

Maybe you should blame your parents: Parental attachment, gender, and problematic Internet use

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Background and aims: Prior research has generally established parental attachment as a predictor of problematic Internet use (PIU). However, findings across studies are inconsistent as to which factor(s) of attachment style (i.e., attachment anxiety and attachment avoidance) contributes to PIU. Another gap in the literature is that as most studies highlight the importance of maternal (over paternal) attachment security in inhibiting PIU, little research has examined the possibility of a gender difference, where maternal and paternal attachment securities may exert different influences on males and females. *Methods:* An anonymous survey was completed by 243 undergraduate students in a public university in the U.S. Midwest. In addition to demographic information, the survey contained measurement scales to assess PIU and parental attachment (both maternal and paternal). *Results:* Survey data show that (a) attachment anxiety, but not attachment avoidance, is significantly related to PIU and (b) gender significantly moderates this relationship, where paternal attachment anxiety leads to PIU in female students while maternal attachment anxiety contributes to PIU in male students. *Conclusions:* This study deepens our understanding in the relationship between family upbringing, particularly parental attachment, and PIU. More specifically, attachment anxiety is found to be a significant predictor of PIU, but attachment avoidance is not. Also, contributing to the research literature is the finding of a significant gender effect in this relationship.

Keywords: problematic Internet use, Internet addiction, attachment style, gender

INTRODUCTION

Problematic Internet use (PIU) refers to behaviors and cognitions associated with Internet use that results in negative personal and professional consequences for the user (Davis, 2001). Prior PIU research has investigated user characteristics such as personality traits (Jia, 2012; Landers & Lounsberry, 2006) as well as environmental factors such as upbringing and family environment. One set of studies in the latter stream has examined PIU through the lens of attachment theory (e.g., Chang et al., 2015; Lin, Ko, & Wu, 2011).

During the past few decades, attachment theory (Bowlby, 1969, 1973, 1980, 1982) has become one of the leading theoretical frameworks for understanding social development, personality processes, and close relationships (Fraley, Heffernan, Vicary, & Brumbaugh, 2011). The theory focuses on the nature of a child's tie to his or her caregivers and its impact on the child's personality, lifestyle, and subsequent adjustment throughout the course of the child's life (Bowlby, 1969; Fraley et al., 2011). More specifically, the quality of a child's attachment shapes the child's beliefs regarding the responsiveness and trustworthiness of others (Zeinali, Sharifi, Enayati, Asgari, & Pasha, 2011) and determines the level of security with which that child explores the world, and these early relationships form the models from which future relationships in adolescence and

adulthood are developed (Bowlby, 1969; Jenkins-Guarnieri, Wright, & Hudiburgh, 2012). That is, a child who is cared for in a responsive and consistent fashion develops the expectation that others will be available and supportive when needed (Ainsworth, Blehar, Waters, & Wall, 1978; Fraley et al., 2011; Jenkins-Guarnieri et al., 2012). In contrast, those raised in a negligent or rejecting manner will form negative expectations regarding interpersonal relationships and social interactions (Zeinali et al., 2011). Research has shown that attachment style influences personality traits (Nofle & Shaver, 2006) and many forms of interpersonal behaviors and competencies from satisfaction in romantic love, friendships, and emotional functioning (Fraley & Shaver, 2000) to interpersonal communication and social behavior (Kenny & Rice, 1995).

Attachment theory has also informed that our understanding of PIU as parental attachment insecurity has been established as a predictor (Chang et al., 2015; Lin et al., 2011). However, findings across different studies are often-times inconsistent or inconclusive. For example, attachment style has been conceptualized as consisting of two

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orthogonal factors: attachment anxiety and attachment avoidance (Brennan, Clark, & Shaver, 1998). The former factor reflects how intensely relational or environmental stressors activate attachment needs, and the latter factor refers to a person's (lack of) desire for closeness in important relationships (Jenkins-Guarnieri et al., 2012). A review of the existing research suggests that it is not clear which factor(s) contributes to PIU. While some studies found attachment anxiety to be the only significant factor (Schimmenti, Passanisi, Gervasi, Manzella, & Fama, 2014; Senormanci, Senormanci, Guclu, & Konkan, 2014), others found attachment avoidance to be the only significant one (Khosroshahi & Nosrat Abad, 2012), and still others found both to be relevant (Shin, Kim, & Jang, 2011).

We expect anxiously attached individuals to exhibit higher levels of PIU because attachment anxiety is associated with hyperactivating strategies (e.g., being overly dependent on others; Mikulincer & Shaver, 2005), which lead those individuals to seek comfort and a sense of belongingness online. Since attachment avoidance is associated with deactivating strategies (e.g., denying the importance of relationships and avoiding emotional intimacy; Mikulincer & Shaver, 2005), it is less likely to contribute to PIU, at least not in adolescents and young adults, whose problematic use is often associated with socially oriented activities, such as online chats (Jia & Jia, 2009).

There are also other unanswered questions. For example, though some research suggests that unfavorable mother-adolescent relationships contribute more to PIU than unfavorable father-adolescent relationships (Xu et al., 2014) or otherwise highlight the importance of maternal influence (Huang et al., 2010), much research in this area has either relied on samples with mostly male subjects or did not examine the possibility of a gender difference in how parental attachment influences PIU. In other words, it is not at all clear whether the importance of maternal (over paternal) attachment in inhibiting PIU is applicable to problematic users of both genders, or only to males, who happen to often dominate the samples in these studies.

There are reasons to believe that paternal attachment also plays a role. Though mothers likely serve as the primary caregivers during early childhood, the influence of fathers on children's development and adjustment becomes increasingly significant as the children approach adolescence (Lei & Wu, 2007). The importance of paternal influence is also emphasized in psychoanalytic theory (Chodorow, 1978; Washburn, 1994), which postulates that both the gender of parents and the gender of children contribute to parent-child relationships, and that mothers and fathers play different roles, and gender differences in children are central to the account. Therefore, the quality of paternal attachment is likely important too, and we need to take the children's gender into consideration in addition to the parent's gender, that is, the gender of each member of the dyad (Emmanuelle, 2009). In other words, it is necessary to examine both same-sex and opposite-sex dyads to see whether parental attachment works in different ways for males and females exhibiting PIU.

In sum, this study sought to answer the following two research questions:

1. Do both factors of attachment style (i.e., attachment anxiety and attachment avoidance) predict PIU?

2. Does maternal attachment insecurity contribute to PIU in males the same way as it does in females?

METHODS

Participants and procedure

An anonymous survey was completed by 243 undergraduate students, including 141 males (58%) and 102 females (42%), in a public university in the U.S. Midwest. The average participant was 21.50 years of age ($SD = 1.50$), and all described themselves as using the Internet "frequently" or "very frequently."

The participants were informed that the objective of this study was to investigate the relationships between individual characteristics and Internet usage patterns. The survey was distributed and completed in class. Students received extra course credits for their participation.

Measures

In addition to demographic questions, the survey included the measures for parental attachment and PIU, with all items using 7-point Likert-type scales from "Strongly Disagree (1)" to "Strongly Agree (7)."

Parental attachment was assessed with the Experiences in Close Relationships-Relationship Structures questionnaire (Fraley et al., 2011), which consists of scales for attachment anxiety (3 items) and attachment avoidance (6 items). The scales exhibit satisfactory psychometric properties (Fraley et al., 2011), and their Cronbach's α values range from .81 to .90 in this study. Two sample items are "I usually discuss my problems and concerns with [my mother/father]" and "I often worry that [my mother/father] doesn't really care for me." Each item was used twice to separately assess the participants' maternal and paternal attachments. (Maternal attachment avoidance: Mean = 5.30, $SD = 1.53$, $\alpha = .90$; paternal attachment avoidance: Mean = 4.80, $SD = 1.69$, $\alpha = .90$; maternal attachment anxiety: Mean = 1.77, $SD = 1.20$, $\alpha = .81$; and paternal attachment anxiety: Mean = 1.98, $SD = 1.42$, $\alpha = .83$.)

PIU was assessed with a 7-item scale from the Problematic Internet Usage Questionnaire (Jia & Jia, 2009). The measure was developed using confirmatory factor analysis and demonstrated satisfactory internal consistency in subsequent research (Shi, Chen, & Tian, 2011, $\alpha = .87$) as well as in this study ($\alpha = .84$, Mean = 2.84, $SD = 1.19$). Sample items include "When I am not online, I often think about the Internet" and "I feel helpless when I don't have access to the Internet."

Descriptive statistics, scale reliability, and correlation matrix are presented in Table 1. Scale scores were computed by averaging item scores.

Ethics

The study procedures were carried out in accordance with the Declaration of Helsinki. The Institutional Review Board at Southern Illinois University (the first author's former university) approved the study. All subjects were informed about the study and provided informed consent. All subjects were over 18 years of age.

Table 1. Descriptive statistics, scale reliability, and correlation matrix

Variable	Mean	SD	α	1	2	3	4
1 PIU	1.65	0.35	.84				
2 Avoidance (mother)	5.30	1.53	.90	-.050			
3 Avoidance (father)	4.80	1.69	.90	-.093*	.534***		
4 Anxiety (mother)	1.77	1.20	.81	.359***	-.413***	-.148**	
5 Anxiety (father)	1.98	1.42	.83	.386***	-.184**	-.460***	.664***

* $p < .1$, ** $p < .01$, *** $p < .001$.

RESULTS

Ordinary least squares regression was used to analyze the survey data. Since the largest variance inflation factor values for all independent variables in all regression equations is 3.3, which is far below the threshold of 10 (Neter, Kutner, Nachtsheim, & Wasserman, 1996), multicollinearity is not likely an issue. Requirements for normal distribution were met after a square-root transformation of the dependent variable (PIU). A non-significant Shapiro–Wilk test result supported its normality after the transformation ($statistic = .994$, $significance = .427$).

We first analyzed data from the entire sample. To examine the relationship between parental attachment and PIU, gender was first entered into the regression equation. Results in Table 2 show that males are more likely to exhibit PIU ($p < .001$). Controlling for gender, both maternal and paternal attachment anxieties significantly predict PIU (both $p < .05$). However, neither maternal nor paternal attachment avoidance is a significant predictor.

To further investigate the gender difference, separate regressions were estimated for male and female participants. As shown in Table 2, attachment anxiety with mother is the only significant predictor of PIU in male students. For female students, however, it is attachment anxiety with father that is the only significant predictor.

DISCUSSION

As a leading theoretical framework in developmental, personality, and social psychology (Fraley et al., 2011), attachment theory has also informed research in PIU. While parental attachment insecurity has been established as a predictor of PIU, there have been inconsistent or

inconclusive results in the literature. For example, it is not clear whether both the two factors of attachment style contribute to PIU. In addition, it is not clear whether maternal attachment insecurity contributes to PIU in males the same way as it does in females. This study aimed to address the above two gaps in the literature.

Data from a sample of college students showed that, between the two factors of attachment style, while attachment anxiety (both maternal and paternal) significantly predicts PIU, attachment avoidance (neither maternal nor paternal) does not. This is in keeping with our expectations because anxiously attached individuals are more likely than avoidantly attached ones to seek social interactions online, which is a known symptom of PIU among college students (Jia & Jia, 2009).

To explore whether attachment anxiety affects PIU in different ways for the two genders, we analyzed data from males and females separately and found supporting evidence. Contrary to prior studies highlighting the importance of maternal attachment in inhibiting PIU presumably in both genders, we found that while maternal attachment anxiety is a significant predictor for male problematic users, it is paternal attachment anxiety that is relevant to their female counterparts. These results highlight the role that opposite-gender parents play in child development as well as the consequences for its inadequacy. Also demonstrated in these findings is the need to explicitly investigate gender difference in this area of research (Schimmenti et al., in press). Treating all subjects as one homogeneous group can lead to misleading results.

These results are not surprising since most prior studies either did not examine paternal influence or relied on samples consisting of predominately male subjects. Another factor that may have contributed to the varied findings is the difference in sampling frames – while many prior studies used samples of adolescents from Asian countries; data for

Table 2. Hierarchical regression results for PIU

Predictor	Overall sample ($N = 243$)						Male ($n_1 = 141$)			Female ($n_2 = 102$)		
	b	SE	t	Significance	ΔR^2	Total R^2	b	t	Significance	b	t	Significance
1 (Constant)	1.714	0.029	59.68	.000								
Gender	-0.150	0.044	-3.41	.001	.046	.046						
2 (Constant)	1.295	0.100	13.01	.000			1.384	10.82	.000	0.994	5.74	.000
Gender	-0.127	0.043	-2.96	.003			-	-	-	-	-	-
Avoidance (mother)	0.032	0.021	1.56	.119			0.035	1.25	.213	0.032	1.03	.304
Avoidance (father)	0.002	0.019	0.084	.933			-0.021	-0.744	.458	0.034	1.40	.164
Anxiety (mother)	0.067	0.030	2.28	.023			0.093	2.43	.017	0.015	0.30	.762
Anxiety (father)	0.057	0.026	2.21	.028	.158	.204	0.032	0.91	.367	0.107	2.89	.005

this research were gathered from college students in the U.S., where parental roles and attachment patterns may differ from those in Asia. The slightly older mean age of the subjects in this study may also be a factor since attachment patterns evolve during different stages of children's development (Lei & Wu, 2007).

CONCLUSIONS

As one of the first studies that comprehensively examine how parental attachment influences PIU, this research will contribute to a deeper understanding of the varying impacts of the two dimensions of attachment style and the gender difference in how maternal and paternal attachments can predict PIU in males and females. However, it is important to acknowledge that cross-sectional studies like this one do not establish causality. Though the sample size is sufficient for the analyses in this study, it is admittedly not large. Possible confounding factors such as neuroticism should also be controlled in future work. We certainly need follow-up research to replicate these findings and examine the influence of possible moderating and mediating variables to achieve a deeper understanding of the phenomenon. It is our hope that this study stimulates further advancement in this area of work.

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