The impact of the parent-adolescent relationship on risky internet behavior

Jefferey Lewis Sanders

Follow this and additional works at: https://scholarworks.lib.csusb.edu/etd-project

Part of the Psychology Commons

Recommended Citation
https://scholarworks.lib.csusb.edu/etd-project/3384

This Thesis is brought to you for free and open access by the John M. Pfau Library at CSUSB ScholarWorks. It has been accepted for inclusion in Theses Digitization Project by an authorized administrator of CSUSB ScholarWorks. For more information, please contact scholarworks@csusb.edu.
THE IMPACT OF THE PARENT-ADOLESCENT RELATIONSHIP ON RISKY INTERNET BEHAVIOR

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment of the Requirements for the Degree
Master of Arts in Psychology:
General-Experimental

by
Jefferey Lewis Sanders
September 2008
THE IMPACT OF THE PARENT-ADOLESCENT RELATIONSHIP ON RISKY INTERNET BEHAVIOR

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

by
Jefferey Lewis Sanders
September 2008

Approved by:

Dr. Laura Kamptner, Chair, Psychology

Dr. Eugene Wong

Dr. Joanna Worthley

8/20/08
ABSTRACT

The effects of mother attachment, adolescent peer relations, adolescent self-esteem, and parental monitoring on adolescent risky internet behavior were examined. One-hundred-seventeen adolescents (13 - 18 years of age) from a mid-sized southwestern public high school completed a questionnaire on the quality of their relationship with their mother, the quality of their relationships with peers, perceived loneliness, self-esteem, their parents' everyday monitoring behaviors, and their internet use. It was expected that: 1) adolescents who are securely attached will be less likely to engage in risky internet behavior (compared to insecurely attached adolescents), 2) adolescents who are more closely monitored by their parents will be less likely to engage in risky internet behavior, especially if they have a securely attached relationship with their parents, and 3) parental monitoring will have less of an impact on risky internet behavior than attachment security. Results showed support for all hypotheses. Findings are interpreted within the context of attachment theory, suggesting that adolescents who grow up with a secure attachment to their mothers have a higher self-esteem, more successful real-world peer relationships, and are more compliant to parental
monitoring, all protective factors regarding engaging in risky internet behaviors.
# TABLE OF CONTENTS

ABSTRACT ................................................................. iii

LIST OF TABLES ......................................................... vii

CHAPTER ONE: INTRODUCTION ..................................... 1
  Factors Contributing to Adolescents' Risky Internet Behavior ................. 8
    Risk-Taking and Egocentrism During Adolescence .............................. 8
    Self-Esteem ................................................................ 9
    Need for Social Contact ............................................... 13
    Anonymity .................................................................. 15
    A Lack of Internet Safety Education ......................................... 15
    Parenting Styles ....................................................... 17
    Summary and Purpose of the Study ........................................... 22

CHAPTER TWO: METHOD
  Participants ............................................................ 26
  Measures and Procedure ............................................... 26
    Mother-Adolescent Relationship ............................................. 26
    Peer Relationships ...................................................... 29
    Self-Esteem ................................................................ 30
    Parental Monitoring ..................................................... 31
    Internet Behavior ....................................................... 32
    Demographics ............................................................ 33
  Procedure ................................................................. 33
CHAPTER THREE: RESULTS

Mother Behavior and Adolescents Self-Esteem, Loneliness, and Internet Risk .................... 34

Parental Monitoring, Adolescent Internet Behavior, and Mother Behavior .................... 37

Impact of Mother Attachment versus Parental Monitoring of Risky Internet Behavior ........... 39

CHAPTER FOUR: DISCUSSION

Maternal Attachment and Risky Internet Behavior .................................................. 46

Parental Monitoring and Risky Internet Usage ..... 50

Limitations and Future Directions .................... 53

Summary and Conclusions .................... 54

APPENDIX A: INVENTORY OF PARENT AND PEER ATTACHMENT-REVISED - MOTHER ATTACHMENT SCALE ........................................ 56

APPENDIX B: PARENTAL BONDING INSTRUMENT .................... 58

APPENDIX C: LONELINESS SCALE .............................. 60

APPENDIX D: INVENTORY OF PARENT AND PEER ATTACHMENT-REVISED - PEER SCALE ........... 62

APPENDIX E: ROSENBERG SELF-ESTEEM SCALE ........................... 64

APPENDIX F: PARENTAL MONITORING SCALE ........................... 66

APPENDIX G: POLLY KLASS FOUNDATION SURVEY ........................... 69

APPENDIX H: DEMOGRAPHICS .............................. 72

REFERENCES ........................................... 74
LIST OF TABLES

Table 1. Definitions, Means, and Standard Deviations for Scales (N = 119) ............... 41

Table 2. Pearson Correlation Coefficients: Mother-Adolescent Relationship (Attachment, Care, and Overprotection) by Adolescent Variables (N = 117) ............... 42

Table 3. Pearson Correlation Coefficients: Adolescents’ Peer Relationships, Self-Esteem, and Loneliness by Risky Internet Behavior (N = 119) .................. 43

Table 4. Multiple Regression: Mother Attachment as a Predictor of Internet Risk (N = 116) ........ 43

Table 5. Correlation between Parental Monitoring, Mother-Adolescent Relationship, and Adolescent Risky Internet Use (N = 116) ...... 44

Table 6. Multiple Regression of Parental Monitoring on Internet Risk (N = 116) ........ 44

Table 7. Pearson Correlation Coefficients between Parental Monitoring x Internet Risk (High Attachment versus Low Attachment Groups) (N = 119) ...................... 45
CHAPTER ONE
INTRODUCTION

The internet has gained status as the fastest growing communication medium in the world. As a still rather new form of technology, there is much concern about the positives and negatives of using the internet, particularly by children (e.g., Berson, 2003; Berson & Berson, 2005; Ybarra & Mitchell, 2005). Ninety percent of children 12 to 18 years of age have access to the internet (Ybarra & Mitchell, 2005), and many are spending more unsupervised time on the internet than parents realize (Tarozzi & Bertolini, 2000). The purpose of the present study is to examine the relationship between early family relationship quality and adolescents seeking relationships on the internet (thereby putting themselves in a potentially risky situation).

Recent police investigations and media coverage on adolescents’ social internet behaviors, and increasing incidences of online fraud and sexual predators, has led to a need for increased awareness for adolescents and their risk of danger on the internet. The highly televised “To Catch a Predator” from Dateline on NBC has raised awareness immensely. In the three years since the show was
broadcast, Dateline had exposed over 250 online predators, with over 120 of those exposed being convicted. Furthermore, one recent newspaper article (The Sun, July, 2007) reported that Myspace.com, a popular social website for adolescents, had discovered 29,000 sex offenders on its website. One of those offenders was a Virginia man who pleaded guilty to kidnapping and soliciting a 14-year old girl he met from Myspace.com. In 2006, this individual (Andrew Lubarano, a 39-year-old man) was arrested for the fourth time after having sexual talks with adolescents from Myspace.com (Poulsen, 2006). Lubarano was found to be adding several adolescents to his friends list, one of which was a 14-year-old gay boy, posing as a 16-year-old on Myspace.com. Lubarano would call the boy his “sex toy” and tell him “Thanks for the ass, I mean add” (referring to the boy accepting Lubarano’s request to add the boy to his friends list). An undercover investigator, posing as a 14-year-old boy, found Lubarano asking this young teen “u into hair? Where do you have hair at?” In another related incident, a man from Long Island was arrested after he tracked down the work address of a 16-year-old girl from Myspace.com, luring her to a parking lot, and then sexually assaulting her (Williams, 2006).
While law enforcement is tightening their investigations of online predators and working to improve online safety for teens, detectives continue to inform families that places like Myspace.com are dangerous for children and adolescents (Poulsen, 2006). According to Poulsen (2006), places like Myspace.com are dangerous because law enforcement has a difficult time catching the more tricky/smart sexual predators, who make most of their contacts with children and adolescents through private (rather than public) messaging. Public comments posted to sexual predators' profiles by adolescents are often quickly deleted by the predator in order to delete any evidence.

Williams (2006) advises families that the best way for teens to stay clear of danger by online predators is to avoid posting any personally identifiable information online. This should also include online pictures (Fox 5 News, New York, 2007). A 2007 undercover story by Fox 5 News in New York discovered that a 23-year-old aspiring model, who posted his pictures on Myspace.com and similar websites to promote himself, had his online identity stolen by another young man pretending to be the 23-year-old. The "fake" stole the 23-year-old's pictures and created another Myspace.com profile and used the
pictures to set up dates with Myspace.com females. Fox 5 News set up a real-life date with the “fake” by posing as a Myspace.com interested female, but when the “fake” was confronted, he ran away from cameras and refused to be interviewed. While Fox 5 News profiled only this one man’s pictures and story about his identity being stolen, there is no doubt that fraud is occurring all over the internet.

While these dangers are real for adolescents who expose personal information about themselves, it should be acknowledged that the internet also brings benefits: It is a great place for children to access educational resources, complete homework assignments, and expand their growing minds. However, Berson and Berson (2005) found in their United States sample that 58.1% of children reported instant messaging as their most frequent online activity. Instant messaging is an online program that allows internet users to keep track of when their friends are online, and communicate by typing and sending/receiving messages to one another. Along with instant messaging, fifty-nine percent of children reported that they give out personal information through questionnaires posted online, and 23.1% reported sending pictures of themselves (through email or instant messaging) if requested by someone on the internet. Furthermore, in an online survey of girls
between the ages of 12-18 years who use the internet, only 1% reported that they used the internet primarily for creating websites, reading discussion boards, interacting at game sites, or for educational purposes (Berson & Berson, 2005). This suggests that children are engaging in activities on the internet different from the more traditional activities assumed by parents.

Research on children’s internet usage is still quite limited, with most studies focusing on parental awareness and children’s access to pornography, sex chat rooms, and other sexually available information on the internet. There is very little information on factors that may predispose children to seek out this material. As stated by Freeman-Longo (2000), while it is known that more and more children are engaging in online sexual activity (i.e., visiting adult websites), children are reluctant to directly admit that they engage in such activities or to explain why they do so. Because children are reluctant to admit what they do online, the details of their activities, perceived benefits of doing it, and how often they do it, we have few details and a limited understanding of the whole picture of children’s and adolescents’ internet use.
Over the years, techniques to prevent children from accessing sexual websites have been developed (e.g., verification websites and parental controls). Many parents have relied on these techniques to supervise their children’s internet experience. However, these techniques are not fail-safe. While most websites include an “18 or older” verification page, children can easily lie and surpass such verification (Freeman-Longo, 2000). Service providers such as AOL have parental controls that can prevent children from viewing websites that parents block; however, when parental controls are not activated children can have unlimited access. Furthermore, even with parental controls activated, Freeman-Longo (2000) found that many children have enough computer science knowledge or are creative enough that they are capable of overriding these controls. For example, Freeman-Longo (2000) shared the following story about a creative teen who did the following:

I had a case where a 16-year-old who had a history of phone sex (thousands of dollars) placed a camcorder, hidden, to record the combination of the safe, where his father kept the code to the computer. He got the code and got into porn sites. Talk about ingenuity. (p. 83)
Even more, just by typing the word "parental controls" into a search engine offers up websites that explain how to sneak past these software programs.

Berson and colleagues (2005) found in their survey of teenage girls (12-18 years-old) that less than nine percent reported any type of parental software being used on their computer, at least occasionally, while using the internet. So, even with the availability of this software, it appears that most parents aren’t using it. Berson and colleagues (2005) also found that as a child’s use of the internet increases, so too does their likelihood of engaging in risky behavior on the internet. Furthermore, they state that because children can use the internet anonymously, and because many children are unlikely to admit to their behavior, it is impossible to precisely ascertain how many children are engaging in risky behavior (e.g., experiencing sexual solicitation or an increased likelihood of experiencing sexual assault due to contacts made on the internet (Mitchell, Finkelhor, & Wolak, 2001).

Mitchell and colleagues (2001) surveyed 1501 adolescents (10-17 years old), of which 19% reported that they were targets of unwanted sexual solicitation on the internet. Sexual solicitations were more common for troubled adolescents, adolescent girls, and adolescents
who use the internet frequently and engage in online chatrooms. As stated by Berson (2003), "Although parents are the first line of defense in advocating for children online, the technological gap in knowledge across generations has left many young people accessible, vulnerable, and unprotected" (p. 10).

Research currently available on adolescent risky internet behavior focuses on monitoring and prevention through awareness; however, there are no studies using a theoretical framework to examine why some children at a developmentally young age are independently choosing to engage in risky behavior on the internet when unmonitored.

Factors Contributing to Adolescents’ Risky Internet Behavior

There are several possible factors that contribute to adolescents’ use of the internet in ways that would put them at greater risk. These factors include risk-taking and egocentrism, low self-esteem, the need for social contact, the anonymity that goes along with using the internet, lack of education regarding internet safety, and parenting styles.

Risk-Taking and Egocentrism During Adolescence

Adolescence is a stage during which individuals are more likely to engage in risky behavior (Elkind, 1967).
Adolescents typically think that they are special or unique, e.g., that things that happen to others won’t happen to them. This is known as the "personal fable" (Alberts, Elkind, & Ginsberg, 2007). The belief that they are somehow unique or invulnerable drives adolescents to take more risks compared to adults (Elkind, 1967). This may be part of the reason why while many adolescents are willing to share personal information about themselves while using the internet (e.g., their location, self pictures, or their phone number) without examining the possible risks for doing so (McKenna & Bargh, 2000). Additionally, the egocentrism that is typical of young adolescents (e.g., Elkind, 1967) is likely to cause the adolescent to feel that sharing their information is safe, and that a stranger requesting the adolescent’s information on the internet is doing so with the same harmless motives as the adolescent giving them the information.

Self-Esteem

Many adolescents use the internet as a way to boost their self-esteem (McKenna & Bargh, 2000). According to McKenna and Bargh (2000), “People have a need to present their true or inner self to the outside world and to have others know them as they know themselves” (p. 63). These
authors state that when an individual is unable to express their true self in their current relationships, they are likely to be motivated to seek out new relationships that allow such needs to be met. The internet allows individuals to develop a new individual identity, and is therefore an alternative way to test new identities and personalities (Turkle, 1995). For adolescents with a low self-esteem, however, this can lead to risky internet behavior. As stated by Berson (2003), adolescents are “naïve and trusting of others and simultaneously are in need of attention and affection...and at risk of having their safety compromised when their information is accessible to others interested in online and offline contact.” The internet provides adolescents the opportunity to present their ideal self and increase their self-esteem, but from this may come the formation of fantasies and separation from reality (McKenna & Bargh, 2000). When surrounded by individuals sharing similar interests who boost their self-esteem, the adolescent is unlikely to think of potential real-world dangers of sharing information, and when lacking real-world friends, may show interest in meeting one of their online friends in person. For sexual predators this is ideal, because for
them adolescents with a low self-esteem are easier targets (Berson, 2003).

Adolescents with a low self-esteem are also more likely to engage in role-playing on the internet (McKenna & Bargh, 2000). Role-playing can be dangerous because it is likely that those they talk to on the internet are role-playing as well (Freeman-Longo, 2000). Therefore, the internet may promote in adolescents an unrealistic view of people, relationships, and sex. Freeman-Longo explains that adolescents with a low self-esteem may feel an increase in self-esteem and gratification from the internet (based on distortion from reality). The positive feelings that the internet offers may cause adolescents who have difficulty forming relationships in the real world to seek continuing gratification from the fantasized reality that the internet can bring, which may then increase the adolescent’s desire to meet a person from the internet in real life.

Despite the fact that friend-networking sites are becoming more and more popular, Valkenburg et al. (2006) conducted one of the few studies to examine the effects of friend networking sites on the self-esteem of adolescents. Friend networking sites such as Myspace.com were developed as a way for people to maintain a close network of
friends. These friend network sites allow an individual to create a personal profile about themselves, which can include their biography, likes/dislikes, and pictures. Viewers who are invited or accepted as "friends" are allowed to leave personal and public messages on an individual's personal page, and can make public comments about the individual's pictures. Myspace.com is great for keeping in touch with real world contacts, individuals one might have lost contact with, or to develop new friends. Adolescents with a low self-esteem, however, are likely to use this site to gain new friends; and may have their self-esteem lowered even further if they are unsuccessful or receive negative feedback from others (Valkenburg, Peter, & Schouten, 2006).

For most adolescents, the internet is strictly for entertainment and to keep up with friends, while for others, it is more serious (e.g., Valkenburg, Peter, & Schouten, 2006). Valkenburg et al. (2006) examined the negative effect that social websites like Myspace.com can have on some adolescents, particularly in regard to self-esteem and well-being. They found that while the number of friends on these networking sites had no effect on self-esteem, visitors who posted negative comments did impact the self-esteem of some adolescents. For
adolescents with a low self-esteem, the response to the
“ideal self” created on the internet has a greater impact
because they are relying on the internet to counter the
rejections of the real world.

Need for Social Contact

Social interaction is the number one purpose for
internet use by adolescents at home (Kraut et al., 1998). For adolescents, internet socialization can be considered
harmless entertainment, while for some it is more
meaningful as it fulfills the need for self-worth and a
sense of belongingness (McKenna & Bargh, 2000). According
to McKenna and Bargh (2000), two types of motivations
drive people to socialize on the internet: “self-related”
or “socially related”. Self-related motivations are those
which drive people to engage in online socialization for
the sake of role-play. According to McKenna and Bargh
(2000), those with self-related motivations have a
“constrained identity,” which makes them more likely to
need to present their “self” to the world in a way that
they are incapable of doing in the real world due to a
fear of being ridiculed or teased. Those with
socially-related motivations, on the other hand, have a
high need to socialize but have social anxiety, which
makes it difficult for them to get their social needs met
in the real world and thus they turn to the internet for making social connections (McKenna & Bargh, 2000).

Website communities are becoming more and more popular, and they can meet the needs of people who have either social or self-related motivations for engaging in internet activity (McKenna & Bargh, 2000). Websites such as Yahoo!, Excite, and Geocities have, for example, many special interest groups (Napoli, 1998). According to Napoli (1998), Excite has developed over 8,000 website communities to date. For some adolescents, visiting these website communities can be potentially harmful and lead to risky behavior (Berson, 2003). Unlike the real world, there are very few social rules on the internet. Social rules are left to the hands of the website administrator, which means that if permitted, communities can allow individuals to insult others, use derogatory language, and engage in provocative conversations. According to Berson (2003), “Due to a perceived lack of consequences, stalking, death threats and other violent fantasies and behaviors have become more prevalent among young people online” (p. 15). Berson (2003) goes on to say that “since computer activities appear to be victimless and faceless crimes, the true repercussions may not be discernible in comparison to the potential benefits gained by a young
person” (p. 15). There is no doubt that unmonitored adolescents may be negatively influenced by engaging in or witnessing inappropriate behavior from these websites in which parents would never suspect.

**Anonymity**

According to McKenna and Bargh (2000), the anonymity of the internet “is much like being in a darkened room that one cannot see the other person, nor can one be seen” (p. 62). The secretive and safe feeling of anonymity which the internet provides, combined with the egocentric feeling of invincibility in adolescence, may encourage adolescents to share more personal information about themselves with someone they are talking to on the internet compared to what they would share if they were talking to someone they had just met in the real world.

**A Lack of Internet Safety Education**

Most adolescents and their parents lack information regarding internet safety (Freeman-Longo, 2000). When it is provided, however, it can be effective in helping prevent adolescents’ use of the internet in a risky manner. For example, Berson and Berson (2005) found that the likelihood of girls agreeing to meet with a stranger from the internet significantly decreased when having a discussion about internet safety with a teacher and/or a
parent. As with all prevention programs, adolescents need to be educated on the potential dangers, as well as what is acceptable and what is not acceptable when using the internet (Freeman-Longo, 2000). Parents cannot assume that children understand the illegality of child pornography or the downloading of illegal material, nor should they assume that children are aware of the problems associated with talking to strangers on the internet or sharing personal information (Freeman-Longo, 2000). One professional comments:

It is easy for teens to access sexual materials on the web, and it may not even have been planned. A simple spelling error or an innocent search for information can lead to entry into areas that are less than desirable. In reviewing our lab on a regular basis, it is amazing the number of times sites appear, and when you look at the reference you can tell that the student was looking for information other than what appeared. Some of these sites are difficult to break out of without shutting the machine completely down. (Freeman-Longo, 2000, p. 85)

Even though monitored internet access by parents is encouraged, it is difficult for a parent to monitor their adolescents’ every move on the internet. Therefore, it is
important that parents and/or teachers are educated on proper internet use and safety so that they can educate adolescents in order to enable teens to make educated decisions when surfing the internet alone.

**Parenting Styles**

In addition to the above, studies have identified several parenting factors contributing to adolescents' risky internet behavior: parental monitoring and parenting style/quality. Each of these is discussed below.

**Parental Monitoring.** Parental monitoring of adolescents' internet usage may impact whether adolescents engage in risky internet behavior. As previously stated, adolescents tend to spend a lot of time on the internet unsupervised (Freeman-Longo, 2000). Adolescents, however, do not have the knowledge, experience, and maturity to assess what is okay and what may be getting out of hand in regard to their personal lives or on the internet (e.g., sharing private information with new "friends" in internet chatrooms) (Freeman-Longo, 2000). When parents don't monitor adolescents' online activity, adolescents are more likely to engage in risky behavior on the internet. Berson and colleagues (2005), for example, surveyed teenage girls, and those who reported having parents who monitor their internet access on a regular basis did not engage in
cybersex (i.e., viewing or discussing sex on the internet). However, sixty percent of girls in the study who did use the internet unmonitored admitted to engaging in sexually explicit exchanges online with friends or strangers. Lack of parental monitoring has been described as neglectful parenting (Karavasilis, Doyle, & Markiewicz, 2003). According to Karavasilis and colleagues (2003), monitoring ensures that parents know what adolescents are doing, and limits are established. Without parents monitoring everyday activities, adolescents are less likely to feel a sense of security and stability from their parents, leading to lessened emotional stability (Karavasilis, Doyle, & Markiewicz, 2003). In turn, this may lead to greater likelihood of engaging in risky behavior (Costello, Anderson, & Stein, 2006). Parental monitoring of adolescents’ everyday activities is associated with a higher sense of security brought about by a secure attachment (Karavasilis, Doyle, & Markiewicz, 2003). Just as a mother maintaining close proximity develops in an infant the security needed to explore their environment (and grow to be independent adults), parental monitoring instills an inherent sense of security in that the adolescent feels comfort and security knowing that their parents are monitoring their actions and setting
healthy limits in the adolescents' life (e.g., Karavasilis et al., 2003).

A study by the Polly Klaas Foundation of 742 teenagers (ages 13-18) and 726 tweens (ages 8-12) found that 68% of teens and 20% of tweens reported that they frequently go online in their parents' absence. Furthermore, more than one in four (28%) of the adolescents who said they've been in chatrooms (53%) said that they use code words (e.g., "PIR" for "parent in room") daily to hide conversations from their parents. Occasional monitoring isn't enough, and many parents just aren't familiar enough with the growing technology of computers to know what their kids are doing, how they are doing it, or how to stop it (Freeman-Longo, 2000). What isn't clear in the research literature is how critical parental monitoring is in preventing risky internet behavior, particularly regarding other parenting behaviors (as described below).

Parenting Style and Quality of Family Relationships. The quality of family relationships may also impact whether adolescents engage in risky internet behavior. Family interaction patterns impact the factors discussed above (e.g., self-esteem, risky behavior, and social
interaction/development), which, in turn, may contribute to risky internet behaviors.

First, research has shown that parents who have a securely attached relationship with their children have children who have a higher self-esteem (Parker & Benson, 2004; Sroufe, 2005). According to Parker and Benson (2004), parent-child interaction styles affect a child's self-esteem because a child's view of herself is influenced by how the child perceives her parents' view of her. Children who grow up with warm, sensitively-attuned, responsive care (which leads to a secure attachment, e.g., Ainsworth et al., 1978; Bowlby, 1969; Bowlby, 1973, Bowlby, 1988) tend to have views of themselves as worthy of love and care by others. Conversely, if parents are unsupportive and unavailable, the adolescent is more likely to have a low self-esteem (Parker & Benson, 2004). Adolescents with a low self-esteem are more likely to engage in risky internet behavior because they lack the confidence to develop real-world relationships, and therefore are more likely to use the internet as their primary source for developing close/intimate relationships (McKenna & Bargh, 1999), which can put them at greater risk for being a target of online predators (Berson, 2003).
Secondly, the quality of an adolescents' family relationships can also affect social development (e.g., Karavasilis, Doyle, & Markiewicz, 2003; Sroufe, 2005). Adolescents who lack a secure attachment with their parents are denied the social and emotional capacities that promote social competence (Sroufe, 2005). Sroufe (2005) has found significant links between secure attachment and social competence from early childhood to adulthood; i.e., securely attached children are more actively involved in peer groups, they have more positive expectations about relationships, and they are less likely to be isolated (compared to children without a secure attachment). By contrast, children who lack a secure attachment have a particularly difficult time with complex relationships, including maintaining long-term friendships or friendships within a group (Sroufe, 2005). For insecurely attached adolescents, friendships with the opposite sex become especially difficult, and friendships that require leadership are often avoided. According to Sroufe (2005), children who lack a secure attachment are less likely to maintain dynamic relationships because they lack the emotional stability and security which a secure attachment to a parent brings. By contrast, adolescents who grow up with a secure attachment also grow up feeling
emotionally stable and secure, which transfers into the emotional confidence required to maintain the more complex and dynamic relationships that individuals tend to experience throughout adolescence and adulthood (Sroufe, 2005). Without emotional confidence, an adolescent is likely to have less meaningful relationships, which is why adolescents who lack a secure attachment are more likely to feel lonely than securely attached adolescents (Minzi, 2006). Moreover, adolescents who avoid friendships and choose to be alone tend to do so not because they enjoy being alone, but rather to avoid rejection (Minzi, 2006).

In sum, insecure attachments can leave adolescents with a lower self-esteem, poor social skills, and a sense of loneliness. These same characteristics have, in turn, been found by McKenna and Bargh (2000) and Berson (2003) to be traits of socially-related internet users (i.e., adolescents who seek out peers and intimate relationships online to fill the void of rejection from the real world). Therefore, the quality of adolescents' relationships with their parents (i.e., attachment security) may impact whether adolescents engage in risky internet behavior.

**Summary and Purpose of the Study**

In summary, studies suggest that adolescents with a poor self-esteem and poor social development (including
loneliness) are more at-risk for online predators. Also, studies of family relationship patterns indicate insecure parent-child relationships may result in lower self-esteem, compromised social development (including higher levels of loneliness), and poor communication skills. Therefore, adolescents with an insecure attachment to their parents could be at greater risk for engaging in risky online internet behavior. The primary purpose of the current study is to examine this link.

In addition, whereas studies have found that parents who monitor their adolescents' internet access have teens who are less likely to engage in risky internet behavior, it is unclear how influential parental monitoring is compared to the overall quality of the parent-adolescent (attachment) relationship. Parental monitoring may help when there is a high-quality relationship already established between the adolescent and his/her parent. Children who are securely attached are more compliant (Karavasilis, Doyle, & Markiewicz, 2003) and may therefore be more likely to adhere to parents' efforts to monitor their online behavior. This study will also examine this. Therefore, it is hypothesized that:

Hypothesis 1: Adolescents who are securely attached will be less likely to engage in risky internet usage
(compared to insecurely attached adolescents). Furthermore, securely attached adolescents will have higher self-esteem, more successful peer relationships, and lower levels of loneliness, which will make them less susceptible to engaging in risky internet behavior.

Hypothesis 2: Adolescents who are more closely monitored by their parents will be less likely to engage in risky internet behavior, especially if they have a securely attached relationship with their parents.

Hypothesis 3: Parental monitoring will have less of an impact on adolescent risky internet behavior than attachment security.

The information resulting from the present study is anticipated to add to our understanding of what puts some adolescents at risk more than others in the use of the internet. Having a clearer understanding of parents' roles in adolescents' internet use can help to inform our understanding of the implications of the quality of the parent-adolescent relationship for risky online behavior. Secondly, the present study seeks to increase awareness of how important it is for parents and teachers to help facilitate the development of adolescent's self-esteem and social skills to enable them to be capable of forming
healthy real-world relationships instead of turning to the internet as their primary source of socialization.
CHAPTER TWO

METHOD

Participants

Participants consisted of 119 adolescents enrolled in a high school in the High Desert region of southwestern California. The participants' ages ranged from 13-18 years, with a mean age of 15 years. Sixty percent of participants were boys; 40% were girls. Six percent of adolescents' fathers had less than a high school education, 36% had a high school education, and 58% had some college or greater. Participants were predominantly Anglo-American (64%); 20% were Hispanic, 9% African-American, 3% Asian, and 4% other. All participants received a free meal gift certificate from Del Taco for their participation.

Measures and Procedure

Adolescents completed a questionnaire comprised of the following measures: mother-adolescent relationship, peer relationships, self-esteem, parental monitoring, internet behavior, and demographic information.

Mother-Adolescent Relationship

Two scales were used to assess the mother-adolescent relationship. Only mothers were assessed since research
shows that mothers tend to play a significantly greater role in the everyday lives of children than fathers (Ainsworth, 1978; Bowlby, 1969; Sroufe, 2005).

First, the maternal attachment scale from the revised version of the Inventory of Parent and Peer Attachment (IPPA-R) (Gullone & Robinson, 2005) was used to assess adolescents' attachment to parents (Appendix A). Based on the original version of the Inventory of Parent and Peer Attachment (IPPA), the revised version assesses children aged 9-16 years by measuring the positive and negative affective and cognitive dimensions of adolescents' relationships with their parents. Based on Bowlby's theory of attachment, items comprised three factors: Trust, Communication, and Anger/Alienation (Gullone & Robinson, 2005). Items representing Trust assess the level of mutual trust, respect, and understanding between mother and adolescent (e.g., "I tell my mother about my problems and troubles"; "I trust my mother"). Items representing Communication assess an adolescent's degree of verbal communication with his/her mother (e.g., "I tell my mother about my problems and troubles"; "My mother understands me"). Finally, items representing Anger/Alienation assess an adolescent's anger towards his/her mother and how alienated and isolated he/she feels by their mother (e.g.,
“My mother doesn’t understand my problems”; “No one understands me”). For each of the 28 items, respondents indicated the degree to which each item was true for them on a five-point Likert scale (1 = Almost always or always true; 5 = Almost never or never true). Although the original version of the IPPA-R form refers to “parents,” wording was modified to address mothers only. The IPPA-R and its subscales have moderately good internal consistency when used with adolescents, with a Cronbach’s alpha of .85 for Trust, .79 for Communication, and .76 for Alienation (Gullone & Robinson, 2005).

Second, the Parental Bonding Instrument (PBI) (Parker, Tupling, & Brown, 1979) was also used to assess the quality of the mother-adolescent relationship (Appendix B). Each of the 25 items were rated on a four-point Likert scale (1 = ‘Very like my mother’; 4 = ‘Very unlike my mother’). The items comprised of two subscales: ‘Care’ and ‘Overprotection.’ Care items assess the perceived quality of nurturing care by their mother (e.g., “speak to me in a warm and friendly voice”; “can make me feel better when I’m upset”); Overprotection items assess adolescents’ perceived level of intrusiveness and over-controlling behavior of mother toward the adolescent (e.g., “invades my privacy” and “does not want me to grow
High test-retest reliability has been established, with a split-reliability of .88 for the Care scale and .74 for the Overprotection scale (Parker, Tupling, & Brown, 1979). Adequate validity has also been reported (Herz & Gullone, 1999).

Peer Relationships

Two scales were used to assess adolescents' social relationships.

First, the UCLA Loneliness Scale (Russell, 1996) was used to measure adolescents' perceived loneliness (Appendix C). The scale assessed how much an adolescent feels isolated by others, and how alone they feel. The scale contained 10 items to be answered on a five-point scale (1 = I always feel this way; 5 = I never feel this way.) Sample items included "How often do you feel unhappy doing so many things alone?" and "How often do you feel completely alone?" The UCLA Loneliness Scale is highly reliable, with high internal consistency (coefficient alpha ranging from .89 to .94) and test-retest reliability (r = .73) (Russell, 1996). The scale has been found to have high validity and appropriate for use with individuals 12-21 years of age (Mahon, Yarcheski, & Yarcheski, 1995).
Second, the peer scale of the Inventory of Parent and Peer Attachment (IPPA-R) (Gullone & Robinson, 2005) was used to assess adolescents' attachment to peers (Appendix D). Items representing Trust assess the level of mutual trust, respect, and understanding between the adolescent and their peers (e.g., “My friends can tell when I’m upset about something”; “My friends understand me”). Items representing Communication assess an adolescents’ degree of verbal communication with his/her peers (e.g., “I like to get my friends’ opinions on things I’m worried about”). Finally, items representing Anger/Alienation assess an adolescents’ anger towards their peers and how alienated and isolated they feel by their peers (e.g., “My friends don’t understand my problems”; “I wish I had different friends”). For each of the 28 items, respondents indicated the degree to which each item was true for them on a five-point Likert scale (1 = Almost always or always true; 5 = Almost never or never true).¹

Self-Esteem

The Rosenberg Self-Esteem Scale (Appendix E) is a 10-item scale measuring an individual’s global self-esteem

¹ The last five items were inadvertently left out on the final version of the questionnaire; the remaining 23 items were used for a total peer attachment score.
(i.e., self-worth and self-acceptance) (Rosenberg, 1969). Items are responded to on a 4-point Likert-type scale (1 = Strongly agree; 4 = Strongly disagree). Sample items include “On the whole, I am satisfied with myself,” and “At times I think I am no good at all”. The scale was originally developed for, and is acceptable for use by, both male and female adolescents (Rosenberg, 1965). The scale has a good internal consistency with a Cronbach alpha of .78 (McCreary et al., 1996).

Parental Monitoring

The Parental Monitoring scale (Stattin & Kerr, 2000) measures parents’ knowledge of their adolescent’s whereabouts, activities, and associations (Appendix F). The scale consists of 9 items on a 5-point Likert scale (1 = Always; 5 = Never). Sample items include “Do your parents know what you do during your free time?” and “Do your parents know when you have an exam or paper due at school?” The original scale has two versions: one for the adolescent to complete, and one for the parent to complete. Questions are the same for both the parent and adolescent, although wording is altered slightly for the parent version. Both versions were used in this study, and both versions have good validity and good internal
consistency (Cronbach’s alpha = .86 for adolescents and .89 for parents).²

Internet Behavior

To assess adolescents’ degree of risky internet behavior, 28 items from the Polly Klaas Foundation (http://www.pollyklaas.org/internet-safety) were used to assess teen and tween risk to predators on the internet (Appendix G). In general, items assessed how often adolescents use the internet and their online social experiences. Specifically, items assessed communication on the internet (e.g., “How often have you been asked personal questions through email, instant messaging or chatrooms?”), their experiences talking to strangers on the internet (e.g., “How often have you talked to someone on the internet you’ve never met?”), their experience sharing personal information on the internet (e.g., “How often have you created or updated an online profile for others to see or link to?”), and online supervision (e.g., “I’m frequently online when my parents aren’t around.”). These questions were originally created for, and are appropriate for use with adolescents up to age 17. Participants responded to items on a 5-point Likert scale (1 = 10 or

² Since response choices were misaligned on the final version of the mother scale, only the adolescent scale was used.
more times a day; 5 = never). For the current study, relevant items were summed (and reverse-scored) for an overall risky behavior score.

**Demographics**

A demographics form was also included, asking for participant’s age, gender, ethnicity, parents’ highest level of education, and parents’ current marital status. (Appendix H).

**Procedure**

Students completed the questionnaire at their high school, during their parent-teacher conference time.
CHAPTER THREE

RESULTS

Table 1 shows the definitions, mean scores, and standard deviations for each scale used in this study.

Mother Behavior and Adolescents Self-Esteem, Loneliness, and Internet Risk

The first hypothesis was that adolescents who are securely attached would be less likely to engage in risky internet behavior (compared to insecurely attached adolescents). Furthermore, securely attached adolescents were predicted to have a higher self-esteem, more successful peer relationships (including lower levels of loneliness) which would make them less susceptible to engaging in risky internet behavior.

To test this hypothesis, Pearson correlations were first computed between the mother-adolescent relationship variables and the adolescent measures (Table 2). Results showed that, as expected, mother attachment and care were negatively and significantly correlated with risky internet behavior, while overprotection (i.e., harshness, intrusiveness) was positively and significantly correlated with risky internet behavior ($p \leq .001$). Overall, these results indicate that mother-adolescent relationships that
are loving, nurturing, and affectionate are related to decreased risky internet behavior of adolescents. By contrast, mother-adolescent relationships characterized as harsh, authoritarian, and intrusive are related to more risky online behaviors of adolescents.

Next, the links between the mother-adolescent relationship variables and adolescents’ peer relationships and self-esteem were examined. Results on Table 2 show that, as expected, mother attachment and care were positively and significantly correlated with attachment to peers and self-esteem ($p \leq .001$), and negatively and significantly correlated with loneliness ($p \leq .001$). Mother overprotection was negatively and significantly correlated attachment to peers ($p \leq .05$) and self-esteem ($p \leq .001$). Thus, mother-adolescent relations characterized as securely attached, loving, and nurturing are linked with a higher self-esteem, close and successful peer relationships, and less loneliness. By contrast, when an adolescent feels his/her mother is harsh and intrusive, he/she is more likely to have a low self-esteem, poor peer relationships, and to feel lonely.

Next, the relationship between adolescents’ peer relationships, self-esteem, levels of loneliness, and risky internet behavior were examined. Results on Table 3
shows that, as expected, loneliness (p ≤ .001) was positively and significantly correlated with adolescents' risky internet behavior, while peer attachment and self-esteem (p ≤ .001) were both negatively and significantly correlated with adolescents' risky internet behavior. These findings suggest that, consistent with previous research, adolescent loneliness, poor self-esteem, and poor peer relations are linked with risky online behavior.

Next, to test whether mother attachment, self-esteem, quality of peer relations, and loneliness predicts risky internet behavior, a hierarchical multiple regression was performed. Prior to analysis, multicollinearity between variables was examined using SPSS collinearity diagnostics. Peer attachment, self-esteem and loneliness each had variance proportions greater than .50 on a dimension with mother attachment. Therefore, peer attachment, self-esteem and loneliness were removed from analysis, leaving mother attachment as the independent variable and internet risk as the dependent variable. Table 4 displays the Pearson correlation (R) between mother attachment and internet risk, the unstandardized regression coefficient (B) and intercept, the standardized regression coefficient (β), R², and adjusted R². R for
regression was significantly different from zero, 
\[ F(1, 116) = 112.03, \ p < .001. \] The adjusted \( R^2 \) value of .49 indicates that nearly half of the variability in internet risk is predicted by mother attachment. These results indicate that adolescent self-esteem, peer attachment, and loneliness convey similar information pertaining to differences in adolescents' risky internet behavior as mother attachment. Furthermore, these results indicate that mother attachment alone is a strong predictor of adolescents' risky internet behavior.

**Parental Monitoring, Adolescent Internet Behavior, and Mother Behavior**

The second hypothesis stated that adolescents who are more closely monitored by their parents will be less likely to engage in risky internet behavior, especially if they have a securely attached relationship with their mother. To test this hypothesis, correlations between parental monitoring, the mother-adolescent relationship variables (i.e., attachment, care, and overprotection) and risky internet behavior were first computed (Table 5). As expected, parental monitoring was negatively and significantly correlated with risky internet behavior \( (p \leq .001) \). Thus, the first part of this hypothesis was
supported: parental monitoring was significantly and negatively related to adolescent risky internet behavior.

Next, to test whether parental monitoring predicts internet risk, a linear regression was run with parental monitoring as the independent variable and internet risk as the dependent variable. Table 6 displays the Pearson correlation (R) between parental monitoring and internet risk, the unstandardized regression coefficient (B) and intercept, the standardize regression coefficient (β), $R^2$, and adjusted $R^2$. R for regression was significantly different from zero, $F(1, 116) = 46.93, p < .001$. The adjusted $R^2$ value of .28 indicates that nearly thirty percent of the variability in internet risk is predicted by parental monitoring. These findings, then, support the hypothesis that parental monitoring does significantly predict internet risk.

It was also hypothesized that the strength of the prediction of parental monitoring would depend on whether mother attachment was high or low. Correlations between parental monitoring and the mother-adolescent relationship showed that mother attachment and care were significantly and positively related ($p \leq .001$), while overprotection to parental monitoring was significantly and negatively correlated with parental monitoring ($p \leq .001$) (Table 5).
Next, adolescents were divided into groups based on the mean score (95) of the mother attachment measure: those who scored higher than the mean (high attachment group) were compared to those who scored lower than the mean (low attachment group). Mean parental monitoring scores were calculated, with the high attachment group having a higher mean score (M = 30.78) than the low attachment group (M = 23.56). Separate correlations between parental monitoring and internet risk for the high attachment vs. low attachment group were then computed (Table 7). Results supported the prediction: for the high attachment group, parental monitoring had a significant and negative correlation with internet risk, while parental monitoring was not correlated with internet risk for the low attachment group.

Impact of Mother Attachment versus Parental Monitoring of Risky Internet Behavior

The third hypothesis stated that parental monitoring would have less of an impact on adolescent risky internet behavior than attachment security. To examine this hypothesis, we compared the total amount of risky internet behavior variance explained by mother attachment and by parental monitoring from separate linear regressions were used (see Table 4 & 6). Since the $R^2$ for parental
monitoring (.28) was lower than that of mother attachment (.49), these findings support that while parental monitoring significantly predicts internet risk, its impact is less than that of mother attachment (Tabachnik & Fidell, 2007).
Table 1. Definitions, Means, and Standard Deviations for Scales (N = 119)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother-Attachment Relationship</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment (IPPA-R)</td>
<td>Degree of attachment security in mother-adolescent relationship</td>
<td>94.83</td>
<td>18.88</td>
</tr>
<tr>
<td>Care (PBI)</td>
<td>Love, nurturance, and affection received from mother</td>
<td>33.98</td>
<td>6.37</td>
</tr>
<tr>
<td>Overprotection (PBI)</td>
<td>Intrusive, harsh, controlling behavior of mother toward the adolescent</td>
<td>31.21</td>
<td>4.77</td>
</tr>
<tr>
<td><strong>Peer Relationships</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer Attachment (IPPA-R)</td>
<td>Degree of close, intimate relationships with peers</td>
<td>68.60</td>
<td>13.73</td>
</tr>
<tr>
<td>Loneliness</td>
<td>Degree of loneliness felt by adolescent</td>
<td>23.33</td>
<td>5.84</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>Global self-esteem, including positive beliefs and emotions</td>
<td>28.09</td>
<td>5.45</td>
</tr>
<tr>
<td><strong>Parental Monitoring</strong></td>
<td>Degree to which parents are aware of their adolescents' everyday activities (as perceived by the adolescent)</td>
<td>26.39</td>
<td>5.79</td>
</tr>
<tr>
<td><strong>Risky Internet Behavior</strong></td>
<td>The level of risk that an adolescent engages in on the internet, including the degree to which adolescents exposes personal information about themselves, the frequency with which they interact with people they do not know on the internet, and how often they engage in (or have been contacted online to engage in) sexual talk or behaviors on the internet</td>
<td>65.88</td>
<td>20.44</td>
</tr>
</tbody>
</table>
Table 2. Pearson Correlation Coefficients:
Mother-Adolescent Relationship (Attachment, Care, and Overprotection) by Adolescent Variables (N = 117)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mother Attachment (IPPA-R)</th>
<th>Care (PBI)</th>
<th>Overprotection (PBI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Risk</td>
<td>-.70***</td>
<td>-.60***</td>
<td>.31***</td>
</tr>
<tr>
<td>Peer Attachment (IPPA-R)</td>
<td>.67***</td>
<td>.62***</td>
<td>-.21*</td>
</tr>
<tr>
<td>Loneliness</td>
<td>-.57***</td>
<td>-.45***</td>
<td>.12</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>.79***</td>
<td>.70***</td>
<td>-.32***</td>
</tr>
</tbody>
</table>

* \( p \leq .05 
** \( p \leq .01 
*** \( p \leq .001 


Table 3. Pearson Correlation Coefficients: Adolescents' Peer Relationships, Self-Esteem, and Loneliness by Risky Internet Behavior (N = 119)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Adolescents' Risky Internet Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Attachment (IPPA-R)</td>
<td>-.69***</td>
</tr>
<tr>
<td>Loneliness</td>
<td>.48***</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-.59***</td>
</tr>
</tbody>
</table>

* \( p \leq .05 \)
** \( p \leq .01 \)
*** \( p \leq .001 \)

Table 4. Multiple Regression: Mother Attachment as a Predictor of Internet Risk (N = 116)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Internet Risk (DV)</th>
<th>Mother Attachment</th>
<th>B</th>
<th>( \beta )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother Attachment</td>
<td>-.70*</td>
<td>-.77***</td>
<td>.70</td>
<td></td>
</tr>
</tbody>
</table>

Means

<table>
<thead>
<tr>
<th>Means</th>
<th>65.73</th>
<th>94.69</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Deviations</td>
<td>20.46</td>
<td>18.75</td>
</tr>
</tbody>
</table>

\( R^2 = .49 \)
Adjusted \( R^2 = .49 \)
\( R = .70*** \)

* \( p \leq .05 \)
** \( p \leq .01 \)
*** \( p \leq .001 \)
Table 5. Correlation between Parental Monitoring, Mother-Adolescent Relationship, and Adolescent Risky Internet Use (N = 116)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Risky Internet Use</th>
<th>Mother Care (PBI)</th>
<th>Mother Overprotection (PBI)</th>
<th>Mother Attachment (IPPA-R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Monitoring</td>
<td>-.54***</td>
<td>.59***</td>
<td>-.32***</td>
<td>.65***</td>
</tr>
</tbody>
</table>

* p ≤ .05  
** p ≤ .01  
*** p ≤ .001

Table 6. Multiple Regression of Parental Monitoring on Internet Risk (N = 116)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Internet Risk (DV)</th>
<th>Parental Monitoring</th>
<th>B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Monitoring</td>
<td>-.54</td>
<td>-1.90***</td>
<td>.54</td>
<td></td>
</tr>
<tr>
<td>Means</td>
<td>65.95</td>
<td>26.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Deviations</td>
<td>20.51</td>
<td>5.80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R² = .29  
Adjusted R² = .28  
R = .54***

* p ≤ .05  
** p ≤ .01  
*** p ≤ .001
Table 7. Pearson Correlation Coefficients between Parental Monitoring x Internet Risk (High Attachment versus Low Attachment Groups) (N = 119)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Parental Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High Mother Attachment Group</td>
</tr>
<tr>
<td></td>
<td>(n = 73)</td>
</tr>
<tr>
<td>Adolescent Risky Internet</td>
<td>-.44***</td>
</tr>
</tbody>
</table>

* \( p \leq .05 \)  
** \( p \leq .01 \)  
*** \( p \leq .001 \)
CHAPTER FOUR
DISCUSSION

The primary purpose of this study was to examine the link between mother attachment and an adolescents' risky internet behavior. While research has shown that adolescents who have a lower self-esteem and poor peer relationships are more likely to engage in risky internet behavior (and be easier targets for online predators), this is the first study to demonstrate the connection between the quality of the mother-adolescent relationship and risky online activity in adolescents.

Maternal Attachment and Risky Internet Behavior

The first hypothesis was that securely attached adolescents would be less likely to engage in risky internet behavior than insecurely attached adolescents. Furthermore, it was predicted that securely attached adolescents would have a higher self-esteem, more successful peer relationships, and would be less lonely—all factors which would contribute to a lower risk of engaging in risky internet behavior.

As predicted, adolescents whose relationship with their mothers was characterized as securely attached, affectionate, and nurturing had significantly lower risky
internet behavior scores (compared to those whose mother-adolescent relationship was characterized as insecurely attached and/or intrusive, harsh, and authoritarian). These findings are not surprising, since it has long been show in developmental research that when an adolescent grows up with a mother who is warm and sensitively-attuned, the child is more likely to become an adolescent who feels both worthy and capable of giving and receiving love and care (Ainsworth, 1978; Bowlby, 1969). Therefore, they are less likely to suffer from low self-esteem. It is suggested in the present study that adolescents who engage in risky behavior may do so because they lack a sense of security from their mother, and are in search of getting such basic needs as love and self-worth met which they feel incapable of establishing in the real-world. In other words, risky internet users may fit into the "self-related" internet user group described by McKenna and Bargh (1999), who found that while a typical adolescent may engage in social conversation online, insecurely attached adolescents lack successful real-world relationships and engage in social interaction on the internet for more personal reasons (e.g., to define or complete themselves).
Research has shown that when an adolescent has a secure attachment with their mother, they are more likely to have successful and meaningful real-world relationships (compared to insecurely attached adolescents) (e.g., Sroufe, 2005). Findings from the current study were consistent with this research. Because the internet is a medium for adolescents to engage in conversation anonymously, it is therefore not surprising that risky internet use is more common among insecurely attached adolescents since they are more likely to lack the tools they need to form real-world relationships (and they are more likely to have a low self-esteem). Socializing on the internet doesn’t require adolescents to use skills that these adolescents may feel uncomfortable with—e.g., eye contact and/or their using bodies and voices for expression (McKenna & Bargh, 1999).

Although this is the first study we know of to examine the link between mother-adolescent attachment and an adolescents’ risky internet behavior, this is not the only study to note the impact of mother attachment on adolescents’ likelihood of engaging in risky behavior. Costello and colleagues (2006), for example, found that mother attachment can be a factor that influences whether adolescents are more likely to engage in risky behavior.
They found that the quality of mother attachment determines an adolescents’ likelihood of experimenting with drugs and becoming an alcoholic and whether they became involved in gangs or other non-influential peer groups: securely attached adolescents were more likely to avoid drugs and alcohol, and were more likely to be a part of positive peer groups. Furthermore, Costello and colleagues (2006) explain that because many insecurely attached adolescents grow up with mothers who discourage the expression of emotions, these adolescents often have a low level of self-control and self-worth. Without the ability to express their feelings appropriately, along with having low self-worth and self-control, these adolescents maintain their negative feelings internally and express their anger through negative behavior. Costello and colleagues (2006) also explain that these insecurely attached adolescents are likely to align with others and engage in activities that confirm their current self-beliefs. In terms of the internet, it may be that insecurely attached adolescents’ lack of self-worth has makes them feel disengaged from the real world, and they therefore may seek out others online who they perceive to have similar (negative) feelings. Moreover, while securely attached adolescents maintain successful real-world
relationships and question the potential risk/reward of sharing personal information and talking to strangers online, it is suggested that perhaps insecurely attached adolescents are so lonely that their need for socializing (and lack of self-worth) overshadows their ability to see the risk of engaging in such risky internet behavior.

Furthermore, Cooper and Shaver (1998) suggest securely attached adolescents are raised in ways that help them develop adaptive ways of dealing with negative emotions, while insecurely attached adolescents often hide their feelings internally from parents and instead express their feelings through deviant and risky behavior. Thus, the risky behavior of insecurely attached adolescents may be an expression of these adolescents' lack of love and attention at home. Therefore, it may be that while insecurely attached adolescents' understand the potential dangers of the internet, they still choose to engage in risky behavior because they feel there is no other medium for them to fulfill their social needs, and, in addition, because they feel their parents might disapprove.

Parental Monitoring and Risky Internet Usage

The hypothesis that adolescents who are more closely monitored by their parents would be less likely to engage
in risky internet behavior, especially if they have a securely attached relationship with their parents, was confirmed. This finding is consistent with Karavasilis and colleagues (2003), who suggest that adolescents who have a secure attachment are more likely to be monitored than insecurely attached adolescents. The present study also found this to be the case.

Karavasilis et al. also explain that securely attached adolescents are more compliant and more likely to perceive rules and boundaries set forth by their mother as a form of love, care, and protection (compared to insecurely attached adolescents). Insecurely attached adolescents, on the other hand, are more likely to perceive rules and boundaries as a form of punishment and as a personal attack to their independence. Because insecurely attached adolescents have a lower self-esteem and poorer social skills, it is suggested that insecurely attached adolescents may be using the internet as an outlet from the real-world in which they feel insignificant. Therefore, because insecurely attached adolescents are more likely to have a poorer relationship with their mother, and because the internet is an outlet from the real-world in which many of these adolescents feel socially isolated, it may be that parental
monitoring—when it does occur—is more likely to be considered by the insecurely attached adolescent as a form of intrusion that they react negatively to.

While previous studies have found that adolescents who are monitored by their parents are less likely to engage in risky internet usage (e.g., Berson, 2002; Freeman-Longo, 2000), this is the first study that examined this relationship within the context of maternal attachment. For insecurely attached adolescents, parental monitoring appeared to be less effective in preventing risky internet behavior (and these are the adolescents who are most likely to engage in such risky behavior). Parental monitoring is likely to occur—and to be more successful in preventing risky internet behavior—for securely attached adolescents. Therefore, it is necessary to recognize the overall quality of the mother-adolescent relationship in the online behavior of adolescents.

Lastly, the hypothesis that parental monitoring would have less of an impact on adolescent risky internet behavior than attachment security was confirmed. This is not surprising considering that mother attachment has long been found in developmental research to serve as a base to a child’s future behavior (e.g., Ainsworth, 1978; Bowlby, 1969; Cooper & Shaver, 1998; Sroufe, 2005). Although
parental monitoring sets boundaries and gives an adolescent the feeling of security, parental monitoring is only one key aspect involved in the understanding why some adolescents and not others engage in risky behavior online (Karavasilis, Doyle, & Markiewic, 2003). Parental monitoring appears to be most effective within the context of high-quality mother-adolescent relationship, as mentioned above.

Limitations and Future Directions

There are three potential concerns with the present study.

The first concern involves the number of participants. Future studies could include larger samples, including young adolescents in middle schools.

Second, since adolescents completed surveys during their parent-teacher conferences, the fact that these were completed in the presence of their parent and teacher may have influenced some of the adolescents' responses. It is possible that having adolescents complete the questionnaires in this manner may have not been able to capture the full scope of adolescents' feelings and behaviors. It is suggested that future studies have
adolescents complete the survey without the presence of their parents.

A last concern involves the internet risk scale. This scale was developed by using items created by the Polly Klaas Foundation as assessing risky internet behavior. So far there are no known studies that have further utilized this scale or developed other scales to accurately predict an adolescent's level of internet risk. Therefore, the use of this scale was exploratory only. It is hoped that the present study will influence the continuation of research related to adolescent risky internet behavior, with additional research conducted on this particular measure.

Summary and Conclusions

This study extends research related to adolescents' internet use. Unlike previous research that focused primarily on adolescents' self-esteem, loneliness, and parental monitoring as the primary predictors of internet risky behavior, the focus of this study was the quality of the mother-adolescent relationship as a predictor of those factors found in previous research to impact adolescents' risky internet behavior (i.e., self-esteem, loneliness, and parental monitoring). Results found that the quality of the mother-adolescent relationship is the greater
influence on the likelihood of adolescents engaging in risky internet behavior—more so than parental monitoring alone.

With computers becoming a part of adolescents’ everyday lives, and with adolescents increasingly being preyed upon by online predators, it is important that steps be made to strengthen the safety of adolescents online. It is hoped that the results of this study will help to raise awareness to families about the importance of the mother-adolescent relationship. Furthermore, it is important that parents facilitate the development of self-esteem and successful peer relationships in their children, so that they are able to grow into confident individuals who are capable of forming healthy real-world relationships instead of feeling the need to use the internet as their primary source of socialization.
APPENDIX A

INVENTORY OF PARENT AND PEER ATTACHMENT–REVISED

– MOTHER ATTACHMENT SCALE
**Inventory of Parent and Peer Attachment-Revised – Mother Attachment Scale**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Never or Never True</td>
<td>1</td>
</tr>
<tr>
<td>Not Very True</td>
<td>2</td>
</tr>
<tr>
<td>Sometimes True</td>
<td>3</td>
</tr>
<tr>
<td>Often True</td>
<td>4</td>
</tr>
<tr>
<td>Almost Always or Always True</td>
<td>5</td>
</tr>
</tbody>
</table>

1. My mother respects my feelings.
2. My mother is a good mother.
3. I wish I had a different mother.
4. My mother accepts me as I am.
5. I can’t depend on my mother to help me solve a problem.
6. I like to get my mother’s view on things I’m worried about.
7. It does not help to show my feelings when I am upset.
8. My mother can tell when I’m upset about something.
9. I feel silly or ashamed when I talk about my problems.
10. My mother expects too much from me.
11. I easily get upset at home.
12. I get upset a lot more than my mother knows about.
13. When I talk about things with my mother she listens to what I think.
14. My mother listens to my opinions.
15. My mother has her own problems, so I don’t bother her with mine.
16. My mother helps me to understand myself better.
17. I tell my mother about my problems and troubles.
18. I feel angry with my mother.
19. I don’t get much attention at home.
20. My mother supports me to talk about my worries.
21. My mother understands me.
22. I don’t know who I can depend on.
23. When I am angry about something, my mother tries to understand.
24. I trust my mother.
25. My mother doesn’t understand my problems.
26. I can count on my mother when I need to talk about a problem.
27. No one understands me.
28. If my mother knows that I am upset about something she asks me about.
APPENDIX B

PARENTAL BONDING INSTRUMENT
Parental Bonding Instrument (PBI)

<table>
<thead>
<tr>
<th>Very Like</th>
<th>Moderately Like</th>
<th>Moderately Unlike</th>
<th>Very Unlike</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

My Mother...

1. Speaks to me in a warm and friendly voice.
2. Helps me as much as I need it.
3. Lets me do things I like doing.
4. Seems emotionally cold to me.
5. Appears to understand my problems and worries.
6. Is affectionate to me.
7. Likes me to make my own decisions.
8. Does not want me to grow up.
9. Tries to control everything I do.
10. Invades my privacy.
11. Enjoys talking things over with me.
12. Frequently smiles at me.
13. Tends to baby me.
14. Does not seem to understand what I need or want.
15. Lets me decide things for myself.
16. Makes me feel I'm not wanted.
17. Can't make me feel better when I'm upset.
18. Does not talk with me very much.
19. Tries to make me feel dependent on her.
20. Feels I cannot look after myself unless she is around.
21. Gives me as much freedom as I want.
22. Lets me go out as often as I want.
23. Is overprotective of me.
24. Doesn't praise me.
25. Lets me dress in any way I please.
APPENDIX C

LONELINESS SCALE
UCLA Loneliness Scale

Indicate how often each of the statements below is descriptive of you. Put the number that best represents how you feel about each statement below.

1 = “I often feel this way.”
2 = “I sometimes feel this way.”
3 = “I rarely feel this way.”
4 = “I never feel this way.”

___ 1. How often do you feel unhappy doing so many things alone?
___ 2. How often do you feel you have nobody to talk to?
___ 3. How often do you feel you cannot tolerate being alone?
___ 4. How often do you feel as if nobody really understands you?
___ 5. How often do you find yourself waiting for people to call or write?
___ 6. How often do you feel completely alone?
___ 7. How often do you feel you are unable to reach out and talk with those around you?
___ 8. How often do you feel starved for company?
___ 9. How often do you feel it is difficult for you to make friends?
___ 10. How often do you feel shout out and excluded by others?
APPENDIX D

INVENTORY OF PARENT AND PEER ATTACHMENT-REVISED

- PEER SCALE
Inventory of Parent and Peer Attachment-Revised – Peer Scale

<table>
<thead>
<tr>
<th></th>
<th>Almost Never Or Never True</th>
<th>Not Very Often True</th>
<th>Sometimes True</th>
<th>Often True</th>
<th>Almost Always or Always True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. I like to get my friends' opinion on things I'm worried about.
2. My friends can tell when I'm upset about something.
3. When we talk, my friends listen to my opinion.
4. I feel silly or ashamed when I talk about my problems with my friends.
5. I wish I had different friends.
6. My friends understand me.
7. My friends support me to talk about my worries.
8. My friends accept me as I am.
9. I feel the need to be around my friends more often.
10. My friends don't understand my problems.
11. I do not feel like I belong when I am with my friends.
12. My friends listen to what I have to say.
13. My friends are good friends.
14. My friends are fairly easy to talk to.
15. When I am angry about something, my friends try to understand.
16. My friends help me to understand myself better.
17. My friends care about the way I feel.
18. I feel angry with my friends.
19. I can count on my friends to listen when something is bothering me.
20. I trust my friends.
APPENDIX E

ROSENBERG SELF-ESTEEM SCALE
Rosenberg Self-Esteem Scale

Below is a list of statements dealing with your general feelings about yourself. Put a number next to each statement, based on how you feel.

1 = Strongly Agree
2 = Agree
3 = Disagree
4 = Strongly Disagree

_____ 1. On the whole, I am satisfied with myself
_____ 2. At times, I think I am no good at all
_____ 3. I feel that I have a number of good qualities.
_____ 4. I am able to do things as well as most other people.
_____ 5. I feel I do not have much to be proud of.
_____ 6. I certainly feel useless at times.
_____ 7. I feel that I'm a person of worth, at least on an equal plane with others.
_____ 8. I wish I could have more respect for myself.
_____ 9. All in all, I am inclined to feel that I am a failure.
_____ 10. I take a positive attitude toward myself.
APPENDIX F

PARENTAL MONITORING SCALE
Parental Monitoring Scale (For the Adolescent)

Indicate how often each of the statements below is true about you and your mother. Circle one letter for each statement:

1 indicates “Always.”
2 indicates “Usually”
3 indicates “Sometimes”
4 indicates “Rarely”
5 indicates “Never”

How often do your mother…

_____ 1. Know what you do during your free time?
_____ 2. Know who you have as friends during your free time?
_____ 3. Know what type of homework you have?
_____ 4. Know what you spend your money on?
_____ 5. Know when you have an exam or paper due at school?
_____ 6. Know where you go when you are out with friends at night?
_____ 7. Know where you go and what you do after school?
Parental Monitoring Scale (For Mother)

Indicate how often each of the statements below is true about you. Circle one letter for each statement:

1 indicates “Always.”
2 indicates “Usually”
3 indicates “Sometimes”
4 indicates “Rarely”
5 indicates “Never”

How often do you...

____ 1. Know what your child is doing during their free time?
____ 2. Know who your children have as friends during their free time?
____ 3. Know what type of homework your child has?
____ 4. Know what your child spends their money on?
____ 5. Know when your child has an exam or paper due at school?
____ 6. Know where your child goes when they are out at night?
____ 7. Know where your child goes and what they do after school?
APPENDIX G

POLLY KLASS FOUNDATION SURVEY
Polly Klass Foundation Survey

Please read each statement below carefully and put the proper number next to each of the statements. The meaning of each number will not always be the same in each section, so be sure to look at the meaning of each number for each section before responding.

<table>
<thead>
<tr>
<th>Yes, always</th>
<th>Yes, usually</th>
<th>Yes, sometimes (more than once)</th>
<th>Yes, but only once</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

When online, have you...

____  1. Talked to someone online you never met face-to-face
____  2. Found out someone you were talking to online was an adult pretending to be much younger
____  3. Been asked questions about yourself by someone you never met face-to-face.
____  4. Been asked to meet somewhere by someone you never met face-to-face
____  5. Received sexually explicit links in email, IM, or web chats.
____  6. Talked online about sexual topics with someone you never met face-to-face.
____  7. Become close with someone you met online
____  8. Lied about your age (higher or lower) when communicating online
____  9. Pretended to be someone else when communicating online.
____ 10. Sent a picture or other information about yourself to someone you never met face-to-face
____ 11. Created or updated a profile that others can see or link to from your screen name
____ 12. Been asked online about sexual topics or favors by someone you never met face-to-face

How much do you agree or disagree that...

____  1. I have one or more private email accounts with passwords that my mother do not know about
____  2. I am frequently online without my mother around.
____  3. Communicating with people I don’t know online is okay because it is not really “real”
____  4. My mother has talked to me about Internet safety.
____  5. I am concerned about being approached by adults I do not know online.
____  6. I have been solicited by adults online and not told my mother.
Always 1  Usually 2  Sometimes 3  Rarely 4  Never 5

When using the internet, how often do you...

____  1. Check email
____  2. Read blogs or web journals
____  3. Go in chat rooms
____  4. Instant Message (IM) from a computer or cell phone
____  5. Use internet lingo (like “PIR”, or “BRB”) to alert someone that your mother are in the room and hide those conversations
____  6. Communicate by email with someone you never met face-to-face
____  7. Communicate via Instant Message (IM) with someone you never met face-to-face
____  8. Talk in an online chat room with someone you never met face-to-face
____  9. Get asked personal questions (like your age/sex/location) on email, IM, or online chat
____ 10. Talk about meeting someone you only know from email, IM, and/or web chats
____ 11. Post/update or send information about yourself on a message board or electronic mailing list
APPENDIX H

DEMOGRAPHICS
Demographics

Please answer the following questions. This information is anonymous and confidential. Do not skip any items. If you have any questions, please ask them now.

1. Your age: _____
2. Your gender: ___Female ___Male
3. What is your ethnic background? (Check one)
   ___Asian
   ___Black
   ___Caucasian
   ___Hispanic
   ___Other (________________)
4. What was the highest grade in school (or level of education) your mother completed? (Check One)
   ___Has not finished high school
   ___Graduated from high school
   ___Trade school
   ___Some college (includes A.A. degree)
   ___Graduated from college (B.A. or B.S. degree)
   ___Some post-graduate work
   ___Graduate or professional degree (specify: ________________)
   ___Unknown
5. What was the highest grade in school (or level of education) your father completed? (Check One)
   ___Has not finished high school
   ___Graduated from high school
   ___Trade school
   ___Some college (includes A.A. degree)
   ___Graduated from college (B.A. or B.S. degree)
   ___Some post-graduate work
   ___Graduate or professional degree (specify: ________________)
   ___Unknown
6. What is the current marital status of your mother? (Check One)
   ___Married
   ___Separated
   ___Divorced
   ___Together, but never married
   ___Widowed
   ___Unknown
REFERENCES


