

THE PENNSYLVANIA STATE UNIVERSITY  
SCHREYER HONORS COLLEGE

DEPARTMENT OF BIOBEHAVIORAL HEALTH

THE EFFECTS OF PARENTAL ATTACHMENT AND PARENTAL MONITORING ON  
HIGH RISK INTERNET BEHAVIORS IN ADOLESCENT FEMALES

KIRSTEN NICOLE KNAUER  
SPRING 2015

A thesis  
submitted in partial fulfillment  
of the requirements  
for a baccalaureate degree  
in Biobehavioral Health  
with honors in Biobehavioral Health

Reviewed and approved\* by the following:

Jennie Noll  
Professor of Human Development and Family Studies  
Thesis Supervisor

David J. Vandenberg  
Professor of Biobehavioral Health  
Honors Adviser

\* Signatures are on file in the Schreyer Honors College.

## ABSTRACT

**Objective:** To assess the mediating effects of parental quality and parental monitoring on high-risk Internet behaviors (HRIBs) in abused ( $n = 75$ ) and non-abused girls ( $n = 112$ ).

**Design:** One hundred eighty seven adolescent girls were studied to examine patterns of HRIBs via their Facebook profile pages. The participants' pages were assessed for presence of sexually provocative content and vulnerability. Questionnaires assessing parental quality and parental monitoring were given to both adolescents and caregivers at time point one and used to examine the relationship between these mediators and HRIBs.

**Methods:** Adolescents given questionnaires to fill out regarding parental quality and parental monitoring with caregiver consent. The scores were aggregated to give one number assessing parental quality and another for parental monitoring. Snapshots of the adolescent participants' Facebook pages were used to assess HRIBs. A multivariate correlation was used to measure the effects of parental quality and parental monitoring on HRIBs.

**Results:** Statistical analysis found no significant relationship between either parental quality or parental monitoring on HRIBs in adolescent girls.

**Conclusion:** Further research about protective factors against HRIBs in adolescent girls needs to be done to help shape policy and intervention efforts in the future.

**TABLE OF CONTENTS**

LIST OF TABLES ..... iii

ACKNOWLEDGEMENTS ..... iv

INTRODUCTION ..... 1

METHODS ..... 8

RESULTS ..... 14

DISCUSSION ..... 19

APPENDIX A ..... 25

BIBLIOGRAPHY ..... 27

ACADEMIC VITA ..... 31

**LIST OF TABLES**

Table 1: Participant Demographics-Race .....	9
Table 2: Participant Demographics-Abuse Status .....	9
Table 3: Participant Demographics-Income .....	10
Table 4: Presence of Sexually Provocative Content on Facebook Profiles Frequencies .....	14
Table 5: Aggregated Group Pearson's Correlations .....	16
Table 6: Control Adolescents Pearson's Correlations .....	16
Table 7: Abused Adolescents Pearson's Correlations .....	16
Table 8: Interaction of Group Status and Effects of Maternal Attachment on Sexually Provocative Profile Pictures .....	17
Table 9: Interaction of Group Status and Effects of Maternal Attachment on Presence of Sexually Provocative Photos .....	17
Table 10: Comparison of Mean Scores of Measures in Abused vs. Control Adolescents .....	18

## ACKNOWLEDGEMENTS

I would like to thank Dr. Jennie Noll for her constant guidance and encouragement in completing my thesis. Without her knowledge and inspiration I would not have a product I am half as proud of today; she always said she would work as hard as I did and she more than meant it. Additionally, I would like to thank her team—Megan Maas, Jaclyn Barnes, and Mojtaba Kohram—for always providing me with any resources or information I needed. Finally, I would like to thank my amazing parents for their unwavering encouragement and love.

## INTRODUCTION

Internet use by adolescents has increased by over a half an hour per day in the past five years<sup>1</sup>. Today, eighty-four percent of adolescents have Internet access<sup>1</sup>, and these adolescents are utilizing computers and Internet access more than ever before<sup>2</sup>. In a 2010 study by the Kaiser Family Foundation of media use in adolescents aged eight to eighteen, 11-to-14 year olds spent an average of one hour and forty-six minutes on the Internet, and 15-to-18 year olds spent an average of one hour and thirty-nine minutes on the Internet<sup>1</sup>. Further analysis shows adolescents are spending roughly a quarter of their online time on social networking sites alone<sup>1</sup>. The increasing trend of Internet use is not a new or slowing phenomena<sup>3</sup>; in 2007, a random-digit-dial telephone survey concluded around 67% of ‘teenagers’ in the US used the Internet daily<sup>4</sup>. At the time of Lenhart’s study (2007), this statistic demonstrated a sharp growth in use from previous Internet use studies<sup>3</sup>. However, as demonstrated by the Kaiser Family Foundation’s findings, the number of adolescents accessing the Internet daily is only continuing to increase due to a combination of increased access and availability of attracting social networking sites<sup>1</sup>.

Understanding social networking sites (SNS) is critical in understanding adolescents Internet usage if not solely because of sheer prevalence; of 12-to-17 year olds, closed to three-quarters report using SNS, the majority of which on a daily basis<sup>5,6</sup>. This study aims to investigate the interaction of parental quality and parental monitoring on high risk Internet behaviors. Because adolescents are spending a sizeable amount of their ‘online’ time using SNS, this study will examine the relationship between the parental-adolescent relationship and risky behaviors on SNS. Currently, 94% of adolescent SNS users have Facebook accounts<sup>7</sup>, with a majority of adolescent users logging on daily<sup>5</sup>. This study will focus on Facebook as the primary

source of data about adolescent SNS use. The study will combine data drawn from adolescent and caregiver self-reports with naturalistic data about the participants' Facebook pages. The ubiquitous nature of Facebook as an SNS among adolescents coupled with the depth of information available on the site make Facebook a viable research tool<sup>5</sup>.

Despite the relatively recent prevalence of SNS, research concludes SNS are redefining multiple aspects of social interaction, such as social support seeking<sup>7</sup>, extensive social network formation<sup>8</sup>, and maintaining and beginning friendships<sup>4</sup>. However, the most notable facet SNS bring to social interaction is the creation of a subjective presentation of self to act as a metaphor to the physical adolescent in the virtual world<sup>8</sup>. When using SNS, adolescents are given the opportunity to choose a 'self' to present to the world<sup>9,10</sup>. Sometimes, adolescent decisions about pictures or posts to publish to their personal SNS pages can put adolescents in danger from Internet predators<sup>10,24</sup>. Posts by adolescents on their SNS pages can suggest sexual readiness, vulnerability to sexual discourse, or an interest in beginning some type of sexual relationship<sup>9</sup> in an alarming percentage of the adolescent population. A study of youths and social networking profiles found that at least one sexual message or sexual self-disclosure was present in 30% of adolescent profiles<sup>11</sup>.

The concern about sexual self-presentation by adolescents on SNS is based on the risk of offline predation sexually provocative profiles put adolescents in<sup>9,10</sup>. In a study of adolescent girls' SNS use, choosing a sexually provocative online avatar was independently associated with an increase in online sexual advances<sup>10</sup>. Furthermore, online sexual advances were concluded to be independently associated with offline encounters, putting adolescents at increased risk for sexual predation<sup>9,10</sup>. The same study found offline meetings between adolescent girls and predators were directly predicted by unintentional exposure to sexual

content on the Internet, high-risk profiles containing sexual content, and online sexual advances<sup>9</sup>. The present study is valuable in that it provides objective research about adolescent Internet use. In order to increase the safety and well-being of children, the OJJDP suggests mental health professionals gain further understanding of online solicitation<sup>24,25</sup>. In addition, parents, teachers, and others involved in adolescent lives are urged to learn about online predators<sup>24</sup>.

One group at heightened risk for dangerous SNS exposure like unintentional exposure to sexual content and online sexual advances are maltreated adolescent females<sup>9,10</sup>. The link between Internet victimization and history of child abuse and maltreatment<sup>9,10</sup> is significant in that it implies a link between past abuse and greater likelihood of future abuse. A large body of research suggests childhood maltreatment has long-term effects on behavior, physiology, and risk indicators<sup>12-15</sup>. Childhood sexual abuse increases an adolescent's risk of developing depressive symptoms<sup>12,13,15</sup>, substance abuse<sup>12,13</sup>, delinquent behavior<sup>12,14,15</sup>, and obesity<sup>15</sup>. The two most commonly discussed forms of online victimization are sexual solicitation and sexual harassment<sup>12</sup>, both of which have direct links with the behavioral troubles previously listed<sup>12,14</sup>. Adolescent females may be at particular risk of the effects of sexual abuse; a longitudinal study of abused adolescent females concluded sexually abused females met criteria for DSM diagnosis .more frequently than non-abused females<sup>16</sup>, exhibited more socially unusual behaviors<sup>16</sup>, and had more disturbed peer relationships<sup>17</sup>. As Facebook is an important socialization tool for modern adolescents<sup>7</sup>, the present study opens up potential for the examination of the effects of sexual abuse on peer relationships<sup>5</sup>.

Childhood sexual abuse has large effects on behavior, physiology, and psychological state, and is directly associated with a myriad of negative health outcomes<sup>14,16,18</sup>. Studies of abused adolescents show a positive relationship between abuse and poorer mental and



physical health<sup>14,18</sup>. Current research also supports the link between exposure to sexual abuse and increased involvement in risky behaviors<sup>17-20</sup>. Research shows abused adolescents are more vulnerable to high-risk Internet behaviors because of their proven increased exposure to sexual content online, sexual self-presentation, online sexual advances, and offline meetings<sup>10</sup>. While there is a large body of research about sexual abuse and its links with risky behaviors like substance abuse<sup>17-20</sup>, aggression<sup>17</sup>, and risky sexual practices<sup>17</sup>, there is a gap in existing research about the effects of sexual abuse on Internet behavior. A study of middle school students using the Youth Internet Safety Survey (YISS) found adolescents were engaging in various types of risky behaviors online, the most common of which were posting personal information, visiting inappropriate websites, and participating in online harassment<sup>21</sup>. In addition, the study found a significant trend of risk clustering where adolescents who engaged in one high risk Internet behavior (HRIB) also engaged in others<sup>21</sup>. In order to mitigate the impact of HRIB on adolescent safety and development, research surrounding the risk factors for HRIB by adolescents is needed<sup>17,21</sup>.

### *Parental Attachment*

Attachment theory suggests strong adolescent-parent relationships with security, trust, and mutual understanding promote positive social outcomes<sup>31</sup>. Positively attached adolescents manifest less substance abuse, fewer behavioral problems, and less maladaptive sexual behaviors<sup>10, 28, 30-31</sup>. During adolescence, females experience increased desire for independence, privacy, and emotional autonomy from their parents<sup>26, 31</sup>. Despite the increasing emotional distance between parent and child during adolescence, though, trust and communication in the parent-adolescent relationship is linked with healthier patterns of Internet usage<sup>9,10,31</sup>. A large body of research supports the claim that parental attachment plays a critical role in sexual

development, especially so in the development of sexual knowledge and sexual attitudes<sup>32</sup>.

Furthermore, sexual knowledge and sexual attitudes have been extensively linked to subsequent sexual behaviors<sup>26,32</sup>.

Existing research on parent-child closeness suggests the strongest impact of parental attachment on adolescent behavior exists within the mother-daughter relationship<sup>32</sup>. While the mechanism of the effects of parental attachment on adolescent behavior is not fully understood, research suggests parental attachment affects adolescent sexual behaviors indirectly through mood<sup>32,33</sup>. There is not currently an extensive body of research surrounding parental attachment and HRIBs associated with sexual content or SNS behaviors. However, an objectively quantified study of sexually provocative behaviors on SNS showed quality parenting moderated high risk Internet profiles<sup>9</sup>.

### *Parental Monitoring*

Currently, parents underestimate their adolescents' engagement in visiting pornographic sites and partaking in risky behaviors like offline meetings and overestimate parental Internet supervision and home communication about Internet safety<sup>26</sup>. This gap in parental understanding and adolescent behavior is important because of extensive evidence that greater parental monitoring is implicated in positive adjustment during adolescence<sup>26-28</sup>. The current trend of parents overestimating the effects of monitoring efforts on adolescent behavior is troublesome when comparing the perceived and actual risks of sexual advances<sup>26</sup>. Of 9 to 19 year old adolescents who go online every day, 31% reported receiving sexual advances online, compared to the 7% predicted by parents<sup>26</sup>. In addition, a large body of research supports an association between high parental monitoring and lower levels of sexual behavior<sup>28,30</sup>. In order to promote

effective parental monitoring and subsequent positive impacts on adolescents, operational monitoring methods need to be explored.

There are a variety of proposed mechanisms through which parental monitoring impacts adolescent behaviors and outcomes. A study of the interaction of adolescent genetics and parental monitoring found high quality parental monitoring was associated with decreased presence of externalizing behaviors characteristic of adolescent behavior problems<sup>29</sup>. The study found a gene X parental monitoring interaction; adolescents with a minor GABRA2 allele were more susceptible to the effects of parenting style, specifically monitoring behaviors<sup>29</sup>. Proof of the interaction of parental monitoring and genetic disposition demonstrates the critical impact parental monitoring can have on adolescents' physiology, psychology, and behaviors.

According to a naturalistic study of adolescent Internet use and online avatars, the effects of parental monitoring are critical in protecting adolescent females from the dangers of HRIBs, especially vulnerable, abused adolescents<sup>10</sup>. Furthermore, research suggests parental monitoring impacts adolescent adjustment patterns more strongly for females than males<sup>26</sup>. Parents should not just understand what sites their children are visiting, but behaviors, attitudes, and peer affiliations which could potentially impact risk of offline encounters<sup>10</sup>. Research suggests the most effective method for parents to promote safe Internet practices is through fostering open communication and participative decision making when setting Internet limits<sup>26</sup>. In fact, studies on adolescent behaviors show parental communication has a stronger impact on sexual behaviors than parental closeness<sup>32</sup>.

**Hypothesis 1:** Higher quality parenting will result in decreased presence of sexual content on adolescent females social media profiles.

**Hypothesis 2:** Greater levels of parental monitoring will result in decreased presence of sexual content on adolescent females social media profiles.

**Hypothesis 3:** Abused adolescents will exhibit significantly higher levels of sexual content on Facebook profiles and significantly lower levels of parental attachment and parental monitoring.

The rationale for the present study is to add to existing literature about the effects of parental monitoring and parental quality on risky behaviors in adolescents by examining the relationship between these two factors and adolescent HRIBs on SNS. Currently, research suggests parental monitoring and parental quality moderate high-risk sexual attitudes and behaviors in adolescents<sup>9</sup>. The moderating effect of parental quality and parental monitoring on high-risk behaviors on Facebook will be examined to add to the existing literature. Adolescent and caregiver responses about parenting quality were aggregated to analyze the relationship between parental attachment and HRIBs (hypothesis1) and parental monitoring and HRIBs (hypothesis2). In addition, the present study will add to existing knowledge about the link between sexual abuse and higher levels of HRIBs and lower levels of parental attachment and parental monitoring (hypothesis3).

The present study is the first time adolescent HRIBs on Facebook will be objectively examined. The data about sexual content on SNS is not drawn from adolescent self-report and thus eliminates a large potential for bias in the study. The objective quantification of sexual content on adolescent females' Facebook profiles will be related to reports of parental quality and monitoring to objectively evaluate need for parental interventions on adolescent Internet use.

## METHODS

Ultimately, 450 girls aged 12-16 were recruited over the course of 30 months for participation in the study. The study is a cross sectional design to study Internet use in adolescent females across three time points. At each time point, HRIBs will be assessed, along with measures of parental quality, monitoring, and general information. This paper will focus on 187 of the female participants at one time point. At time point one, snapshots of adolescents' Facebook profiles were taken and coded to identify presence of HRIBs. Ultimately, the scores—representing HRIBs in the adolescent's—were analyzed to find a statistically significant relationship between parental quality, parental monitoring, and presence sexual content on the adolescents' Facebook profiles. The study was approved by the institutional review board of the Cincinnati Children's Hospital Medical Center (protocol #2012-0613). In accordance with the institutional review board, all researchers completed proper training and accreditation to work with human subjects.

### *Participants*

Over the course of 30 months, 385 adolescent females aged 12-16 were recruited for the study. The recruitment for the abused group focused on history of sexual abuse as a requirement in lieu of research suggesting sexual abuse puts female adolescents at particularly high risk for HRIBs<sup>22</sup>. The sexually abused girls in the study were recruited from the Mayerson Center for Safe and Healthy Children at Cincinnati Children's Hospital Medical Center (CCHMC) and the Hamilton County Jobs and Family Services. Comparison adolescent females were recruited from the Teen Health Center (THC) run by the division of Adolescent Medicine at CCHMC. The girls were comparison matched for age, ethnicity, income, and zip code<sup>22</sup>. In addition, due to the average family income averaging <\$30,000 per year, an extended control group was recruited to accurately reflect the demographics of youth in the Greater Cincinnati area. Discrepancies

between ethnicity proportions and average family income necessitated an extended control group to foster more generalizable results from the study. Figures 1, 2, and 3 demonstrate the demographic breakdown of the groups. For this thesis, only the first 187 adolescents recruited were used for data analysis.

**Table 1: Participant Demographics-Race**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid African American	94	50.3	50.3	50.3
White	71	38.0	38.0	88.2
American Indian	1	.5	.5	88.8
Asian or Pacific Islander	4	2.1	2.1	90.9
More Than One Race	14	7.5	7.5	98.4
Other	3	1.6	1.6	100.0
Total	187	100.0	100.0	

**Table 2: Participant Demographics-Abuse Status**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Abused	67	35.8	35.8	35.8
Control	62	33.2	33.2	69.0
Extended Control	50	26.7	26.7	95.7
Group 3	8	4.3	4.3	100.0
Total	187	100.0	100.0	

Table 3: Participant Demographics-Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 10K	51	27.3	27.4	27.4
	10-19.9K	28	15.0	15.1	42.5
	20-29.9K	22	11.8	11.8	54.3
	30-39.9K	17	9.1	9.1	63.4
	40-49.9K	12	6.4	6.5	69.9
	50-59.9K	10	5.3	5.4	75.3
	60-69.9K	13	7.0	7.0	82.3
	70-79.9K	6	3.2	3.2	85.5
	80-89.9K	4	2.1	2.2	87.6
	90-99.9K	6	3.2	3.2	90.9
	100-119K	7	3.7	3.8	94.6
	over 120K	9	4.8	4.8	99.5
	888	1	.5	.5	100.0
	Total	186	99.5	100.0	
Missing	999	1	.5		
Total		187	100.0		

### *Measures*

#### Parental Quality and Monitoring

The present study focuses on the mediating effects of parental quality and parental monitoring on HRIBs in non-abused and abused adolescent females. At time point one, data was collected from caregivers and adolescents to measure both factors. For the purpose of this paper, only measures of the adolescent's perception of parental quality are used in data analysis.

Parental quality was measured using the Inventory of Parental and Peer Attachment Questionnaire (IPPA-R)<sup>23</sup>. Each question was scored on a scale of 1 to 5 with 1 representing low quality attachment and 5 representing extremely high quality attachment. Scores related to parental quality were aggregated to produce a final ‘parental quality score.’ Parental monitoring was measured using an Internet and Media Consumption Inventory and separate aggregate scores were produced to represent maternal and paternal attachment based on questionnaire answers.

Linear regressions evaluating abuse status, parental attachment, parental monitoring, and the interactions of abuse status with both independent variables were performed. The dependent variables assessed were scores of HRIBs drawn from the Facebook profile codebook. The linear regression analysis showed the effects of abuse status, attachment, monitoring, and the interactions of independent variables on the adolescents’ scores of HRIBs.

### High Risk Internet Behaviors

The final analysis examined high and low quality parenting and high and low levels of parental monitoring with HRIBs. HRIBs were measured on the presence of sexually provocative content on the adolescents’ social media profiles, specifically, their Facebook profiles. A snapshot of each participants’ Facebook profile was taken at the first time point in the study. Using a set of questions designed to identify sexually provocative behavior, vulnerability to sexual predators, and sexually provocative content, each Facebook profile was coded by multiple researchers. Each profile was viewed by at least three researchers who answered 34 questions about each profile, seven of which targeted the presence of sexual content. The following questions were used to assess HRIBs related to sexual content on the profiles:

- *Is the profile picture sexually provocative in any way?* [2]
- *Are there sexually provocative and interesting photos of the adolescent herself?* [9]
- *Are there sexually provocative photos of others?* [10]



- *Are there pictures of any type of sexual activity (i.e., others kissing, provocative dancing)?* [12]
- *Does it contain reference to sexual activity or sexual nature?* [18]
- *Is the overall profile sexual in nature?* [27]
- *Are there any indications that the adolescent is receiving sexual advances or involved in sexual chat (i.e. you are really sexy)?* [30]

Questions related to presence of sexual content on Facebook profiles were used in data analysis to study the link between parental quality and parental monitoring on HRIBs.

### Abuse

Abuse was measured based on participant self-report identifying presence of sexual abuse to the adolescent within the year prior to the study.

### *Analysis*

To assess the effects of parental monitoring and parental quality on HRIBs, multiple descriptive statistics and multiple correlations were performed using SPSS. The correlations were used to assess the relationship between specific questions indicating presence of sexual content and measures of parental quality and monitoring. Additional correlations were run that separated the abused and control groups to evaluate whether abuse status affected the relationship between parental quality and monitoring on HRIBs. Using SPSS, correlations were run to produce Pearson's correlation coefficients ( $r$ ) and evaluate statistical significance. Pearson's correlation coefficients evaluate the linear relationship between two variables and ultimately is a score between -1 (negative correlation) and 1 (positive correlation) with 0 representing no correlation. P-values were also generated to determine statistical significance, and the p-value threshold for significance was set at  $<.05$ .

To compare the effects of parental monitoring and parental attachment in abused and control adolescents, linear regression was used. In addition, simple t-tests were performed to

examine the relationship between abuse status and levels of parental monitoring, parental attachment, and presence of sexual content on Facebook profiles.

In order to determine the reliability of the question system used, a test for Cronbach's alpha was run using SPSS. Cronbach's alpha tests the reliability of a set of questions, meaning it determines whether all the questions in a given set are measuring the same construct. The alpha reliability was calculated at  $\alpha=.777$ . Because  $\alpha>.7$ , the seven questions used to quantify sexual content on the adolescents' Facebook profiles all measure the same construct and none had to be removed from statistical analysis.

For the present study, the event of interest is the presence of sexually provocative content on participants' Facebook profiles. Each of the seven questions used to identify presence of sexual content were coded to have higher values reflecting increased presence of HRIBs. Each participant received multiple scores for each of the seven HRIB questions, and these scores were averaged to represent a final score for that question. The study hypothesizes a relationship between the variables of parental attachment and parental monitoring on the presence of sexually provocative content. Responses on questionnaires about parental attachment quality and parental monitoring of Internet behaviors were used to assess the two variables. Scores on the related to parental attachment and parental monitoring drawn from the participants' questionnaire answers were summed to give a singular score for each variable. Responses were coded to reflect higher scores as higher quality parenting and higher levels of parental monitoring. Consequently, higher aggregate scores represented both higher quality parental attachment and greater levels of parental monitoring of Internet use.

## RESULTS

### Sexual Content—HRIBs

Consistent with current research, a large percentage of adolescent Facebook profiles coded displayed some form of sexual content. Table 4 shows the percentage of profiles that contained sexual content in different areas of the profile; the complete list of questions used to identify sexual content can be found in Appendix A. Table 4 includes frequency data from all 7 questions used in analysis for the present study. According to question 2, 62% of the female adolescent's profile pictures contained at least some sexual content. Additionally, close to half of the adolescents' overall Facebook profiles were rated as at least 'Somewhat' sexual, according to question 27. Pertinent to this study, 43.2% of the profiles indicated at least somewhat that the adolescent was receiving or open to sexual advances or sexual chat, as indicated in question 30.

Question	Number of Responses	Percent of Profiles Including Sexual Content	Percent of Profiles Not Including Sexual Content
Two	187	62%	38%
Nine	187	22.4%	78.6%
Ten	187	17.7%	83.3%
Twelve	187	7.5%	92.5%
Eighteen	187	19.1%	80.2%
Twenty Seven	187	49.9%	51.1%
Thirty	187	43.2%	47.1%

**Table 4: Presence of Sexually Provocative Content on Facebook Profiles Frequencies**

### Parental Attachment

Maternal attachment was not correlated with sexually provocative content in adolescents' Facebook profile pictures ( $r = -.042$ ) or others photos posted ( $r = .078$ ),  $p's > .05$ . In addition, there were no significant correlations between maternal attachment and the overall sexuality of

the profile ( $r = -.019$ ), references to sexual activity ( $r = -.047$ ), indications of sexual chat or advances ( $r = -.04$ ), or sexual pictures of others ( $r = -.075$ ),  $p's > .05$ . Maternal attachment was weakly correlated with a decreased number of pictures of sexual activity ( $r = -.148$ ),  $p < .05$ . Table 5 displays the correlations between the aggregated maternal attachment score and measures of sexual content on adolescent Facebook profiles. There were no significant correlations between paternal attachment and measures of sexual content on adolescent Facebook profiles,  $p's > .05$ .

The adolescent participants were stratified into abused and control groups and Pearson correlation tests were run between maternal attachment and measures of sexually provocative content. There were no significant correlations found between levels of maternal attachment and sexual content on control adolescents' Facebook profiles,  $p's > .05$  (see Table 6). Similarly, there was not a significant relationship between maternal attachment and sexual content on abused adolescents' Facebook profiles,  $p's > .05$  (see Table 7).

In abused females, paternal attachment was slightly positively correlated with references to sexual activity or sexual nature ( $r = .269$ ,  $p = .035$ ),  $p < .05$ . There were no other significant effects of paternal attachment on any measures of sexual content on adolescents' Facebook profiles in either the abused or control group,  $p's > .05$ .

### Parental Monitoring

There was no significant effect of parental monitoring on scores of sexual content on adolescent Facebook profiles (see Table 5),  $p's > .05$ . However, as seen in Table 6, there was a slightly negative correlation between parental monitoring and sexually provocative photos of others in control females ( $r = -.208$ ,  $p = .038$ ),  $p < .05$ . In abused females (see Table 7), paternal monitoring was slightly negatively correlated with sexually provocative photos of others ( $r = -$

.258,  $p = .039$ ) and slightly positively correlated with references to sexual activity or sexual nature ( $r = .258$ ,  $p = .038$ ),  $p's < .05$ .

**Table 5: Aggregated Group Pearson's Correlations**

	Two	Nine	Ten	Twelve	Eighteen	Twenty Seven	Thirty
<b>Maternal Attachment</b>	.567(-.042)	.290(.078)	.310(-.075)	.045*(-.148)	.525(-.047)	.793(-.019)	.589*(-.040)
<b>Paternal Attachment</b>	.940(.006)	.990(-.001)	.794(-.021)	.811(.019)	.194(.103)	.697(-.031)	.699(-.031)
<b>Parental Monitoring</b>	.407(-.079)	.817(-.022)	.058*(-.179)	.385(.083)	.177(.128)	.941(.007)	.895(-.013)

\* = significant at  $p < .05$

+ = trend,  $p < .10$

**Table 6: Control Adolescents Pearson's Correlations**

	Two	Nine	Ten	Twelve	Eighteen	Twenty Seven	Thirty
<b>Maternal Attachment</b>	.058*(-.179)	.685(-.039)	.300(.099)	.268(-.106)	.186(-.126)	.265(-.107)	.279(-.103)
<b>Paternal Attachment</b>	.273(-.112)	.236(.121)	.764(-.031)	.757(.032)	.972(.004)	.362(-.093)	.568(-.058)
<b>Parental Monitoring</b>	.210(-.126)	.655(-.045)	.038*(-.208)	.893(-.014)	.744(.033)	.805(-.025)	.890(-.014)

\* = significant at  $p < .05$

+ = trend,  $p < .10$

**Table 7: Abused Adolescents Pearson's Correlations**

	Two	Nine	Ten	Twelve	Eighteen	Twenty Seven	Thirty
<b>Maternal Attachment</b>	.159(.165)	.062 <sup>+</sup> (.218)	.849(-.023)	.185(-.156)	.558(.069)	.340(.113)	.631(.057)
<b>Paternal Attachment</b>	.119(.200)	.541(-.079)	.935(.011)	.787(.035)	.035*(.269)	.548(.078)	.871(.021)
<b>Parental Monitoring</b>	.418(.102)	.470(-.091)	.039*(-.258)	.184(.167)	.038*(-.258)	.631(.061)	.799(.032)

\* = significant at  $p < .05$

+ = trend,  $p < .10$

There were significant effects of abuse status on the relationship between attachment, monitoring, and sexual content on Facebook profiles. Table 8 shows the significant effects of sexual abuse on the relationship between maternal attachment and sexually provocative profiles. In addition, Table 9 suggests there may be a significant effect of abuse status on the relationship between maternal attachment and presence of sexually provocative photos on adolescents' Facebook profiles.

**Table 8: Interaction of Group Status and Effects of Maternal Attachment on Sexually Provocative Profile Pictures**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.044	.284		3.679	.000
	MOM_A	-.008	.004	-.191	-1.897	.059
	Groups2	-.825	.405	-.780	-2.038	.043
	MomAGroupInter	.014	.006	.893	2.350	.020

a. Dependent Variable: Two

**Table 9: Interaction of Group Status and Effects of Maternal Attachment on Presence of Sexually Provocative Photos**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.112	.126		.890	.374
	MOM_A	-.001	.002	-.034	-.340	.734
	Groups2	-.268	.180	-.569	-1.491	.138
	MomAGroupInter	.005	.003	.723	1.907	.058

a. Dependent Variable: nine

The means and standard deviations of both abused and control adolescents were calculated for maternal attachment, paternal attachment, and parental monitoring. Table 10 includes the mean scores for both abused and control adolescents, as well as T-test scores testing

for a significant difference in the means between groups. In addition, the mean values and standard deviations of scores on questions measuring sexual content on the adolescents' Facebook profiles were calculated. To test whether these values were significantly different between groups, independent sample T-tests were performed. While there were no significant differences found between group, p values of  $<.1$  were found, suggesting a potential difference between groups on scores of maternal attachment, presence of sexually provocative photos of the adolescent themselves, and presence of sexually provocative photos of others.

**Table 10: Comparison of Mean Scores of Measures in Abused vs. Control Adolescents**

	<b>Control</b>	<b>Abused</b>	<b>T-test</b>
<b>Mom_A</b>	67.6(11.8)	64.3(13.6)	.076 <sup>+</sup>
<b>Dad_A</b>	58.8(10.6)	57.5(11.9)	.530
<b>Question 2</b>	.514(.514)	.627(.519)	.147
<b>Question9</b>	.070(.190)	.144(.296)	.071 <sup>+</sup>
<b>Question 12</b>	.013(.058)	.038(.121)	.061 <sup>+</sup>
<b>Question 18</b>	.077(.217)	.094(.213)	.573
<b>Question 27</b>	.414(.485)	.453(.457)	.570
<b>Question 30</b>	.432(.479)	.482(.495)	.432

## DISCUSSION

The results from the current study suggest little significant effect of parental monitoring and parental quality on HRIBs in adolescent females. In both abused and non-abused adolescent females, attachment and monitoring did not heavily impact levels of sexual content on Facebook profiles. As a result, hypothesis 1 and 2, which suggest a negative relationship between monitoring and attachment and sexual content, must be rejected. Due to previous research implicating parental monitoring as the most effective online safety strategy for adolescents, these results recommend a need for further research on protective factors against HRIBs in adolescent girls. Furthermore, these results suggest a lack of current understanding of risk factors for HRIBs in adolescent girls. The relative novelty of the Internet and recent boom in popularity of SNS necessitates new research about Internet safety for adolescents.

### Parental Attachment and HRIBs

Current research proposes parental closeness and attachment may not be directly related to risky behaviors and adjustment patterns, but may indirectly affect them through mood<sup>32</sup>. According to existing research, parental attachment affects sexual experience through creation of a context for exploration and deviance<sup>33</sup>. For instance, a proposed mechanism of attachment's effects on sexual behaviors is depressive mood; poorer attachment precedes higher prevalence of depressed mood which precedes maladaptive sexual behaviors<sup>32</sup>. The indirect relationship between parental attachment and sexual behaviors could explain the lack of correlation found in the study. Previous studies have suggested parental attachment plays a mediating role in the relationship between abuse and HRIBs in adolescents<sup>9,10</sup>.

The study suggests no correlation between parental attachment and indications that the adolescent is willing to be or already involved in sexual chat or sexual advances. As SNS



continue to gain popularity, adolescents are at increased threat of advances from online predators<sup>9</sup>. Abused adolescent females are at especially high risk of subsequent offline meetings<sup>9</sup>. This finding suggests the immediate need to identify both risk and protective factors for HRIBs related to attracting online predators. When looking solely at abused females, the interaction between maternal attachment and HRIBs is alarming. Regression analysis revealed higher levels of maternal attachment in abused females actually resulted in an increase in sexual content on adolescents' Facebook profiles.

Whereas attachment typically acts as a protective factor against HRIBs, homes where abuse has occurred may have a different structure and actually encourage some sexual behaviors. The finding suggests that abused adolescents' attachment to their mothers may not be a beneficial one and is not consistent with Hypothesis 3. There is very little current research about the relationship of HRIBs and attachment; however, this finding proposes an atypical relationship between attachment and sexual behaviors in abused females only. Regression analysis of the effects of maternal attachment in control females showed the opposite trend; greater levels of maternal attachment showed lower levels of sexual content on Facebook profiles. The results of this study suggest the mechanisms of attachment and the family structure in homes where abuse has occurred needs to be further examined.

However, it is important to note this study comes at the forefront of the field of parental attachment and adolescent Internet behavior. Currently, there is very little quantified information about adolescent Internet use, and risk factors of HRIBs may be different than risk factors for other high risk behaviors. Furthermore, parental attachment may affect online behaviors differently than other, more heavily studied behaviors. Much of the ambiguity in existing knowledge about adolescent Internet use comes from the lack of objective data on usage

patterns. This study aims to fill this gap by objectively quantifying sexual content on adolescent Facebook profiles. For this reason, typical models of the impact of parental attachment may not fit HRIBs. Present research supports the conclusion that parental attachment is a ubiquitous protective factor against risky behaviors in adolescence. However, as the lack of significant correlations in this study suggests, parental attachment may not play as large a role in preventing risky behaviors on the Internet versus traditional risky behaviors.

### Parental Monitoring and HRIBs

Present understanding of risky behaviors in adolescents implicates parental monitoring as the most effective protective factor against risky behavior<sup>9,10,21</sup>. Even further, research suggests a relationship between higher levels of parental monitoring and lower levels of sexual behavior in adolescence<sup>28,30</sup>. However, the results of this study indicated little evidence of a connection between parental monitoring and adolescent HRIBs on Facebook. The potential gaps in understanding of the mechanisms behind adolescent SNS use could explain the lack of correlations found between monitoring and HRIBs. SNS usage, particularly by adolescents, is characterized by social interdependence from a uniquely remote viewpoint<sup>4,5</sup>. While parental monitoring may have a direct protective effect on risky behaviors in traditional social settings, the effects of monitoring may impact social norms and behaviors typical to adolescent SNS use differently.

Furthermore, gaps in parental understanding of adolescent SNS use coupled with discrepancies on attitudes surrounding the Internet could contribute to the lack of significant findings<sup>35</sup>. Inventories of adolescent and parental attitudes concluded parents were significantly more anxious about the Internet compared to adolescents<sup>35</sup>. Furthermore, the same studies found adolescents did not feel nervous about online solicitation or uncomfortable when contacted by a

stranger on the Internet<sup>36</sup>. Because adolescents display vastly different attitudes about the dangers of the Internet, the effects of parental monitoring may be smaller on changing adolescent behaviors in this setting. Additionally, the relative ease in which adolescents can ‘hide’ their Internet and SNS activity may affect the relationship between parental monitoring and HRIBs.

### Differences in Methodology

This study is notable in that it takes an objective, scientific approach to quantifying adolescent Internet use, specifically SNS use. Currently, much of what is known about adolescent Internet use comes from self-report. As in the Kaiser Family’s report on “Media in the Lives of 8 – 18 Year Olds,” most existing information on adolescent Internet patterns comes from surveys<sup>1</sup>. This self-report adds an extreme source of bias to this information. By objectively looking at adolescent Facebook profiles and quantifying them through the use of a coding system, this study is unique in that it gathers unbiased information on a field in which little is objectively known. Furthermore, this study examines adolescent sexual behaviors on the popular SNS Facebook, the first study of its kind. Despite the widespread prevalence of Facebook, very little research has been done, and this study is the first to measure sexual content on Facebook without bias.

Compared to previous studies that focused on adolescent SNS and quantified sexual content<sup>9</sup>, this study focused solely on Facebook profiles. In addition, the HRIBs were identified directly and objectively from screenshots of the adolescents’ Facebook pages. Previous studies of HRIBs on adolescents’ SNS relied more on self-report to identify risky behaviors on the Internet<sup>9,10</sup>. However, the current study gathered all information on HRIBs objectively in the lab. Another major methodology difference that separates the current study is the identification and focus on a specific risk population. While most previous research focuses on ‘millennials<sup>34</sup>’ or

adolescents of a certain age group, the present study uses previous research to identify a population at high risk for HRIBs and tailor the data<sup>9,10</sup>.

The design may have played a role in the lack of significance of this studies versus similar previous studies<sup>9,10</sup>. The focus on high risk abused adolescents and matched controls may have affected the outcome of the study. Furthermore, as the first study to objectively quantify Facebook, the questions used to identify HRIBs were designed specifically for this study. As there is not yet a uniform coding system or questionnaire to examine HRIBs on Facebook, this methodological difference could have affected the statistical outcomes.

### Limitations and Implications

The study had several limitations. Some of the Facebook profiles were only coded for sexual content by two researchers, limiting the reliability of the scores. The low number of data entries for each Facebook profile could explain the lack of significant correlations found during data analysis. Additionally, only one time point of the adolescents' Facebook profiles was used in data collection. Looking at the Facebook profiles at more than one time point would have provided a more accurate estimate of sexual content on the profiles across a time period. Also, the Facebook profiles were only viewed as a screenshot; a single point in time. Often, physically visiting a Facebook profile allows the visitor to click around and gain additional information. Through using snapshots of Facebook profiles, information about sexual content and vulnerability was potentially lost.

The differences in HRIBs and effects of maternal attachment between abused and control females is important to note. T-tests between mean scores reflecting level of sexual content suggested abused adolescent females' Facebook profiles may contain greater levels of sexual content. Previous research concludes abused adolescent females are at greater risk of online

victimization than their non-abused counterparts<sup>9,10</sup>. Furthermore, evidence suggests higher levels of sexual content on an adolescents' SNS of choice also put them at greater risk of online victimization<sup>9,10,12</sup>. The present study suggests abused adolescents' Facebook profiles contain more sexual content. Coupled with the potentially detrimental impact of attachment on abused females, the results suggest abused adolescent females are at extreme risk for the negative effects of HRIBs.

The results of the study contribute significantly to our understanding of adolescent females and HRIBs on SNS. Because of the relatively novel nature of SNS, the present research is critical in opening up exploration for sexual behaviors on social networking sites. While there is an understanding that adolescents are at increasing danger while on the Internet from online predators, there is little knowledge about the risk and protective factors behind this phenomenon. Parental attachment and parental monitoring are two factors typically thought of as positive for adolescent adjustment. However, the present study suggests different factors than attachment and monitoring may be affecting adolescents' risky online behaviors. More research needs to be done to identify what adolescent groups are at particular risk and what factors could potentially buffer this risk. In order to develop more effective intervention strategies to protect adolescents from online risks, more research needs to be done surrounding high risk groups and protective factors.

## APPENDIX A

NOTE: \* = Question used in data analysis

1. Is the profile picture of the adolescent herself?
2. Is the profile picture sexually provocative in any way? \*
3. Does the profile picture displayed appear violent, threatening, or aggressive (i.e. is the adolescent making obscene gestures or holding a weapon)?
4. Does there appear to be a romantic partner in the picture with the adolescent?
5. Does the profile picture display any reference to alcohol or drinking?
6. Does the profile picture display any reference to smoking?
7. Does the profile picture display any reference to drugs?
8. The picture is displaying the adolescent's.....face, upper body, full body?
9. Are there sexually provocative and interesting photos of the adolescent herself? \*
10. Are there sexually provocative photos of others? \*
11. Are there pictures displayed that appear violent, threatening, or aggressive?
12. Are there pictures of any type of sexual activity (i.e. kissing, provocative dancing)? \*
13. Are there pictures that display any reference to alcohol or drinking?
14. Are there pictures that display any reference to smoking?
15. Are there pictures that display any reference to drugs?
16. Are there displays of any other forms of sexual profane content (i.e. posters containing profanity; references to pornography or violence)?
17. Does the text/content contain profanity?
18. Does it contain reference to sexual activity or nature? \*
19. Does the text/content reference aggression?

20. Does the text/content reference to drinking, smoking, alcohol, or drugs?
21. Does this section contain profanity?
22. Does the text/content reference violence or aggression?
23. Does this section contain reference to drinking?
24. Does this section contain reference to smoking?
25. Does this section contain reference to drugs?
26. Does this section have any mention of prosocial activities (i.e. sports, hanging out with friends, family, religion, etc.)?
27. Is the overall profile sexual in nature? \*
28. Using the scale below, what is the level of the adolescents' identity exposure in her profile (i.e. phone numbers, addresses, or any other personal information, places of work, names of schools)?
29. Are there other indications of vulnerability or suggesting that the adolescent might be willing to talk to strangers about her life or situation (i.e. I hate my parents; I'm so depressed; I'd love to chat with someone)?
30. Are there any indications that the adolescent is receiving sexual advances or involved in sexual chat (i.e. you are really sexy)? \*
31. What is the level of privacy settings?
32. Is any content visible on the wall (e.g., status updates, comments, photos)?
33. Are any photos (i.e. profile picture, album covers) posted by the adolescent visible?
34. Is the number of friends shown?

## BIBLIOGRAPHY

1. Rideout, Victoria J., Ulla G. Foehr, and Donald F. Roberts. "Generation M2: Media in the Lives of 8-18-Year-Olds." *The Henry J. Kaiser Family Foundation*. Kaiser Family Foundation, 1 Jan. 2010. Web. 1 Jan. 2015.  
<<http://files.eric.ed.gov/fulltext/ED527859.pdf>>.
2. Meier, Evelyn P., and James Gray. "Facebook Photo Activity Associated with Body Image Disturbance in Adolescent Girls." *Cyberpsychology, Behavior, and Social Networking* 17.4 (2014). *Mary Ann Liebert Online*. Web. 1 Jan. 2015.  
<<http://online.liebertpub.com/doi/pdfplus/10.1089/cyber.2013.0305>>.
3. Patchin, J. W., and S. Hinduja. "Trends in Online Social Networking: Adolescent Use of MySpace over Time." *New Media & Society* (2010): 197-216. *SAGE Journals*. SAGE. Web. 1 Jan. 2015. <<http://nms.sagepub.com/content/12/2/197.full.pdf.html>>.
4. Lenhart, A., and M. Madden. "Social Networking Websites and Teens: An Overview." *Pew Internet and American Life Project* (2007). Web. 1 Jan. 2015.  
<[http://www.pewinternet.org/pdfs/PIP\\_SNS\\_Data\\_Memo\\_Jan\\_2007.pdf](http://www.pewinternet.org/pdfs/PIP_SNS_Data_Memo_Jan_2007.pdf)>.
5. Brockman, L., Christakis, D., & Moreno, M. (2014). Friending adolescents on social networking websites: A feasible research tool. *Journal of Interaction Science*. Retrieved January 1, 2015, from <http://www.journalofinteractionscience.com/content/2/1/1>
6. Lenhart, A., Purcell, K., Smith, A., & Zickhur, K. (2010, February 3). Social Media and Young Adults. Retrieved January 1, 2015, from <http://www.pewinternet.org/2010/02/03/social-media-and-young-adults/>
7. Frison, E., & Eggermont, S. (2015). The impact of daily stress on adolescents' depressed mood: The role of social support seeking through Facebook. *Computers in Human Behavior*, 44. Retrieved January 27, 2015.
8. Athique, Adrian. "Pleasing Bodies." *Digital Media and Society: An Introduction*. Malden: Polity, 2013. 67+. Print.
9. Noll, J., Shenk, C., Barnes, J., & Haralsen, K. (2013). Association of Maltreatment With High-Risk Internet Behaviors and Of fl ine Encounters. *Journal of the American Academy of Pediatrics*. Retrieved from



<http://pediatrics.aappublications.org/content/early/2013/01/08/peds.2012-1281.full.pdf.html>

10. Noll, J., Shenk, C., Barnes, J., & Putnam, F. (2009). Childhood Abuse, Avatar Choices, and Other Risk Factors Associated With Internet-Initiated Victimization of Adolescent Girls. *Pediatrics*, E1078-E1083. Retrieved February 2, 2015, from NCBI.
11. Bobkowski PS, Brown JD, Neffa DR. Hit me up so we can get down. *J Child Media*. 2012;6(1):119–134
12. Mitchell, K., Ybarra, M., & Finklehor, D. (2007, November 12). The Relative Importance of Online Victimization in Understanding Depression, Delinquency, and Substance Use. *Childhood Maltreatment*. Retrieved from [http://cola.unh.edu/sites/cola.unh.edu/files/research\\_publications/CV132.pdf](http://cola.unh.edu/sites/cola.unh.edu/files/research_publications/CV132.pdf)
13. Kendler, K., Bulk, C., Silberg, J., Hettrema, J., Meyers, J., & Prescott, C. (2000, October). Childhood Sexual Abuse and Adult Psychiatric and Substance Use Disorders in Women: An Epidemiological and Twin Control Analysis. *JAMA Psychiatry*. doi:10.1001/archpsyc.57.10.953.
14. Finkelhor, D., & Browne, A. (1985, October). The Traumatic Impact of Child Sexual Abuse: A Conceptualization. *American Journal of Orthopsychiatry*.
15. Richardson, A., Weitz, W., & Gordon-Larsen, P. (2014, October). The association between childhood sexual and physical abuse with incident adult severe obesity across 13 years of the National Longitudinal Study of Adolescent Health. *Pediatric Obesity*, 9(5). doi:10.1111/j.2047-6310.2013.00196.x
16. Trickett, P., Noll, J., & Putnam, F. (2011, May). The impact of sexual abuse on female development: Lessons from a multigenerational, longitudinal research study. *Developmental Psychopathology*. doi:10.1017/S0954579411000174
17. Noll, J., Trickett, P., & Putnam, F. (2000, November). Social Network Constellation and Sexuality of Sexually Abused and Comparison Girls in Childhood and Adolescence. *Childhood Maltreatment*, 5(4). doi:10.1177/1077559500005004004
18. Oviedo-Joekes, E., Marchand, K., Guh, D., Marsh, D., Brissette, S., Krausz, M., & Anis, A. (2011, February). History of reported sexual or physical abuse among long-term heroin users and their response to substitution treatment. *Addictive Behaviors*, 36(1-2). doi:10.1016/j.addbeh.2010.08.020
19. Noll, J., Trickett, P., Harris, W., & Putnam, F. (2009, March). The Cumulative Burden Borne by Offspring Whose Mothers Were Sexually Abused as Children. *Journal of Interpersonal Violence*. doi:10.1177/0886260508317194

20. Kilpatrick, D., Acierno, R., Saunders, B., Resnick, H., Best, C., & Schnurr, P. (2000, February). Page 1 of 21 <http://spider.apa.org/ftdocs/ccp/2000/february/ccp68119.html> 8/30/2000 Risk Factors for Adolescent Substance Abuse and Dependence Data From a National Sample. *Journal of Consulting and Clinical Psychology*. Retrieved from <http://homepage.psy.utexas.edu/HomePage/Class/Psy394Q/Behavior%20Therapy%20Class/Assigned%20Readings/Substance%20Abuse/Kilpatrick2000.pdf>
21. Dowell, E., Burgess, A., & Cavanaugh, D. (2009, November). Clustering of Internet Risk Behaviors in a Middle School Student Population. *Journal of School Health, 79*(11). doi:10.1111/j.1746-1561.2009.00447.x
22. Noll, J., Shenk, C., & Kouril, M. (2012, May 7). CHMC IRB Research Plan: TechnoTeens: Youth and Media Use. Retrieved March 2, 2015.
23. Gullone, E., & Robinson, K. (2005, February). The Inventory of Parent and Peer Attachment—Revised (IPPA-R) for children: a psychometric investigation. *Clinical Psychology and Psychotherapy, 12*(1).
24. Dombrowski, S., LeMasney, J., Dickson, S., & Ahia, E. (2004). Protecting Children From Online Sexual Predators: Technological, Psychoeducational, and Legal Considerations. *Professional Psychology: Research and Practice, 35*(1). doi:0.1037/0735-7028.35.1.65
25. Ashcroft, J. (Ed.). (n.d.). Highlights: Child Victimization . In *OJJDP Research 2000*. N.p.: US Department of Justice. Retrieved from <https://www.ncjrs.gov/pdffiles1/ojjdp/186732.pdf>
26. Liau, A., Khoo, A., & Ang, P. (2008, August 13). Parental Awareness and Monitoring of Adolescent Internet Use. *Current Psychology*. doi: 10.1007/s12144-008-9038-6
27. Crouter, A. C., MacDermid, S. M., McHale, S. M., & Perry-Jenkins, M. (1990). Parental supervision and perceptions of children's school performance and conduct in dual- and single-earner families. *Developmental Psychology, 26*, 649–657.
28. Jacobson, K. C., & Crockett, L. J. (2000). Parental monitoring and adolescent adjustment: An ecological perspective. *Journal of Research on Adolescence, 10*, 65–97.
29. Trucco, E., Villafuerte, S., Heitzeg, M., Burmeister, M., & Zucker, R. (2015). Susceptibility effects of GABA receptor subunit alpha-2 (GABRA2) variants and parental monitoring on externalizing behavior trajectories: Risk and protection conveyed by the minor allele. *Development and Psychopathology*. doi:10.1017/S0954579415000255
30. Crockett, L. J., Bingham, C. R., Chopak, J. S., & Vicary, J. R. (1996). Timing of first sexual intercourse: The role of social control, social learning, and problem

behavior. *Journal of Youth and Adolescence*, 25(1), 89. Retrieved from <http://search.proquest.com/docview/204639120?accountid=13158>

31. Lei, L., & Wu, Y. (2007). Adolescents' Paternal Attachment and Internet Use. *Cyber Psychology and Behavior*, 10(5). doi:10.1089/cpb.2007.9976
32. Somers, C., & Paulson, S. (2000). Students' perceptions of parent–adolescent closeness and communication about sexuality: relations with sexual knowledge, attitudes, and behaviors. *Journal of Adolescence*, 23. doi:10.1006/jado.2000.0349
33. Whibeck, L., Hoyt, D., Miller, M., & Kao, M. (1992, December). Parental Support, Depressed Affect, and Sexual Experience Among Adolescents. *Youth and Society*, 24(2). Retrieved from <http://yas.sagepub.com/content/24/2/166.full.pdf>
34. Cooper, A. (1998). Sexuality and the Internet: Surfing Into the New Millenium. *Cyber Psychology and Behavior*, 1(2). doi:10.1089/cpb.1998.1.187
35. Liau, A., Khoo, A., & Ang, P. (2008, August 13). Parental Awareness and Monitoring of Adolescent Internet Use. *Current Psychology*. doi:10.1007/s12144-008-9038-6
36. Lenhart, A., & Madden, M. (2007). Teens, privacy & online social networks: How teens manage their online identities and personal information in the age of MySpace. Washington, DC: Pew Internet & American Life Project. Retrieved from [http://www.pewinternet.org/PPF/r/211/report\\_display.asp](http://www.pewinternet.org/PPF/r/211/report_display.asp).

## ACADEMIC VITA

Kirsten Knauer  
3801 Forest Hill Drive, Furlong, PA 18925 ~ knk5135@psu.edu

---

### **EDUCATION: The Pennsylvania State University**

Bachelor of Science in Biobehavioral Health  
Schreyer Honors Scholar

### **RESEARCH EXPERIENCE:**

#### **The Huck Institute of the Life Sciences**

Research Intern

University Park, PA

January 2013-May 2013

The Huck Institute fosters quality interdisciplinary research in the life sciences at Pennsylvania State University.

Inserted field data into computer programs and performed data analysis.

Worked in both field and laboratory settings.

#### **Prevention Research Center**

Research Intern

University Park, PA

January 2014-present

The Center for Health Promotion conducts quality interdisciplinary research focused on preventing negative health outcomes.

Studied effects of sexual assault on high-risk Internet behaviors in adolescent females.

Conducted computer program based naturalistic research on Internet use patterns.

Analyzed data to identify risk factors and develop effective intervention programs.

### **ASSOCIATION MEMBERSHIPS/ACTIVITIES**

#### **Alpha Phi Fraternity**

Director of Philanthropy

THON Chair-Family Relations Chair

September 2011-present

### **AWARDS:**

Dean's List 2011-2014

National Merit Scholar 2011