents.

Findings also revealed that supervisors of JSOs and JDs were similar on several key dimensions. First, supervisors of JSOs and JDs infrequently ask youth what they are doing, who they will be with, and when they will be home. This highlights a critical gap in these supervisors’ monitoring behaviours. Walter’s (2017) findings that parents must
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have knowledge about their child’s activities in order to divert them from potentially risky or harmful situations underscores the critical nature of this gap in parents’ monitoring. Second, supervisors of JSOs did not differ from those of either JDs or JCs in the likelihood they would call to make sure another supervisor was present. However, JSOs’ and JDs’ parents were similarly less likely to check to see if another supervisor was present where their son was going compared to parents of JCs. This subtle difference may reveal an important distinction in the rigour and quality of monitoring on the part of JSOs’ parents as opposed to JCs’ parents (Dishion & McMahon, 1998). For instance, a parent who simply calls to see if a supervisor is present is likely to be less effective in keeping their child out of trouble compared to a parent who takes the time to talk in detail with the supervisor about their expectations for limits to be placed on their child and for his supervision (e.g., ensuring that the supervisor will be present or checking in). Future research should examine how parents can most effectively engage with one another to clarify differences in monitoring and to maximise the impact of active monitoring.

Technological advancements that make it easier to keep in touch with or track children and adolescents will also have important implications for how parents monitor and solicit information from youths (Racz & McMahon, 2011).

Previous literature has not found parental control to be strongly associated with youth deviance, however, this study identified a number of related group differences. For example, all youth were more likely than not to have a curfew, but significant differences existed between groups such that JDs were least likely to report a curfew (74.3%),
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followed by JSOs (87.7%), and then JCs (93.7%), who were most likely to report a curfew. A recent review suggested that curfew ordinances do not have a meaningful effect in reducing juvenile victimisation or offending (Wilson, Olaghere & Gill, 2016). The authors also point to findings by Gottfredson and Soule (2005) that most juvenile crime happens before and after school, not at night. This does not mean that a curfew is not an important supervision component, but only that it may not be sufficient to keep youth out of trouble. It does indicate the need to better educate parents to ensure that they are aware of the times of the day that represent the greatest risk for youth to commit a crime. Results also suggested that the JDs’ supervisors make fewer rules to keep them out of trouble, with no difference between JSOs and JCs. It is important to consider that the associated effect size was quite small. Nonetheless, it is interesting to note that JSOs tended to be subject to more rules than their JD counterparts.

Parental control findings further revealed that JSOs were most likely to report that if they were caught engaging in inappropriate behaviour, they would get in trouble. Again, this finding is consistent with Seto and Lalumiere’s (2010) specialist explanation for juvenile offending behaviour. JCs were probably less likely to get in trouble for breaking the rules compared to the offender groups because they were doing so in a less severe way or were generally trusted by their parents. Parents of JDs, on the other hand, may not discipline their child due to financial stress or other family or neighbourhood stressors that impede their parenting abilities (Ceballo & McLoyd, 2002). JSOs’ supervisors may be punishing their children at a higher rate because they are generally
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well behaved, but parents may be finding some reason to distrust them, or perhaps the JSOs are beginning to engage in other types of problem behaviours such as substance use (Seto & Lalumiere, 2010). Of course, JSOs may be more likely to have consequences when they break general household rules due to supervisors’ concerns over suspicions or direct knowledge of some inappropriate sexual behaviour on the youth’s part. Future research should investigate what types of rules JSOs are subject to prior to exhibiting sexual problems, how their supervisors respond to rule breaking, and what factors may explain the greater consequences they receive for rule breaking relative to other teens.

The pattern of findings for parental knowledge is consistent with that found for the parental solicitation results. JSOs’ supervisors are described by their sons as having a level of knowledge between that of JDs’ and JC’s supervisors on items that include knowing where the youth went while they were out and knowing where they went after school. Again, this may reflect group differences in JSOs versus JDs where they exhibit some antisocial behaviours, but to a lesser extent than non-sexual JD offenders (Seto & Lalumiere, 2010). Despite being more likely to know their son’s whereabouts, JSO’s supervisors were similar to JD’s supervisors in their lack of knowledge about who the youth was with or what they were doing. These findings suggest that parents’ knowledge of the “who” and “what,” as well as the “where,” are all important pieces of effective parental monitoring. There is increasing evidence that parental knowledge is an important protective factor for preventing juvenile delinquency (Walters, 2017). These
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results suggest that it would be productive to extend this line of research to examine the behaviour of JSOs as well.

**Implications for Prevention**

Study findings reveal a number of differences in parental monitoring experienced by JSOs, JDs, and JCs that lend themselves to remediation with preventive intervention approaches. For example, findings indicate that parents of sexual and non-sexual delinquent youth tend not to ask or know about their child’s day-to-day routine activities such as what they are doing and who they will be with. There is some evidence that the combination of parental monitoring and active parent-child communication can reduce engagement in risky sexual behaviours (i.e., pre-coital sexual behaviour; Santa Maria et al., 2014). This highlights the importance of addressing the lack of communication found in parents of JSOs and JDs in this study. Moreover, it’s possible that simply educating these parents to inquire regarding their sons’ whereabouts and plans may have an impact on reducing offending. Parents could be provided with a simple script outlining the types of details their child should be sharing with them, what they can ask to solicit information of this nature and how they might go about diverting their son from impending trouble. Furthermore, parents should not rely solely on other supervisors (i.e., their child’s friends’ parents) to prevent their son’s involvement in risky or illegal behaviour. Further research is needed to investigate how parents can best vet “proxy” supervisors for their children. As noted earlier, it will be important to ensure that parents’ prevention training includes preparing them to go above and beyond in making sure alternative supervisors
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are actually invested in actively supervising the youth. For instance, parents may want to solicit information from their child about the type of supervision they receive and the activities they are engaging in when a parent turns supervision over to another adult. A growing body of literature supports parental knowledge and solicitation as important protective factors against juvenile delinquency, and study findings suggest that these protective factors may extend to the prevention of sexual abuse committed by juveniles as well.

The lack of differences between JSO and JC parents on parental control, in this study, provides preliminary evidence that high control is not effective at preventing juvenile sexual offending. There are several possible explanations for why this is the case. First, the controls that parents are imposing on their adolescents to keep them out of trouble may not relate specifically enough to the types of rules and limits that are critical to helping an adolescent avoid involvement in sexual offending (i.e., consent, sexual touch, and personal boundaries). In fact, a youth who may have risk factors for sexual offending (i.e., atypical sexual interests, sexual abuse history, poor parent-child attachment, exposure to non-sexual violence, antisocial associations, substance abuse problems; Seto & Lalumiere, 2010) may benefit little from more general efforts at parental control (e.g., curfew). Secondly, it is possible parents of JSOs are responding with increased levels of control to problem behaviours they have already recognised in their child. Longitudinal research is needed to understand exactly how different facets of parental monitoring relate to youth offending. Nonetheless, these results along with
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existing literature do not point to parental control as an effective means of preventing juvenile delinquency (Hoeve et al., 2009; Rekker et al., 2017). As children become teens, and later adults, they seek autonomy from their parents, and may reject strict control. Future studies may reveal how parental control can be imposed in a way that is developmentally appropriate and perceived by the youth as in their best interest. In the mean-time, parents’ best means of control may be to incorporate rules about sexual boundaries and consent into the expectations they set forth for their child or adolescent in a developmentally appropriate way.

Limitations

These findings are subject to certain limitations. First, results strictly reflect the perspective of juvenile participants, and may not accurately represent the supervision provided by their parent. Emerging evidence does however suggest that behavioural outcomes may be more closely related to adolescent reports of parental monitoring compared their parents’ own reports (Abar, Jackson, Colby & Barnett, 2015). Second, incarcerated youth were asked to retrospectively report on their supervision for the last calendar year in which they lived at home. This created an inconsistency in measurement, as some youth have been incarcerated for much longer periods of time than others. Further, non-incarcerated youth were not retrospectively reporting at all. At the time of the data collection, juvenile controls lived at home with their caregivers and were reporting on the quality of their current supervision. Finally, this study is a direct comparison of participant groups, yet since the youth are categorized based on the crimes
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for which they were most recently incarcerated, it is possible that some youth in each of
the groups have committed crimes for which they have not been apprehended. This
method of categorizing youth, while common, also fails to capture lapses in parental
monitoring by parents who are not aware that their child is committing sexual abuse or
other non-sexual offenses. As such, it will be important in the future to explore
mechanisms for more accurately grouping youth (e.g., via self-report where anonymity is
assured) to reflect their true offense history.
## Table 3.1 Parental monitoring MANOVA and follow-up tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group Mean (SD)</th>
<th>F</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JSO $n = 316$</td>
<td>JD $n = 315$</td>
<td>JC $n = 243$</td>
</tr>
<tr>
<td>Parental Monitoring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of supervision</td>
<td>2.2 (.60)$^a$</td>
<td>2.4 (.59)$^a$</td>
<td>2.7 (.42)$^a$</td>
</tr>
<tr>
<td>Stay home alone</td>
<td>2.9 (.93)$^c$</td>
<td>2.9 (1.10)$^c$</td>
<td>3.30 (.83)$^a$</td>
</tr>
</tbody>
</table>

Note. $a = a$ significant difference from the JSO group  
$b = a$ significant difference from the JD group  
$c = a$ significant difference from the JC group  
$* = p < .05$, ** = $p < .01$, *** = $p < .001$
## Table 3.2. Parental knowledge MANOVA and follow-up tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group Mean (SD)</th>
<th>F</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JSO  n = 292</td>
<td>JD  n = 312</td>
<td>JC  n = 239</td>
</tr>
<tr>
<td><strong>Parental Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knew where youth was</td>
<td>1.7 (.93)a</td>
<td>1.5 (.98)a</td>
<td>2.4 (.75)a</td>
</tr>
<tr>
<td></td>
<td>61.88***</td>
<td>.128</td>
<td></td>
</tr>
<tr>
<td>Knew what youth was doing</td>
<td>1.2 (.97)a</td>
<td>1.1 (.97)a</td>
<td>2.1 (.88)a</td>
</tr>
<tr>
<td></td>
<td>80.22***</td>
<td>.160</td>
<td></td>
</tr>
<tr>
<td>Knew where youth went after school</td>
<td>1.8 (1.10)a</td>
<td>1.4 (1.11)a</td>
<td>2.4 (.85)a</td>
</tr>
<tr>
<td></td>
<td>64.57***</td>
<td>.133</td>
<td></td>
</tr>
<tr>
<td>Knew youth’s friends</td>
<td>1.8 (1.10)a</td>
<td>1.8 (1.10)a</td>
<td>2.2 (.88)a</td>
</tr>
<tr>
<td></td>
<td>15.34***</td>
<td>.035</td>
<td></td>
</tr>
<tr>
<td>Knew who youth was with</td>
<td>1.6 (1.03)a</td>
<td>1.5 (1.03)a</td>
<td>2.3 (.83)a</td>
</tr>
<tr>
<td></td>
<td>46.82***</td>
<td>.100</td>
<td></td>
</tr>
<tr>
<td>Knew what youth was doing at home</td>
<td>1.8 (.91)a</td>
<td>2.0 (.93)a</td>
<td>2.3 (.79)a</td>
</tr>
<tr>
<td></td>
<td>24.92***</td>
<td>.056</td>
<td></td>
</tr>
</tbody>
</table>

Note. a = a significant difference from the JSO group  
  b = a significant difference from the JD group  
  c = a significant difference from the JC group  
  * = p < .05, ** = p < .01, *** = p < .001
## Table 3.3 Parental solicitation MANOVA and follow-up tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group Mean (SD)</th>
<th>F</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JSO</td>
<td>JD</td>
<td>JC</td>
</tr>
<tr>
<td><em>n = 287</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental Solicitation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Asked where youth was going</strong></td>
<td>2.9  (1.10)</td>
<td>2.6  (1.30)</td>
<td>3.6 (1.70)</td>
</tr>
<tr>
<td><strong>Asked what youth was doing</strong></td>
<td>2.6  (1.10)</td>
<td>2.4  (1.22)</td>
<td>3.3 (0.94)</td>
</tr>
<tr>
<td><strong>Asked who youth was with</strong></td>
<td>2.5  (1.22)</td>
<td>2.4  (1.30)</td>
<td>3.3 (1.02)</td>
</tr>
<tr>
<td><strong>Asked when youth would be home</strong></td>
<td>2.9  (1.17)</td>
<td>2.7  (1.27)</td>
<td>3.4 (0.97)</td>
</tr>
<tr>
<td><strong>Asked youth to call when arrived</strong></td>
<td>2.3  (1.34)</td>
<td>2.5  (1.36)</td>
<td>2.7 (1.3)</td>
</tr>
<tr>
<td><strong>Asked if an adult was present</strong></td>
<td>2.0  (1.35)</td>
<td>1.6  (1.38)</td>
<td>2.6 (1.32)</td>
</tr>
<tr>
<td><strong>Called to check if an adult was present</strong></td>
<td>1.5  (1.29)</td>
<td>1.3  (1.37)</td>
<td>1.7 (1.39)</td>
</tr>
<tr>
<td><strong>Met with supervising adult</strong></td>
<td>1.6  (1.38)</td>
<td>1.3  (1.35)</td>
<td>1.9 (1.36)</td>
</tr>
<tr>
<td><strong>Checked if youth was where they said they were</strong></td>
<td>1.8  (1.13)</td>
<td>1.6  (1.27)</td>
<td>2.3 (1.26)</td>
</tr>
<tr>
<td><strong>Checked if an adult was present</strong></td>
<td>1.5  (1.18)</td>
<td>1.4  (1.33)</td>
<td>2.0 (1.13)</td>
</tr>
</tbody>
</table>

Note. a = a significant difference from the JSO group  
b = a significant difference from the JD group  
c = a significant difference from the JC group  
* = p < .05, ** = p < .01, *** = p < .001
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Table 3.4 Parental control MANOVA and follow-up tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group Mean (SD)</th>
<th>F</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JSO</td>
<td>JD</td>
<td>JC</td>
</tr>
<tr>
<td></td>
<td>n = 332</td>
<td>n = 336</td>
<td>n = 253</td>
</tr>
<tr>
<td>Parental Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allowed to go to friend’s house unsupervised</td>
<td>2.5 (1.40)^b</td>
<td>3.0 (1.35)^ac</td>
<td>2.3 (1.41)^b</td>
</tr>
<tr>
<td>Allowed to go to store alone</td>
<td>2.5 (1.40)^b</td>
<td>2.8 (1.41)^ac</td>
<td>2.5 (1.40)^b</td>
</tr>
<tr>
<td>Had rules to prevent them from getting in trouble</td>
<td>3.3 (1.12)^b</td>
<td>2.9 (1.39)^ac</td>
<td>3.5 (1.06)^b</td>
</tr>
</tbody>
</table>

Note.  
- a = a significant difference from the JSO group  
- b = a significant difference from the JD group  
- c = a significant difference from the JC group  
- * = p < .05, ** = p < .01, *** = p < .001
Table 3.5 Parental persistence MANOVA and follow-up tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>JSO</th>
<th>JD</th>
<th>JC</th>
<th>F</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=331</td>
<td>n=340</td>
<td>n=246</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental Persistence</td>
<td></td>
<td></td>
<td></td>
<td>24.37***</td>
<td>.097</td>
</tr>
<tr>
<td>Made sure rules were understood</td>
<td>3.1</td>
<td>2.7</td>
<td>3.5</td>
<td>28.05***</td>
<td>.058</td>
</tr>
<tr>
<td>(1.13)bc</td>
<td>(1.40)ac</td>
<td>(1.01)b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made sure rules were followed</td>
<td>2.7</td>
<td>2.3</td>
<td>3.4</td>
<td>56.17***</td>
<td>.109</td>
</tr>
<tr>
<td>(1.15)bc</td>
<td>(1.40)ac</td>
<td>(1.03)ab</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caught me doing wrong things</td>
<td>1.9</td>
<td>2.0</td>
<td>1.4</td>
<td>19.31***</td>
<td>.014</td>
</tr>
<tr>
<td>(1.11)c</td>
<td>(1.32)c</td>
<td>(1.30)ab</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If caught, got into trouble</td>
<td>2.9</td>
<td>2.2</td>
<td>2.5</td>
<td>11.89***</td>
<td>.025</td>
</tr>
<tr>
<td>(2.57)bc</td>
<td>(1.42)a</td>
<td>(1.57)a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. a = a significant difference from the JSO group
b = a significant difference from the JD group
c = a significant difference from the JC group
* = p < .05, ** = p < .01, *** = p < .001
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CHAPTER IV: MANUSCRIPT III. THE DEVELOPMENT OF A MEASURE OF TECHNOLOGY BASED PARENTAL MONITORING FOR PARENTS OF ADOLESCENTS

Abstract

Parental monitoring has long been of interest to social scientists investigating correlates of juvenile delinquency and victimization. Despite the increasing availability of technology for parents to engage in monitoring, no quantitative measure of technology based parental monitoring (TBPM) has yet been developed. The purpose of this study was to develop a parent-report survey measure of TBPM. The scope of the study includes the construction of the scale, collection of data from parents of adolescents, factor analyses of the resulting data, and reliability analyses. Exploratory analyses were also conducted to determine whether correlations existed between TBPM scores and key demographic variables, including number of children and teenagers in the family, race, marital and employment status of the parent, age and gender of the parent and child, urban versus suburban or rural location, and parents’ level of trust in their child. The TBPM measure will help future researchers explore parents’ engagement with different forms of technology to communicate with their youth and how that leads to differential outcomes for youth.
Introduction

Parent-child relationships have long been considered an important part of child development. As a child grows into an adolescent, their parents begin to allow greater independence, relying less heavily on strict rules and control to keep them safe and out of trouble (Dishion & McMahon, 1998). Instead, parents keep track of their older adolescents by soliciting self-report information from the youth about how they are spending their time, where they go, and who they spend time with, as well as by requiring more responsibility from youth as they develop, (e.g., giving them a curfew by which they need to be home at night). In addition to their own solicitation, parents also rely on youths’ spontaneous disclosure of information to gain information about their lives (Stattin & Kerr, 2000). Parental knowledge about their adolescent is therefore comprised of these distinct modes of gaining information, through youth disclosure, parental solicitation, and parental control. This greater parental knowledge of their child’s behavior is associated with numerous positive outcomes for youth, including reduced juvenile delinquency and victimization (e.g., Bendezú, Pinderhughes, Hurley, McMahon, & Racz, 2017; Esbensen, Huizinga, & Menard, 1999; Turner, Finkelhor, & Ormrod, 2007).

Over the past 20 years, researchers have become increasingly concerned with inconsistent definitions applied to parental monitoring behaviors. The parental monitoring literature remains fraught with conceptual issues, such that researchers continue to mislabel parental knowledge (i.e., knowing where the child is and what they
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are doing) as parental monitoring (i.e., active efforts to track the child using solicitation and control; Racz & McMahon, 2011). Moreover, a wide variety of self-report measures for parental monitoring have been developed for each of these incongruent definitions, making cross-study comparisons a challenge (e.g., Dornbush et al., 1985; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998; Stattin & Kerr, 2000). Another issue typically associated with parental monitoring measurement is a lack of attention to the child’s stage of development. Measures that are created for use with younger children may capture behaviors that are inappropriate for older children or teens. Moving forward, Stattin & Kerr (2000) recommend that measurements attempt to capture the strategies parents engage in to monitor their child from infancy through adulthood, as well as strategies used by parents to optimize conditions for their child’s self-disclosure of their own activities and whereabouts.

The limited nature of this literature suggests that new technologies offer parents a variety of potentially more effective methods for both tracking their child and encouraging the disclosure of their behavior. Teenagers, in particular, are likely to spend an increasing amount of time away from their parents. While this may make monitoring more challenging, they are also more likely to have a cellphone and use social media which offers greater opportunities for parental monitoring (Racz, Johnson, Bradshaw & Cheng, 2017). Parents, who have differing levels of technological knowledge, must decide what role technology plays in their parenting. They must also learn to avoid being overly invasive in their use of technology to track their children, as this may discourage
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disclosure and encourage secretive behavior (Racz et al., 2017). Much more research is
needed to determine the optimal use of technology by parents to protect youth from harm.

Review of the Literature

There is a substantial literature relating parental monitoring to important child
outcomes (e.g., increased psychological well-being, decreased victimization, conduct
problems, and delinquency; Ceballo, Ramirez, Hearn, & Maltese, 2003; Dishion &
McMahon, 1998; Low & Espelage, 2014). Despite this large body of literature, few
studies have investigated how parents utilize technology to monitor their children. This is
particularly surprising given that the socioeconomic gap related to technology access has
become progressively smaller, and more parents and teenagers are using cellphones as
their primary means of communication. In fact, data from the Pew Internet and American
Life Project (Lenhart, 2012, 2015) found that cellphone ownership for youth ages 13 to
17 increased from less than half in 2004 to 88% in 2015. Further, they found that most
U.S. youth now regularly utilize social media sites, such a Facebook. Cellphone and other
technology use may be a particularly important tool for low income and single parent
families to monitor their children, particularly if these parents are balancing multiple
family and work-related demands (Racz et al., 2017).

Despite the increase in access, there is likely to be variation in the degree to which
parents use technology as a monitoring tool, especially considering that many parents
struggle to keep up with their more ‘tech savvy’ youth (George & Odgers, 2015).
Research suggests that demographic differences exist, such that white and Asian-
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American men and those with well-educated parents tend to use technology with more ease compared to others (Hargittai, 2010). At the same time, low-income adolescents are less likely to have access to internet-enabled smartphones compared to other youth, but they are more likely to use Facebook (Lenhart, 2015). More research is needed to determine how cultural differences and socioeconomic status impact norms around technology use and its application to parental monitoring.

The literature points to a variety of ways that parents engage with technology to monitor youth. While phone usage has been included in recent measures of parental monitoring, there is relatively little research examining how parents monitor their youth using phones (Stattin & Kerr, 2000). One study found that parental knowledge was associated with adolescent-initiated phone calls, but not with parent-initiated phone calls (Weisskirch, 2009). Perhaps this is due to the propensity of parents to increase their frequency of calls to their child when they are angry with them or suspicious of what they are doing. When it comes to cellphone use, focus groups reveal that teens largely prefer texting with their parents over calling, since it allows them to maintain more privacy, avoid potentially long conversations, limit questions about their behavior and/or avoid their parent yelling at them (Racz et al., 2017). Parents text teens to find out what they are doing and who they are with, as well as to ask them open ended questions, such as how their day is going. Some teens report that if they don’t answer the phone, their parent will just send a follow up text (Racz et al., 2017). Future research is needed to determine how effective texting, versus calling or video-enabled calling is for monitoring, the particular
situations that warrant different types of contact, and how parents should balance their child’s need for independence, while still protecting them from harm. In their 2015 review, George and Odgers found insufficient evidence to determine whether parental monitoring using mobile devices actually leads to increased parental knowledge or positive behavior changes in adolescents. In sum, longitudinal research is especially needed to determine whether a causal relationship exists between cell phone monitoring and a decrease in negative outcomes for youth.

In addition to examining calling and texting on mobile phones, recent studies have also investigated how parents and their children interact on social media sites, such as Facebook. One study from 2014 of 491 adolescents and their parents found that half of the adolescents in their sample connected with their parent via Facebook, and that one fifth of the teens interacted with their parents daily on social media (Coyne, Padilla-Walker, Day, Harper, & Stockdale, 2014). Social media connections fostered a closer connection between parents and teens, and conversely, teens with a high level of social media usage, who were not connected with their parent on Facebook, exhibited less closeness with their parent, higher relational aggression, and increased delinquency (Coyne, Padilla-Walker, Day, Harper, & Stockdale, 2014). Despite the positive effects associated with parent-child connections through social media, focus groups revealed that many adolescents are wary of their parents being overly intrusive on social media (Madden, Lenhart, Cortesi, Smith, & Beaton, 2013; Racz et al., 2017). Adolescence is a time of growing autonomy and having a parent commenting or expressing concerns over...
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how the teen is presenting him or herself online. Often, adolescents can perceive this as an invasion of privacy. More research is needed to determine how parents can balance respect for their teen’s autonomy with efforts to monitor and encourage disclosure through social media, as well as by other means (e.g., phone calls, text messages). In order to accomplish this, there is a critical need to develop valid and reliable measures of technology based parental monitoring.

Amazon Mechanical Turk

The previous section briefly described the literature around parents use of technology to monitor their teens. The following section will provide background information about the method of data collection that was used in the study: Amazon Mechanical Turk (MTurk). Since MTurk is a relatively novel form of data collection, justification for its use is provided.

MTurk is an online labor market where researchers or other temporary employers called “requesters” can employ “workers” for short-term human intelligence tasks (HITs), such as filling out surveys, in exchange for monetary compensation (Dworkin, Hessel, Gliske, & Rudi, 2016). The low cost and convenience of MTurk has made it a popular data collection tool among social science researchers. Consequently, a variety of questions have arisen regarding the representativeness of MTurk samples and the motivation of MTurk respondents (Goodman, Cryder, & Cheema, 2012; Peer, Vosgerau, & Acquisti, 2014).
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In terms of representativeness, MTurk samples actually show greater diversity in age and race compared to other sampling methods, and of importance to this study, a higher proportion of fathers participating in family studies (Buhrmester, Kwang, & Gosling, 2011; Schleider, & Weisz, 2015). Moreover, reported demographics by MTurk workers who participate in multiple studies have been found to be reliable (Mason & Suri, 2012). The ability to reach a diverse pool of participants is a significant strength of MTurk, particularly given criticism by Tamis-LeMonda, Briggs, McClowry, and Snow (2008) that African American parents have been systematically excluded from parenting research that utilizes traditional sampling strategies. Another major concern about MTurk respondents is the extent to which respondents are motivated to respond to items accurately. Some respondents choose to use “attention checks” (i.e., reverse coded items), but researchers are in disagreement as to whether attention checks enhance the quality of responses, or whether the removal of participants based on attention checks biases findings (Goodman et al., 2013). One study actually found that MTurk workers outperform respondents from traditional samples on attention-check items (Hauser & Schwarz, 2016). Still, researchers can take steps to mitigate this problem by using MTurk to limit the pool of respondents to high-reputation workers only (i.e., those with approval ratings over 95%; Peer et al., 2014).

A recent study by Dworkin et al. (2016) compared the effectiveness of MTurk with two other internet-based data collection methods for sampling parents of high school and college-age youth: (1) Email Listservs; and (2) Social networking sites. E-mail
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Listservs are mailing lists that people join based on common interests or group membership (e.g., being a parent), and thus, they can be a cost effective-means for researchers to access participants. Challenges associated with using Listservs include slow response times, low response rates, and homogeneous samples, as was the case in Dworkin et al.’s (2016) study. Social Networking sites, such as Facebook, are websites where people create profiles based on personal information, which they can use to interact with friends, family, and people with common interests (Boyd & Ellison, 2007). Advertisements featured on Facebook can be an effective means of collecting representative samples, however, researchers have reported a great deal of variation in the sample size, length of time required for data collection, and cost per participant. Further, Dworkin et al. (2016) found that parents of high school and college students were not easy to identify, as many of them did not actually self-identify as parents in their profiles. Ultimately, MTurk eliminates many of the challenges associated with Listservs and social media sites with quick data collection, the ability to solicit groups of parents, low per participant costs, and the ability to gather an acceptably diverse sample.

Despite the advantages of using Mturk, it does introduce certain biases into studies. Mturk workers may be quicker to adopt technology compared to community samples. Mturk workers have also been found to be more highly educated compared to community samples, and to have lower incomes (Paolacci, Chandler, & Ipeirotis, 2010). Furthermore, findings indicate that Mturk workers are lower on extroversion, emotional stability, and self-esteem compared to community samples (Downs, Holbrook, & Peel,
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2012). While research is still needed to further determine the viability of MTurk as a data collection tool, it is a cost-effective first step for generating data that can later undergo additional testing using alternative sampling methodologies (Schleider, & Weisz, 2015).

**Purpose of the Present Study**

There is growing qualitative support in the literature which indicates that technology plays an important role in how parents communicate with their teens, however, a quantitative measure of technology based parental monitoring in not currently available. The purpose of this study was to develop the first quantitative measure to assess Technology Based Parental Monitoring (TBPM), defined as behaviors used by parents to track their child’s activities and whereabouts using communication devices or the internet. The TBPM measure was designed to be a self-report, parent completed survey instrument. The measure will assist future researchers in assessing the extent to which parents’ engagement with different forms of technology to communicate with their adolescents may lead to differential outcomes in their children (e.g., positive socialization, delinquency, victimization) as compared to parents-child dyads who communicate with one another using little or no technology. The scope of this study included the construction of this scale, collection of data on the scale from parents describing their use of technology in communicating with their adolescent sons/daughters, factor analysis of the resulting data, and tests of dimensionality and homogeneity. Exploratory analyses were conducted to determine whether correlations exist between TBPM scores and age, race, marital and employment status of the parent,
age and gender of the parent and child, number of children and teens in the household, urban versus suburban or rural location, and parent trust in their teen.

**Methods**

The following sections will describe the methods used in this study, including participants used and procedures followed.

**Participants**

*Subject Matter Experts*

A panel of 16 experts in the field of Psychology were recruited via email to evaluate the initial pool of items generated by the author from existing literature. Participants were selected through convenience sampling. They had expertise in the areas of child development, adolescent development, and/or juvenile delinquency, and helped to ensure that the measure accurately aligned with the TBPM construct (Hinkin, 1998).

Next, a group of 12 parents were recruited on MTurk with adolescents in the target age range (i.e., 13-17 years) were asked to provide input on key items that they saw as germane to the construct. These parents were also asked to check the clarity of the items as well as the measure’s instructions. The use of small pilot groups for initial test construction is supported as sufficient in the measurement development literature (Anderson and Gerbing, 1991; Schriesheim et al., 1993).

*Developmental Sample*

In completing the scale development process, it is important to utilize a sample that closely matches the population to which the measure will be applied (DeVellis,
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A sample of 367 parents of adolescents was collected using Amazon’s crowd sourcing pool MTurk for factor analyses. Recommendations for appropriate sample sizes for factor analysis range from three (Gorsuch, 1983) to ten (Everitt, 1975) respondents per measure variable. In reality, the number of participants needed is more accurately determined by other factors such as communality of the variables (MacCallum, Widaman, Zhang & Hong, 1999). For this study, I followed recommendations by Hoelter (1983) who suggested that a minimum sample of 200 participants be used.

Procedures

Subject-matter experts were contacted via email to provide feedback on the initial set of items. Several changes were made based on this feedback. For instance, five subject matter experts suggested adding an item about checking device or browser history, (e.g., “check your child's online browsing history?”). A question was also added about passcodes (i.e., Do you have the passwords/pass codes to any of your child's Internet accessible devices?). The timeframe for all of the questions were reduced from one month to one week in order to improve participant recall. After changes were made based on this feedback, the final survey was posted on MTurk. Participants in the developmental sample completed the TBPM survey on MTurk between December 2nd, 2018 and December 29th 2018. Each participant was allowed 1 hour to complete the survey and was paid $.60 upon completion.

Results
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The section that follows will describe the results of this study. This includes item development, preliminary analyses from the developmental sample, scale development, and finally, exploratory analyses based on the final TBPM measure.

**Item Development**

The TBPM measure was developed using a deductive process in which items were generated from existing literature to fit the first author’s theoretical model of parental monitoring through technology (Schwab, 1980). In other words, a top-down approach was used wherein questions specific to technology use were generated to reflect existing parental monitoring measures (Dishion & McMahon, 1998; Stattin & Kerr, 2000). An advantage of using a deductive approach where items are generated to fit preexisting constructs is that it helps to assure content validity in the final scales (Hinkin, 1998). Initial items were generated by drawing from Stattin and Kerr’s (2000) Parenting Practices Scale, as well as from a review of recent quantitative and qualitative studies investigating how parents and youth engage with technology (George & Odgers, 2015; Madden et al., 2013; Racz et al., 2017; Symons et al., 2016). Items generated reflected two particular factors from Stattin and Kerr’s (2000) original scale: (1) Parental Control; and (2) Parental Solicitation. In this stage of the study, content redundancies were created to generate sufficient items to serve as a foundation for internal reliability for each of the scales (Hinkin, Tracey & Enz, 1997). This means more than one item representing particular aspects of these two domains were included in the initial draft measure. In the initial item development stage, it is important to be overly inclusive of items that
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represent aspects of the underlying theory so that poorly performing items can be removed (Clark & Watson, 1995). Additional items were generated through the process of soliciting input from expert reviewers. The final scale items included Stattin and Kerr’s (2000) original Likert scale question structure using a five-point scale. Participants were asked about the past week, and response options queried as to how often they used various approaches to parental control and solicitation with the following possible responses: 0 = never, 1 = once or twice, 2 = 3 to 6 times a week, 4 = Once a day or more. Alternatively, some questions used these alternative response options: 0 = never, 1 = rarely, 2 = about half the time, 3 = most of the time, and 4 = always. Examples include, “In the past week, how often did you use video-calling (such as FaceTime), to ask who your child is with?” and “Do you discipline your teen if they do not follow the rules for keeping in touch while they are out?”

Items generated from the literature for inclusion in the initial TBPM measure were reviewed by two groups of content experts: experts in developmental psychology and parents of teenagers. Respondents were provided with a written definition of TBPM and presented with the series of items generated from the research literature in this area (Hinkin et al., 1997). Respondents were asked to identify any portion of the item that was unclear and write in recommended changes to those items. Finally, they were asked to indicate any questions that could be added to capture other aspects of this domain that were not already included in the existing items. Items were modified, added, and
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removed based on professional feedback (Hinkin et al., 1997). Once a final set of items
was assembled, it was administered to a sample of parents of adolescents via MTurk.

Preliminary Analyses

Of the final sample, a total of 167 responses were dropped from the analyses due
to their reports that they did not have any teenagers living in their home \((n = 34)\), because
they reported a larger number of adults in their household that were responsible for
supervising the teen than the number of adults that lived in their household in general \((n
= 44)\), or because they were part of a large number of respondents who were geo-tagged
as being in approximately the same specific geographic location \((n = 135)\). For example,
83 participants were tagged in the exact same location in Chennai, India. It is possible
that a small number of different respondents came from the same location for legitimate
reasons. For instance, they may be living in an apartment complex where many
inhabitants use MTurk for extra income, or they may be using a VPN. Despite the risk of
losing legitimate respondents, the motivation of these respondents was questionable, so
they were deleted from the sample. Moreover, an unusually high proportion of these
participants reported that they were bisexual \((23\%)\) compared to the final sample \((3.5\%)\)
and a large proportion of respondents reported using video-games to message their teens
\((87.4\%)\) compared to the final sample \((18\%)\). For these reasons, these responses were
removed. Finally, one respondent \((n = 1)\) was removed for reporting they were between
the ages of 18 and 24 with a biological child who was 14. Another respondent \((n = 1)\) was
removed because they reported to be a grandparent between the ages of 24 and 35.
Responses that were removed came from India ($n = 131$), The United States ($n = 35$), and Portugal ($n = 1$). The implications of both removing such a large number of participants from the final analyses, and the utility of collecting data on this population (i.e., parents of adolescents) on MTurk will be discussed later in this paper.

This resulted in a final sample of $N = 200$ participants for inclusion in the final analyses. Participant Demographics are displayed in Table 4.1. These participants reported living in households with an average of 2.23 adults ($sd = .89$), an average of .81 children under 12 years of age ($sd = .97$), and an average of 1.3 teens ($sd = .65$) in their household. Participants reported the relationship to the teen they were reporting on as biological parent ($n = 183$), step-parent ($n = 8$), adoptive parent ($n = 7$), and grandparent ($n = 2$). The average age of the children they reported on was 14.60 years of age ($sd = 1.34$). Of those teens, 107 were male, 92 female, and one preferred not to answer. Respondents reported living with an average of 1.88 ($n = 199$, $sd = .53$) adults who shared responsibility for the teen they were reporting on (including themselves), and an average of .65 ($n = 198$, $sd = 1.11$) adults outside of the house, such as a babysitter, neighbor or teacher, who shared in that responsibility. Most of the teens the adults reported on owned a cellphone (91%), and a majority of their cellphones could make calls (95%), could send text messages (94%), had apps to access the internet (91.2%), had unlimited calling (68.13%), had unlimited messaging (69.23%), and had unlimited data plans (55.05%)

**Scale Development**
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Parents with multiple teens were randomly assigned to report on either their oldest or youngest teenager. Item variances, means, and corrected item-total correlations (i.e., the correlation between each item and the total score with that item removed) were analyzed to determine if any items are problematic before conducting an EFA (see Table 4.2; Clark & Watson, 1995). Items with high or low means and low variance were subject to review since those items may not actually distinguish between parents who are high or low on TBPM. Further, items with low corrected total-item correlations may contribute to low internal consistency (Clark & Watson, 1995). Despite most items displaying a positive skew, no items were deleted based on these statistics prior to the EFA.

Then, a series of EFAs were conducted to explore the dimensionality of the measure. Oblique rotation was used for the EFA since factors that were generated through this analysis were likely to be correlated with one another (Bandalos & Boehm-Kaufman, 2009). First, a parallel analysis was performed to determine the appropriate number of factors to extract. A parallel analysis is a process that compares eigenvalues from the sample data to eigenvalues produced by multiple sets of random data to determine the optimal number of factors (Fabrigar, Wegener, MaCallum & Strahan, 1999) Next, factor loadings and fit statistics (i.e., chi square, TLI, RMSEA, and RMS; Hu & Bentler, 1999) were examined to determine how well the data fit the model. Items were considered for removal if they did not load onto a factor at a cutoff of .3, or if they loaded onto more than one factor at a level of greater than .32 (Cabrera-Nguyen, 2010).
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Items were removed one by one and the EFA was repeated after the removal of each item. Altogether, six items were removed from this model. The final model had 5 factors that were named as follows: parental solicitation by call or text, parental monitoring with advanced technology, requiring phone calls, requiring texts, and requiring pictures. The final measure exhibited simple structure (i.e., high loadings on single factors, with low loadings on the remaining factors; Crocker, & Algina, 1986) with strong factor loadings of .49 or above (Table 4.3), and moderate to large correlations between factors (Table 4.5). An item correlation matrix is displayed in Table 4.4. The RMSR indicated good model fit (RMSR = .03), though the rest of the fit statistics indicated poor fit ($\chi^2 = 936.25, df = 206, p = .00; \text{RMSEA} = .11$).

Cronbach’s alpha indicated excellent reliability for the measure ($\alpha = .95$), however, since statisticians have consistently found Cronbach’s $\alpha$ to be a limited and problematic indicator of reliability, recommendations by Revelle and Zinbarg (2009) were followed to further evaluate the reliability of the final measure. This led to an investigation for homogeneity which involved testing for the presence of a general factor using McDonald’s (1978) $\omega_\alpha$. This was done using a nested confirmatory factor model with a Schmid–Leiman transformation to compare the model generated using EFA to a model with an additional second order factors loaded on by each of the previously generated factors. The resulting $\omega_\alpha$ indicated acceptable reliability ($\omega_\alpha = .75$).

Next, I investigated internal consistency by determining the proportion of test variance due to all common factors using $\omega_{\text{total}}$ (McDonald, 1999). This statistic indicates the
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upper bound to which the test items adequately reflect the factors as opposed to some alternative latent variable that the test did not intend to capture. Omega, indicated excellent reliability ($\omega = .98$) for the measure.

**Exploratory Analyses of the Relationship Between the TBPM And Demographics**

Regression analyses were used to determine whether group differences existed based on the parents’ demographic variables. TBPM subscales were examined in relation to: parents’ ages, their gender, their race, their employment status, their marital status, whether they lived in the city, suburbs or country, the number of children in their household, the number of teens’ in their household, the age and gender of the teen they reported on, and their reported level of trust in that teen.

In the regression analyses examining race, Hispanic, Native American, and “other” ($n = 7$) participants were removed because few participants reported these demographics. One participant who reported they were non-binary was removed from the gender analyses. The employment variable was recoded such that participants who worked both full and part time were re-coded as full time ($n = 159$), all unemployed respondents were compiled in a single category ($n = 14$), and part time workers remained a single category ($n = 27$). Marriage was recoded such that and respondent who were divorced, separated, or never married were classified as not married ($n = 24$), while being married ($n = 157$) and living with a partner ($n = 16$) were left unchanged.

A number of relationships emerged from these exploratory analyses. It was found that the older a parent was, the less likely they were to solicit information about their teen
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through calls or texts (Table 4.6), to used advanced technology for parental monitoring (Table 4.7), or to require their teen to call while they were out (Table 4.8). There was no relationship between parent age and requiring the teen to send a text or a picture while they were out (Table 4.9 and Table 4.10). All forms of TBPM decreased as teen age increased, with the exception of requiring a text (Tables 4.6-4.10). Being unmarried and living with a partner predicted higher levels of TBPM than being unmarried and living alone, while married parents reported the least advanced technology use for monitoring (Table 4.7). Marital status did not predict any of the other TBPM scores. Soliciting through calls and texts (Table 4.6) and the use of advanced technology in monitoring (Table 4.7) were significantly lower for participants who were unemployed. Soliciting through calls and texts (Table 4.6) and requiring the teen to call while they are out (Table 4.8) significantly increased as number of kids in house under 12 increased. Race was only significant for requiring the teen to call while they are out (Table 4.8): Black/ African American parents were the most likely to require their teen to call, followed by Asian parents, then White/Caucasian parents. Parents were less likely to require a call or text if the child they were reporting on was male (Table 4.8 and 4.9). Finally, parent’s trust in their teen predicted the use of advanced technology for monitoring as well as requiring the teen to send a picture (Tables 4.7 and 4.10). No differences in TBPM scores were found for parent gender or location (i.e., city, suburb or rural area).

Discussion
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This study described the development of a TBPM for parents of teens, as well as a number of exploratory findings based on that resulting measure. The following section will discuss the final factor structure, exploratory findings, as well as future directions for this research and limitations to our study.

The items for the TBPM scale were initially generated to fit two factors of Stattin and Kerr’s (2000) original scale: parental solicitation and parental control. The TBPM measure, on the other hand, was found to have 5 underlying factors. One subscale, solicitation through calls and texts, was associated with parental solicitation. Three subscales, Requiring Texts, Requiring Calls, and Requiring Pictures were associated with Parental Control. The literature has not shown a strong link between Parental Control and outcomes for teens (Hoeve et al., 2009; Stattin & Kerr, 2000). As such, it is not particularly surprising that three forms of TBPM related to Parental Control are actually distinctive from one another. The final subscale, Monitoring with Advanced Technology, comprised of items that were associated with both Parental Solicitation (e.g., Use video-calling, such as FaceTime, to ask what your teen is doing?) and Parental Control (e.g. Track your teen’s location using a GPS service such as "Find my Friends"). Using novel or advanced forms of technology may represent a form of parenting that diverges from these constructs. Whether this type of strategy is effective for preventing problem behaviors is not yet well understood.

Exploratory Findings

Age of Parent and Teen
While the TBPM measure still needs refinements, initial exploratory analyses reveal interesting findings that have implications for future research. The relationships between age (both parent and teen) and TBPM for the most part reflected traditional parental monitoring findings; higher age was associated with lower monitoring. As adolescents grow older, they generally have greater levels of independence, which results in parents having lower levels of parental knowledge (Frick, Christian, Wooton 1999; Laird, Pettit, Bates, & Dodge, 2003). In some cases, parental knowledge may decrease because adolescents engage in behaviors that negatively impact their relationship with their parent, and as a result the teen and their parent become more disconnected over time (Laird & Dodge, 2003).

It is interesting that requiring a text to “check in” did not significantly decrease with teen or parent age, nor did requiring a picture decrease with parent age. Perhaps this is a reflection of the ease of keeping in touch in these ways. Teens don’t necessarily have to disrupt what they are doing to stay in touch with their parents through text, as opposed to, for instance, calling their parent or sending a video. Future research is needed to explain when and why parents require texts from their older teens, and how texting habits changes across high school.

**Advanced Technology and Requesting Pictures**

Parents reported requiring their teen to send a picture relatively infrequently, with only 36% of respondents endorsing any of the three items on this subscale. Further research is needed to illustrate the characteristics of parents who employ this strategy and
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under what circumstances. These findings suggest two possibilities. First, that parents
who require pictures from their teens tend to report having a larger number of teens in
their household. Perhaps having more teens sets the parent up to learn more creative
strategies for monitoring through social interactions with their teens’ friends’ parents. Or
perhaps parents with multiple teens are more likely to recognize when teens aren’t being
forthcoming, and therefore, more likely to require “proof” of the teens’ activities and
whereabouts. Parents should be consulted in follow-up studies to investigate why living
with multiple teens might be related to requiring pictures. Second, parents who trust their
teens less, perhaps based on previous negative experiences, may be more likely to require
their teen to provide pictures to support where they are, what they’re doing, and who they
are with. Of the TBPM subscales, trust in the teen was associated with both requiring
pictures and using advanced technology for parental monitoring. In contrast, it was not
associated with the remaining three subscales. This may indicate that advanced
technology and requiring pictures are signs of intensive monitoring initiated in response
to some negative behavior or conflict between the teen and their parents (Crocetti et al.,
2016; Weisskirch, 2009). Future studies should investigate whether these intensive and
possibly sometimes intrusive parental monitoring strategies are implemented in response
to events such as teen conduct problems, or poor grades, and whether they are effective at
reducing the future occurrence of such problems.

Parent Employment
REPORTS OF BOTH SOLICITATION OF TEENS THROUGH CALLS AND TEXTS AND MONITORING WITH ADVANCED TECHNOLOGY BY PARENTS WERE LOWER AMONG PARTICIPANTS WHO WERE UNEMPLOYED. THE LIKELY INTERPRETATION OF THIS WOULD BE THAT PARENTS WHO ARE AT HOME MORE OFTEN ARE SPENDING MORE TIME DIRECTLY WITH THEIR TEENS AND ARE MORE “TUNED IN” TO WHAT THEY ARE UP TO. WHILE A GREAT DEAL OF RESEARCH HAS FOCUSED ON MATERNAL EMPLOYMENT AND ADOLESCENT PROBLEM BEHAVIORS (E.G., BIANCHI, 2000), LITTLE ATTENTION HAS BEEN PAID TO THE RELATIONSHIP BETWEEN EMPLOYMENT AND PARENTAL MONITORING. ONE STUDY, HOWEVER, FOUND THAT PARENTAL MONITORING MODERATED THE RELATIONSHIP BETWEEN MATERNAL EMPLOYMENT AND ADOLESCENT DELINQUENCY AND SEXUAL ACTIVITY, SUCH THAT MONITORING COMPENSATED FOR THE MOTHER’S PHYSICAL ABSENCE (JACOBSON & CROCKETT, 2000). FINDINGS FROM THIS STUDY BUILD ON THOSE FINDINGS, INDICATING THAT EMPLOYED PARENTS MAY MAKE A MORE CONCERTED EFFORT TO FIND NOVEL FORMS OF PARENTAL MONITORING. EMPLOYED PARENTS WERE SIMILAR TO NON-EMPLOYED PARENTS ON THE THREE REMAINING SUBSCALES: REQUIRING CALLS, REQUIRING TEXTS, AND REQUIRING PICTURES. EACH OF THESE SUBSCALES IS ASSOCIATED WITH PARENTAL CONTROL IN THE ORIGINAL PARENTAL MONITORING MEASURE (STATTIN & KERR, 2000), WHICH RESEARCH SUGGESTS IS LESS EFFECTIVE IN PREVENTING ADOLESCENT DELINQUENCY THAN PARENTAL SOLICITATION (HOEVE ET AL., 2009; REKKER, KEIJSERS, BRANJE, KOOT, & MEEUS, 2017).

**Parent Gender and Household Structure**

Evidence also suggests that family factors are related to parental monitoring (DEMUTH & BROWN, 2001; DISHION & MCMAHON, 1998; HOFFMAN, 1984). In the present study, no relationship was found between caregiver gender and any of the outcome
variables. In another study, fathers’ parental knowledge was found to be dependent on other factors, such as the number of hours they worked and the gender of their child (Crouter, Helms-Erikson, Updegraff, & McHale, 1999). More research is needed to establish the effects of gender on TBPM, as well as the effects of gender on parental solicitation, control, and knowledge in general. Parents’ marital status predicted advanced technology use for monitoring, such that married parents reported the least advanced technology, and unmarried parents living with a partner reported the most frequent advanced technology use, higher than parents who were single. A Routine Activities Theory framework (Cohen & Felson, 1979) would suggest that parents change their behaviors based on factors that they encounter in their day to day lives (e.g., their interactions with family and other members of their household). A plausible explanation is that parents who live with but are not married to their partner live in less stable households (Florshein, Tolan, & Gorman-Smith, 1998). It is also possible that these parents are spending time nurturing romantic relationships, but not necessarily depending on their partners for help parenting their children.

Another finding related to family-level factors indicated that the number of children under 12 years of age living in the house was positively related to solicitation through calls and texts and requiring the teen to call while they were out. Parental solicitation through calls and texts and requiring phone calls may occur more often by parents of teens with younger children in the household because the younger child(ren) require more intensive monitoring (Dishion & McMahon, 1998; Racz et al., 2017), and
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the parent is calling or texting to check up on all of their children at once. Parents may also be engaging in more monitoring strategies because the teen is taking care of the younger child(ren), or the younger children may not have their own phones.

Race and Culture

To examine racial/cultural variations in TBPM, parents’ race and location were analyzed. Racial differences in TBPM were examined because some studies have found racial differences in technology use and in parenting practices (Hargittai, 2010; Jackson, Ervin, Gardner, & Schmitt, 2001). A larger number of studies, however, have failed to find a relationship between racial or ethnic factors and parental monitoring (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Ramirez et al., 2004). The only finding related to race that was significant in the present study was for requiring a phone call. In this case, Black/ African American parents reported requiring calls the most, followed by Asian parents, and then White or Caucasian parents. It is important to note in interpreting this finding that only 21 participants actually identified as Black in this sample. These 21 MTurk participants are likely not representative of the larger population. Future research is needed to clarify whether these findings replicate and, if so, what underlying cultural factors drive these differences (Sampson & Lauritsen, 1997). In these analyses, the location of respondents (i.e., city, suburb, or country) was not a significant predictor of TBPM. While it is possible that parents in rural areas may not need to rely as heavily on parental monitoring strategies as parents in Urban areas, not enough research has been
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done on rural youth to establish differences based on residential location (Lippold, Greenberg, & Collins, 2013). Additional research in this area is warranted.

**Teen Gender**

Previous studies examining differences in parental monitoring based on teen gender have yielded mixed findings (Crouter et al., 1990; Dornbush, Erickson, Laird, & Wong; Jacobson & Crockett, 2000). For TBPM, respondents reported requiring calls and texts more often if the teen they were reporting on was female. This result is consistent with findings from a longitudinal study by Laird et al. (2003) which found that parental knowledge for male teens decreased throughout high school, but for female teens it stayed the same. This differential treatment of male and female teens is discordant with the body of research that finds boys tend to engage in delinquent behaviors more often than girls (Federal Bureau of Investigation, 2004; Lahey et al., 2000). However, Stattin and Kerr (2000) found that girls’ tendency to disclose more to their parents than boys may also contribute to gender differences in parental knowledge over time. Future studies should focus more on the specific family processes involved in outcomes of interest and consider investigating a possible moderated relationship between teen gender and age (Jacobsen & Crockett, 2000; Keijsers, Branje, VanderValk, & Meeus, 2010; Laird et al., 2003).

**A Note on Effect Sizes**

The small effect sizes generated by the exploratory analyses should be considered. While a number of significant findings emerged, the predictors explained only two to
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seven percent (2%-7%) of the outcomes. Other authors have reported similar effect sizes and reported concerns that these variables may not have an actual impact on the quality of parental monitoring, as a result (Jacobson & Crockett, 2000; Laird et al., 2003). Additional studies that draw from larger samples and investigate mediation and moderation effects may help to explain more variance in reports of parental monitoring (Crouter, MacDermid, McHale, & Perry-Jenkins, 1990).

Future Research

Findings from this study point to a number of important directions for future research. Technology offers parents more opportunities to track their teen’s activities than ever before. Additional research is needed to determine the optimal level and combination of solicitation and control parents should engage in when it comes to calling, texting, tracking a teens phone, and connecting on social media. Adolescents value their privacy, and they are often more technologically savvy than their parents (George & Odgers, 2015). As such, they can be skilled at avoiding their parents’ solicitation and control attempts. For instance, by turning off their phone, disabling their GPS function, ignoring calls, or using privacy settings so they can avoid their parent checking up on them. Future research should investigate whether certain moderating factors (i.e., SES, personality traits) influence the degree to which adolescents find different levels of TBPM to be acceptable and which forms of monitoring they tolerate best.

There are also some steps that can be taken to obtain a more normal distribution of TBPM data in future investigations using the TBPM. Asking parents to consider a
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time frame of one week was chosen in this study in order to maximize accurate recall. Due to the low base-rate of behaviors, however, a longer time-frame of a month or more may be more informative. In the original scale, Stattin and Kerr (2000) used “and” in their question structure. For example, “do your parents demand that they know where you are in the evenings, who you are going to be with, and what you are going to do?” In this measure, questions were simplified in accordance with recommendations in the literature for survey item development (Groves et al., 2011). It is possible, however, that this may have contributed to lower base rate responses. More specific questions may have also resulted in missing the times that parents contacted their teens for general updates, rather than specific questions about what they are doing, where they are, and with whom they are spending time. Additional research is needed to clarify the balance between requests for more general updates, as opposed to these specific requests for information.

It will also be of value for future research to consider interventions around TBPM for parents of teens. Surprisingly few studies have investigated the role that parental monitoring plays in interventions for the prevention and treatment of child conduct problems (Racz & McMahon, 2011). Future research using a randomized control methodology could investigate how providing access to technology or training around the use of technology for parents enhances their feelings of parenting self-efficacy. Such an investigation could also explore related outcomes for teens, such as increases or decreases in delinquent behavior. It is notable that this study focuses on adolescents, because it is a developmental point in time at which a youth normatively begins to spend
more time away from their parents. At the same time, new forms of technology have recently become available for the parental monitoring. These new tools, however, have been primarily directed toward the monitoring of younger children. For example, Facebook recently released an app called “Messenger Kids” for children under 13 to communicate with their parents or other parent-approved friends or family member (Isaac & Singer, 2017). Whether the benefits of such technology outweigh potential risks to a child’s safety or social development is highly debated. In the future, a version of the TBPM should be developed and validated for parents of younger children and infants. In the mean-time, parents should use their best judgement to balance caution with innovation in their technology-based parenting practices.

Technology in parenting is likely to have certain positive outcomes as it gives parents the control to monitor their children when they can’t be physically present, but the use of technology may also have unknown consequences. The TBPM measure developed in this study offers an important direction in better understanding the impacts of technology use for parents of teens.

Limitations

While these exploratory analyses yielded a number of interesting findings, it is important to remember that they are very preliminary, and a number of limitations should be considered in interpreting them. In general, the TBPM measure has demonstrated limited validity thus far, but these problems can likely be overcome through refinements that will be discussed further below.
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As noted previously, a number of decisions were made about which participants to retain from the overall MTurk sample. It is possible that some legitimate responses were inadvertently excluded, which could potentially affect the generalizability of the sample. Despite this concern, retaining those participants could also have had a negative influence on the validity of the survey if these individuals’ answers were not provided truthfully or thoughtfully. This further necessitates the future validation of this survey in a non-MTurk sample of parents of teenagers.

Further, needing to keep this survey open for a relatively long period of time may have impacted the quality of study respondents. In general, MTurk batches are completed quickly (Goodman et al., 2013). In the case of this survey, 27 days were required to acquire an adequate number of responses. While the literature suggests that MTurk is an effective venue for collecting data from parents (Dworkin et al., 2016), this study suggests that parents of teenagers may not be a well-represented in MTurk. Further, the fact that the survey was available for an extended period of time with unfulfilled hits may have made it more vulnerable to bots, or to unmotivated or untruthful respondents trying to earn money quickly. At the very least, these findings reflect the necessity of including validation checks in future MTurk surveys.

There are also some aspects of the survey itself that may have influenced participant responses. While the intent was to keep the survey short, expert review led to the addition of items that resulted in a pool of thirty-two items, plus demographics. The length of the survey may have led to survey fatigue in some participants, which could
have affected the quality of responses. Further, social desirability may be a concern with the measure. Even though this survey assesses specific parenting behaviors and not parenting in general, and the items were not highly endorsed, parents may have felt compelled to positively endorse certain items. The online nature of this survey, however, should have encouraged honest responses, compared to surveys taken in-person (Kays, Gathercoal, & Buhrow, 2012). A final limitation inherent in the MTurk sample is the low pay. In paying only $.60 for survey responses, busy parents who are higher earners were probably unlikely to take the survey, or to be MTurk respondents at all (Paolacci, et al., 2010).

Some other limitations related to the validity of the TBPM measure exist, as well. The initial survey questions were generated based on qualitative data that was not collected firsthand. Qualitative findings are not generalizable, and as such, despite a thorough literature and expert review, it is still possible that the TBPM measure may not adequately reflect all of parents’ technology-based monitoring behaviors. In order to maximize content validity in the future, input is needed from a range of respondents in the sample population through focus groups and wider pilot testing. Another limitation may be the fact that sample participants came from a variety of countries and cultures. Parental monitoring is known to be highly associated with cultural factors (Ho, Bluestein, & Jenkins, 2008). Limiting the sample to North America may have generated a more homogenous sample that also might have contributed to a better final survey model. Further, parenting trends are known to change over times and between generations.
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(Zervides & Knowles, 2007). Parents’ use and understanding of technology is also highly likely to change across time, as youth who grew up with certain technologies become parents themselves, and technology becomes more easily accessible (Dworkin, Connell, & Doty, 2013). For these reasons, the validity of the TBPM measure should be re-assessed over time. It will also be useful to also develop a measure that looks at parents’ perceptions of how they engage with new technology to monitor their children. For instance, this could be done by asking the extent to which they learn or seek out new technologies for the purpose of monitoring their teens.

The TBPM scale was intended to measure teens’ offline behavior. In expert review, however, numerous suggestions were provided to add two items: one item regarding checking the teens browsing history, and another item on finding out the teen’s passwords. These items were retained because it is conceivable that parents would check their teen’s online activities in an effort to understand their offline activities. What a teen does on their phone, computer or tablet is not independent from what they do in real life. Often, what teens do in real life is enmeshed with their activities online (Hildebrandt & Couros, 2016). Having parents generate more items for the measure about tracking the youth’s online behaviors should also be considered in future work in this area.

Despite these limitations, study findings point to a number of interesting directions for future research on parental monitoring. While there is a large body of research on parental knowledge and outcomes for youth, little is known about the methods that parents use to obtain such knowledge (i.e., solicitation and control; Racz &
PREVENTION THROUGH PARENTAL MONITORING

McMahon, 2011). These findings should be generalized with caution. However, they help to form an initial picture of how parents today use technology to monitor teens.
Table 4.1 Participant Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age of respondent</strong></td>
<td></td>
<td></td>
<td><strong>Relationship Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34 years old</td>
<td>43</td>
<td>(21.5%)</td>
<td>Married</td>
<td>157</td>
<td>(78.5%)</td>
</tr>
<tr>
<td>35 – 44 years old</td>
<td>102</td>
<td>(51.0%)</td>
<td>Not married, living with</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>partner</td>
<td>16</td>
<td>(8.0%)</td>
</tr>
<tr>
<td>45 – 54 years old</td>
<td>49</td>
<td>(24.5%)</td>
<td>Divorced</td>
<td>11</td>
<td>(5.5%)</td>
</tr>
<tr>
<td>55-64 years old</td>
<td>5</td>
<td>(2.5%)</td>
<td>Separated</td>
<td>1</td>
<td>(0.5%)</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>1</td>
<td>(0.5%)</td>
<td>Widowed</td>
<td>1</td>
<td>(0.5%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Never Married</td>
<td>11</td>
<td>(5.5%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prefer not to answer</td>
<td>3</td>
<td>(1.5%)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man</td>
<td>101</td>
<td>(50.5%)</td>
<td>Employed full time</td>
<td>157</td>
<td>(78.5%)</td>
</tr>
<tr>
<td>Woman</td>
<td>98</td>
<td>(49.0%)</td>
<td>Employed part time</td>
<td>27</td>
<td>(13.5%)</td>
</tr>
<tr>
<td>Non-Binary</td>
<td>1</td>
<td>(0.5%)</td>
<td>Employed full and part time</td>
<td>2</td>
<td>(1.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Unemployed looking for work</td>
<td>2</td>
<td>(1.0%)</td>
</tr>
<tr>
<td><strong>Sexual Orientation</strong></td>
<td></td>
<td></td>
<td>Unemployed not looking for work</td>
<td>10</td>
<td>(5.0%)</td>
</tr>
<tr>
<td>Straight</td>
<td>188</td>
<td>(94.0%)</td>
<td>Disability</td>
<td>2</td>
<td>(1.0%)</td>
</tr>
<tr>
<td>Gay or Lesbian</td>
<td>4</td>
<td>(2.0%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisexual</td>
<td></td>
<td>(3.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>1</td>
<td>(.50%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td><strong>Household Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>143</td>
<td>(71.5%)</td>
<td>Less than $10,000</td>
<td>12</td>
<td>(6.0%)</td>
</tr>
<tr>
<td>Black/African American</td>
<td>21</td>
<td>(10.5%)</td>
<td>$20,000 – $29,999</td>
<td>17</td>
<td>(8.5%)</td>
</tr>
<tr>
<td>Asian</td>
<td>29</td>
<td>(14.5%)</td>
<td>$30,000 – $39,999</td>
<td>16</td>
<td>(8.0%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2</td>
<td>(1.0%)</td>
<td>$40,000 – $49,999</td>
<td>26</td>
<td>(13.0%)</td>
</tr>
<tr>
<td>Native American</td>
<td>2</td>
<td>(1.0%)</td>
<td>$50,000 – $59,999</td>
<td>22</td>
<td>(11.0%)</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>(1.5%)</td>
<td>$60,000 – $69,999</td>
<td>14</td>
<td>(7.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$70,000 – $79,999</td>
<td>17</td>
<td>(8.5%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$80,000 – $89,999</td>
<td>16</td>
<td>(8.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$90,000 – $99,999</td>
<td>10</td>
<td>(5.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>More than $100,000</td>
<td>0</td>
<td>(0.0%)</td>
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<td>Prefer not to answer</td>
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<td>(6.0%)</td>
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<td>India</td>
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<tr>
<td>Bangladesh</td>
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<tr>
<td>Brazil</td>
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<td>(0.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominican Republic</td>
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<td>(0.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>1</td>
<td>(0.5%)</td>
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</tr>
<tr>
<td>Romania</td>
<td>1</td>
<td>(0.5%)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Location</strong></td>
<td></td>
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<td><strong>Country</strong></td>
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</tr>
<tr>
<td>City</td>
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<td></td>
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<tr>
<td>Suburb</td>
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<td>(45.5%)</td>
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<tr>
<td>Country</td>
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<td>(17.0%)</td>
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<td></td>
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</tr>
<tr>
<td>Prefer not to answer</td>
<td>1</td>
<td>(0.5%)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

N = 200
## Table 4.2: Means, Standard Deviations, Variance and Corrected Item-Total Correlations for the Preliminary Technology Based Parenting Measure

<table>
<thead>
<tr>
<th>Response Items</th>
<th>m</th>
<th>sd</th>
<th>σ^2</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinking about the past week, how often did you:**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Text your teen to ask <em>what they are doing?</em>**</td>
<td>1.72</td>
<td>1.25</td>
<td>1.57</td>
<td>0.64</td>
</tr>
<tr>
<td>Text your teen to ask <em>who they are with?</em></td>
<td>1.21</td>
<td>1.29</td>
<td>1.65</td>
<td>0.69</td>
</tr>
<tr>
<td>Text your teen to ask <em>where they are?</em></td>
<td>1.56</td>
<td>1.27</td>
<td>1.60</td>
<td>0.66</td>
</tr>
<tr>
<td>Call your teen to ask <em>what they are doing?</em></td>
<td>1.40</td>
<td>1.23</td>
<td>1.51</td>
<td>0.70</td>
</tr>
<tr>
<td>Call your teen to ask <em>who they are with?</em></td>
<td>1.02</td>
<td>1.19</td>
<td>1.42</td>
<td>0.69</td>
</tr>
<tr>
<td>Call your teen to ask <em>where they are?</em></td>
<td>1.25</td>
<td>1.15</td>
<td>1.33</td>
<td>0.69</td>
</tr>
<tr>
<td>Use <em>video-calling (such as FaceTime)</em> to ask what your teen is doing?****</td>
<td>0.49</td>
<td>0.92</td>
<td>0.85</td>
<td>0.65</td>
</tr>
<tr>
<td>Use <em>video-calling (such as FaceTime)</em> to ask who your teen is with?</td>
<td>0.42</td>
<td>0.85</td>
<td>0.72</td>
<td>0.66</td>
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<tr>
<td>Use <em>video-calling (such as FaceTime)</em> to ask where your teen is?</td>
<td>0.41</td>
<td>0.84</td>
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<td>0.65</td>
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<tr>
<td>Look at your teen’s social media such as Facebook, Instagram, Twitter, Snapchat, etc.?</td>
<td>1.06</td>
<td>1.22</td>
<td>1.48</td>
<td>0.60</td>
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<tr>
<td>“Like,” comment, or post on your teen’s social media?</td>
<td>0.83</td>
<td>1.14</td>
<td>1.29</td>
<td>0.59</td>
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<tr>
<td>Start a conversation with your teen about something you saw them doing through social media?</td>
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<td>0.99</td>
<td>0.99</td>
<td>0.64</td>
</tr>
<tr>
<td>Track your teen’s location using a GPS service such as &quot;Find my Friends&quot;?</td>
<td>0.60</td>
<td>1.06</td>
<td>1.11</td>
<td>0.46</td>
</tr>
<tr>
<td>Remind your teen about the rules for keeping in touch while they are out?</td>
<td>1.37</td>
<td>1.22</td>
<td>1.48</td>
<td>0.61</td>
</tr>
<tr>
<td>Check your teen’s browsing history to find out what they are up to?</td>
<td>0.69</td>
<td>1.02</td>
<td>1.03</td>
<td>0.55</td>
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<td>Check in on your teen using video surveillance (CCTV)?</td>
<td>0.26</td>
<td>0.75</td>
<td>0.56</td>
<td>0.39</td>
</tr>
</tbody>
</table>

*Responses were recorded on a 5-point Likert scale and response options vary by item
**Participants were randomly assigned to respond about either their oldest or youngest teen if they had more than one
***Responses are partially displayed in italics to improve readability
****Responses that were retained in the final measure are bolded
**Prevention Through Parental Monitoring**

Table 4.2 Continued Means, Standard Deviations, Variance and Corrected Item-Total Correlations for the Preliminary Technology Based Parenting Measure*

<table>
<thead>
<tr>
<th>Response Items (continued)</th>
<th>m</th>
<th>sd</th>
<th>σ²</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you require your teen to:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Text you when they are out to let you know <em>what they are doing</em>?</td>
<td>2.25</td>
<td>1.44</td>
<td>2.06</td>
<td>0.54</td>
</tr>
<tr>
<td>Text you when they are out to let you know <em>who they are with</em>?</td>
<td>2.10</td>
<td>1.43</td>
<td>2.04</td>
<td>0.55</td>
</tr>
<tr>
<td>Text you when they are out to let you know <em>where they are</em>?</td>
<td>2.50</td>
<td>1.40</td>
<td>1.95</td>
<td>0.47</td>
</tr>
<tr>
<td>Call you when they are out to let you know <em>what they are doing</em>?</td>
<td>1.79</td>
<td>1.32</td>
<td>1.74</td>
<td>0.57</td>
</tr>
<tr>
<td>Call you when they are out to let you know <em>who they are with</em>?</td>
<td>1.74</td>
<td>1.35</td>
<td>1.82</td>
<td>0.62</td>
</tr>
<tr>
<td>Call you when they are out to let you know <em>where they are</em>?</td>
<td>1.90</td>
<td>1.36</td>
<td>1.85</td>
<td>0.58</td>
</tr>
<tr>
<td>Send you pictures when they are out to show you <em>what they are doing</em>?</td>
<td>0.56</td>
<td>0.91</td>
<td>0.83</td>
<td>0.69</td>
</tr>
<tr>
<td>Send you pictures when they are out to show you <em>who they are with</em>?</td>
<td>0.51</td>
<td>0.90</td>
<td>0.80</td>
<td>0.68</td>
</tr>
<tr>
<td>Send you pictures when they are out to show you <em>where they are</em>?</td>
<td>0.58</td>
<td>1.00</td>
<td>1.00</td>
<td>0.68</td>
</tr>
<tr>
<td>Video-call you (for example, through FaceTime) when they are out to show you <em>what they are doing</em>?</td>
<td>0.49</td>
<td>0.98</td>
<td>.90</td>
<td>0.67</td>
</tr>
<tr>
<td>Video-call you (for example, through FaceTime) when they are out to show you <em>who they are with</em>?</td>
<td>0.43</td>
<td>0.89</td>
<td>.80</td>
<td>0.68</td>
</tr>
<tr>
<td>Video-call you (for example, through FaceTime) when they are out to show you <em>where they are</em>?</td>
<td>0.48</td>
<td>0.97</td>
<td>.93</td>
<td>0.65</td>
</tr>
<tr>
<td>Tell you the passwords to their cellphone, computer, or social media accounts?</td>
<td>2.67</td>
<td>1.37</td>
<td>2.45</td>
<td>0.29</td>
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<tr>
<td>Do you have a talk with your teen if they do not follow the rules for keeping in touch while they are out?</td>
<td>2.42</td>
<td>1.38</td>
<td>1.87</td>
<td>0.28</td>
</tr>
<tr>
<td>Do you discipline your teen if they do not follow the rules for keeping in touch while they are out?</td>
<td>0.60</td>
<td>1.57</td>
<td>1.90</td>
<td>0.30</td>
</tr>
</tbody>
</table>

*Responses were recorded on a 5-point Likert scale and response options vary by item**

**Participants were randomly assigned to respond about either their oldest or youngest teen if they had more than one***

***Responses are partially displayed in italics to improve readability****

****Responses that were retained in the final measure are bolded
## Table 4.3 Technology Based Parental Monitoring Factor Loadings

<table>
<thead>
<tr>
<th>Item</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text your teen to ask <strong>what they are doing</strong>?</td>
<td>.74</td>
<td>.22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Text your teen to ask <strong>who they are with</strong>?</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Text your teen to ask <strong>where they are</strong>?</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call you when they are out to let you know <strong>what they are doing</strong>?</td>
<td>.25</td>
<td>.69</td>
<td>.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call your teen to ask <strong>who they are with</strong>?</td>
<td>.20</td>
<td>.72</td>
<td>.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call your teen to ask <strong>where they are</strong>?</td>
<td>.22</td>
<td>.76</td>
<td>.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use <strong>video-calling</strong> (such as FaceTime) to ask <strong>what your teen is doing</strong>?</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use <strong>video-calling</strong> (such as FaceTime) to ask <strong>who your teen is with</strong>?</td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use <strong>video-calling</strong> (such as FaceTime) to ask where <strong>your teen is</strong>?</td>
<td>.71</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>“Like,” comment, or post on your teen’s social media?</td>
<td>.37</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start a conversation with your teen about something you saw them doing through social media?</td>
<td>.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Track your teen's location using a GPS service such as &quot;Find my Friends&quot;?</td>
<td>.46</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Check your teen's browsing history to find out what they are up to?</td>
<td>.47</td>
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<tr>
<td><strong>Require video-call</strong> you when they are out to show you <strong>what they are doing</strong>?</td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Require video-call</strong> you when they are out to show <strong>who they are with</strong>?</td>
<td>.86</td>
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<tr>
<td><strong>Require video-call</strong> when they are out to show <strong>where they are</strong>?</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Require text</strong> you when they are out to let you know <strong>what they are doing</strong>?</td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Require text</strong> you when they are out to let you know <strong>who they are with</strong>?</td>
<td>.84</td>
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</tr>
<tr>
<td><strong>Require text</strong> you when they are out to let you know <strong>where they are</strong>?</td>
<td>.89</td>
<td></td>
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<tr>
<td><strong>Require call</strong> you when they are out to let you know <strong>what they are doing</strong>?</td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Require call</strong> you when they are out to let you know <strong>who they are with</strong>?</td>
<td>.87</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Require call</strong> you when they are out to let you know <strong>where they are</strong>?</td>
<td>.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Require pictures</strong> when they are out to show <strong>you what they are doing</strong>?</td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Require pictures</strong> when they are out to show <strong>who they are with</strong>?</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Require pictures</strong> when they are out to show <strong>you where they are</strong>?</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Factor loadings above |.2| are displayed, those above |.3| are bolded*
Table 4.4 Technology Based Parental Monitoring Correlation Matrix

| Item                  | Text doing | Text doing | Text doing | Call doing | Call doing | Call doing | Video call doing | Video call doing | Video call doing | Video call doing | Video call doing | Like social media | Convos social media | Track GPS | Check browser |
|-----------------------|------------|------------|------------|------------|------------|------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-----------|--------------|
| Solicitation through Call or Text |            |            |            |            |            |            |                  |                  |                  |                  |                  |                  |                   |                   |           |              |
| Text doing            | 1.00       |            |            |            |            |            |                  |                  |                  |                  |                  |                  |                   |                   |           |              |
| Text with             | .77        | 1.00       |            |            |            |            |                  |                  |                  |                  |                  |                  |                   |                   |           |              |
| Text where            | .78        | .82        | 1.00       |            |            |            |                  |                  |                  |                  |                  |                  |                   |                   |           |              |
| Call doing            | .63        | .69        | .66        | 1.00       |            |            |                  |                  |                  |                  |                  |                  |                   |                   |           |              |
| Call with             | .59        | .72        | .69        | .80        | 1.00       |            |                  |                  |                  |                  |                  |                  |                   |                   |           |              |
| Call where            | .62        | .69        | .74        | .82        | .84        | 1.00       |                  |                  |                  |                  |                  |                  |                   |                   |           |              |
| Advanced Tech Monitoring |            |            |            |            |            |            |                  |                  |                  |                  |                  |                  |                   |                   |           |              |
| Video-call doing      | .39        | .49        | .46        | .59        | .59        | .55        | 1.00             |                  |                  |                  |                  |                  |                   |                   |           |              |
| Video-call with       | .35        | .50        | .42        | .51        | .52        | .49        | .84              | 1.00             |                  |                  |                  |                  |                   |                   |           |              |
| Video-call where      | .66        | .48        | .40        | .53        | .52        | .53        | .82              | .83              | 1.00             |                  |                  |                  |                   |                   |           |              |
| Like social media     | .39        | .46        | .41        | .41        | .44        | .40        | .46              | .51              | .50              | 1.00             |                  |                  |                   |                   |           |              |
| Conversation social media | .39       | .48        | .45        | .54        | .51        | .48        | .60              | .57              | .55              | .62              | 1.00             |                  |                   |                   |           |              |
| Track GPS             | .25        | .25        | .26        | .29        | .28        | .26        | .39              | .45              | .41              | .33              | .39              | 1.00             |                   |                   |           |              |
| Check browser         | .28        | .35        | .25        | .31        | .34        | .30        | .42              | .49              | .40              | .41              | .49              | .52              | 1.00             |                   |           |              |

*Correlations .5 and above are highlighted*
Table 4.4 (Continued) Technology Based Parental Monitoring Correlation Matrix

<table>
<thead>
<tr>
<th>Item</th>
<th>Req video call doing</th>
<th>Req video call with</th>
<th>Req video call where</th>
<th>Req text call doing</th>
<th>Req text call with</th>
<th>Req text call where</th>
<th>Req call call doing</th>
<th>Req call call with</th>
<th>Req call call where</th>
<th>Req pic call doing</th>
<th>Req pic call with</th>
<th>Req pic call where</th>
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<td>Require video-call doing</td>
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*Correlations above .5 are highlighted*
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<td><strong>Employment Status:</strong> Overall Model</td>
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<tr>
<td>Employed part time</td>
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<td>.04</td>
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<td><strong>Location:</strong> Overall Model</td>
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<td>-.53</td>
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<tr>
<td><strong>Number of teens in house:</strong> Overall Model</td>
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<tr>
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<td><strong>Age of teen:</strong> Overall Model</td>
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<tr>
<td>Age of Teen</td>
<td>-3.03</td>
<td>.00**</td>
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<td><strong>Gender of teen:</strong> Overall Model</td>
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<td>Trust</td>
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* Significant at the .05 level, ** Significant at the .01 level
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CHAPTER V. CONCLUSION

In previous three chapters, I presented three studies on the prevention of Child Sexual Abuse and juvenile offending through parental monitoring. While monitoring has long been believed to act as one of the most important protections against youth crimes and victimization, not a great deal of research actually exists to support these claims (Kaufman et al., 2012; Leclerc, Smallbone, & Wortley, 2013; Racz & McMahon, 2011). These studies make important contributions to the literature, as they provide more detailed information about parents’ monitoring efforts, and where these efforts might fall short. Larger studies are needed to determine who, what, when, and where monitoring works, and what other forms of prevention compliment monitoring the best. For instance, when it comes to CSA, research should look at the joint effort of about monitoring, developmentally appropriate sex education, and cultural norms around non-consensual touching (Fine, & McClelland, 2006; Kenny & McEachern, 2000). In the following sections, I will provide a brief summary of each study’s findings.

Chapter II Overview:
Investigating the relationship between supervisor status and the modus operandi of juvenile sexual offenders

Chapter II examined how routine activities contribute to a JSO being placed in a supervisory role over their victim, as well as how the use of MO strategies differs between offenders who supervise their victims and those who don’t. This study filled an important gap in the literature, as subgroup differences between groups of JSOs in their typical grooming patterns are not well understood (Kaufman & Patterson, 2010; Kaufman
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e et al., 1996; Kaufman et al, 1998). In the first part of this study, I investigated how perpetrators’ efforts to get the child alone, parents’ need for child care assistance, and parental disruptors to supervision contribute to the prediction of which juveniles become a supervisor to a child. In the second part of the study, I investigated whether acting as a supervisor was related to the use of fewer MO strategies for JSOs. I anticipated that JSOs who acted as supervisors would resemble adults in that they would rely less on the use of MO strategies, and more on their innate authority to abuse their victims (Kaufman et al, 1996). JSO characteristics, victim characteristics, and disruptions in victims’ parents’ lives were examined as possible moderators. This study provided evidence that routine activities contribute to JSOs being placed in supervisory roles, and it also provides evidence, contrary to the original hypothesis, that supervisory roles may provide JSOs with the opportunity to engage in more MO strategies compared to non-offenders.

Having examined these behaviors in a sample of JSOs, I next investigated whether differences exist between parental monitoring provided by JSO’s own caregivers, and parental monitoring provided by caregivers of JDs and JCs.

Chapter III Overview:

Preventing juvenile sexual offending through parental monitoring:
A comparison study of youths’ experiences with supervision

Chapter III (Stewart, Sitney, Kaufman, DeStefano, & Bui, 2019) investigated how facets of parental monitoring influence juvenile offending. It was hypothesized that both Juvenile Sexual Offenders (JSOs) and Juvenile Delinquent (JD) offenders (i.e., those not
charged with a sexual crime) would report that they were supervised less well than non-incarcerated Juvenile Controls (JCs), and that their caregiver would be less likely to be home while they were. It was also hypothesized that JSOs and JDs would report less parental knowledge, less parental solicitation, and less parental control compared to JCs. These findings were supported, although for certain items, JSOs actually reported higher parental knowledge, higher parental solicitation, and higher parental control compared than JDs. This is consistent with Seto and Lalumiere’s (2010) “specialised” explanation of juvenile sexual offender perpetration, such that JSOs may demonstrate less anti-social behaviour compared to JDs, and their parents are adjusting their parenting behaviors accordingly. These findings indicate, as in chapter II, that a relationship between parental monitoring and juvenile sexual offending exists and warrants further research.

Chapter IV Overview: Proposed Dissertation Study
The development a measure of technology based parental monitoring for parents of adolescents

The first study (chapter II) demonstrated that the parents’ routine activities are related to JSO supervisor status, which is in turn was related to JSO grooming patterns. The study that followed (chapter III; Stewart et al., 2019) provided evidence that differences in parental monitoring exist between parents of JSOs, JDs, and JCs. For the third study in this sequence, I developed the first quantitative measure of technology based parental monitoring. Since direct supervision by parents is not possible even in the best of circumstances (chapter II), and there is evidence of a relationship between
caregiving and juvenile offending (chapter III), it is important to thoroughly investigate which specific types of monitoring are most effective in various contexts (chapter IV). I drew from qualitative literature, expert review and consultation, and an existing quantitative measure of parental monitoring (Stattin & Kerr, 2000) to develop a measure that will provide insights into the role that technology plays in how parents communicate with their teens to monitor their behavior and ensure their safety from afar. Exploratory analyses revealed that subfactors of the TBPM were related to a number of teen and parent characteristics.

This study represents an important and much needed step to extend research in this important area of parental monitoring to promote child safety. Development of an assessment device in this area can help inform prevention and early intervention efforts in this area. Findings from chapter III indicate that many forms of guardianship behavior are not actually effective to protect their children (Stewart et al., 2019). Given the significant amount of time that adolescents spend away from their parents, there is an increasing need for their supervision to effectively incorporate monitoring technology to effectively bridge the physical divide and extend parents’ ability to maintain their children’s safety. The TBPM measure will help gather data that can be used to better understand how parents are engaging with technology to monitor their children in different contexts and to guide future directions to maximize parental supervision. This assessment device will make an important contribution to the literature, as there is not yet a quantitative measure of technology based parental monitoring, despite growing evidence that technology plays
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a critical role in parents monitoring efforts as their child grows older (Racz, Johnson, Bradshaw & Chen, 2017).

Summary

In summary, this dissertation consists of three manuscripts on the subject of parental monitoring and guardianship to prevent youth offending and victimization. I use survey methods as well as a scale development process to further this area of research. In the first paper, I used survey methods to investigate which routine activities contribute to JSOs being placed in supervisory roles, as well as how offender grooming patterns differ between JSO supervisors, and JSO’s who are not in supervisory roles. The second paper also used survey methods, this time to investigate differences in parental monitoring experienced by JSOs, JDs, and JCs. Finally, the third study involved the development of the first quantitative measure of technology based parental monitoring.

In addition to using a variety of methodologies, the studies in this dissertation focus on differing populations of interest, ranging from juvenile sexual offenders, to non-sexually offending juvenile delinquents, to parents of adolescents. Using a variety of methods and targeting these differing populations will help to more fully illustrate the phenomena of CSA and in turn contribute to more comprehensive prevention (Shen et al., 2011; Tamis-LeMonda, Briggs, McClowry, & Snow, 2008). For example, offender reports of subverting parental monitoring (chapter II) help inform parents and researchers where to target prevention efforts, and parents reports of their own monitoring efforts
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(chapter IV) help researchers identify the types of monitoring behaviors that parents engage in as well as which parents need to be targeted for interventions.

This dissertation makes an important contribution to the psychology and criminology literatures by providing much needed evidence about offender sub-group grooming strategies, and the effectiveness of parental monitoring and guardianship. Parental engagement in complex sets of strategies to protect their child from harm, and researchers are only beginning to understand what types of parental monitoring strategies are most effective. The availability of new technologies for parental monitoring of their children further complicates this issue, and a quantitative measure is needed to investigate how often parents use such technologies. In addition to making important contributions to the literature, the findings of this dissertation have practical implications for preventing CSA both in home and outside of the home, as well as offering directions for offender treatment (i.e., improving our understanding of JSO motivations and strategies for accessing potential victims).
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