

## ANTECEDENTS AND IMPACT OF INTERNET ADDICTION AMONG INDIAN COLLEGE STUDENTS IN KERALA, INDIA

Smitha P. Abraham<sup>1</sup>

Robert Ho<sup>2</sup>

**Abstract:** The present generation of Indian adolescents relies heavily on the Internet which has become an integral part of every Indian college student's daily routine. As with other developing countries, adolescents and college students in India are dependent on the Internet for both educational and non-educational purposes. Not surprisingly then, Internet addiction has become an increasingly serious societal problem but one which unfortunately has attracted little or no research interest within the Indian context. The present study has been designed to address this issue by investigating how Internet addiction-related behaviors may vary as a function of Indian college students' perception of their parents' parenting styles and their emotive states (depression, anxiety, stress), and subsequently, how such Internet addiction-related behaviors may influence their well-being (psychological well-being, loneliness, and academic performance). Overall, the findings from the present study indicate that the parenting styles of mothers and fathers in Kerala, India have differential influences on their children's psychological well-being, academic performance, and loneliness. The implications of these findings are discussed with reference to the cultural nuances and parameters that circumscribe the Indian college student's family life.

**Keywords:** Parenting Styles, Depression, Anxiety, Stress, Internet Addiction, Psychological Well-Being, Loneliness, Academic Performance & College Students

### Introduction

The explosive growth of Internet use on college and university campuses over the past two decades can be traced to its ability to aid education in a positive way by increasing communication with classmates and professors, increasing access to libraries and educational databases, and improving study hours and study habits (Suhail & Bargees, 2006). Yet, despite these benefits, researchers have maintained that their excessive use of and dependence on the Internet have resulted in college students being particularly at risk for developing Internet addiction. Peele and Brodsky (1992) argued that college students find the internet so addictive because it "gives them feelings and gratifying sensations that they are not able to get in other ways; additionally, it provides an artificial, temporary feeling of security or calm, of

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<sup>1</sup> Ph.D. Candidate in Counseling Psychology, Graduate School of Psychology, Assumption University, Thailand.  
jyothis.palackal@gmail.com

<sup>2</sup> Ph.D., Associate Professor, Graduate School of Counseling Psychology, Assumption University, Thailand.  
tack.kwei@gmail.com

self-worth or accomplishment, of power and control, or intimacy or belonging” (p.43). For university students, the cycle of positive feelings and reinforcement provided by the Internet strengthens their dependency on and, ultimately, their addiction to it.

#### *Parenting styles and Internet addiction*

Numerous studies have pointed to the role of parental involvement in children’s media consumption. In particular, Lwin, Andrea, Stanaland, and Miyazaki (2008) have argued that parenting styles significantly affect children’s Internet use. Baumrind (1991) identified four patterns of parenting styles based on the two aspects of parenting behavior of control and warmth. ‘Parental control’ refers to the degree to which parents manage or control their children’s behavior by setting either too many or too few rules and demands whereas ‘parental warmth’ refers to the degree to which parents are accepting of and responsive to their children’s behavior as opposed to being unresponsive and rejecting. The factorial combination of these two aspects of parenting behavior yields the following four primary parenting styles: (a) authoritative, (b) authoritarian, (c) permissive, and (d) uninvolved (neglectful) (Baumrind, 1991). ‘Authoritative parenting’ reflects the most positive style of parenting; it is a parenting style which is characterized by both demanding and responsive caregiving. The parents provide clear standards for their children’s behavior and use consistent supportive discipline. ‘Authoritarian parenting’ style is characterized by high parental demandingness, structured environments, and low parental responsiveness. Authoritarian parents are obedience-oriented with low participation of their children in decision-making. ‘Permissive parenting’ style is characterized by more responsiveness than demandingness for the sake of avoiding confrontation. Permissive parents use inconsistent discipline, do not emphasize mature behavior, and let their children self-regulate. An ‘uninvolved or neglecting parenting’ style is typified by parents who are neither demanding nor responsive. Uninvolved parents are not warm and do not place any demands on their children. They do not monitor or provide support to their children and may neglect child rearing responsibilities altogether (Baumrind, 1991).

Past studies that have investigated the association between parenting styles and Internet usage among children have shown that parenting styles significantly affect the extent of child Internet usage (e.g., Rosen, Cheever, & Carrier, 2008). Valcke, Bonte, De Wever, and Rots (2010) found that the highest level of Internet usage among children is associated with a permissive parenting style, while the lowest level of usage is associated with an authoritarian parenting style. These findings are consistent with those obtained by Lwin and his colleagues (2008) which showed that a parenting style typified by a high level of control and demandingness results in lower levels of Internet usage among children. While these findings point to the relationship between parenting styles and children’s Internet use, there is limited research that examined the influences of such parenting styles on college students’ Internet usage. Bearing in mind that parents have been under increasing pressure to deal with their children’s/adolescents’ problems associated with excessive Internet usage (Eastin, Greenberg, & Hofschire, 2006), research on parental influence in the new media environment is indeed timely, appropriate, and important. This is particularly so as little is known about the correlates, both positive and negative, of

excessive Internet use among a cohort of Internet users – college students – who are considered to be most susceptible to the high risk behavior of Internet addiction.

#### *Depression, anxiety, stress, and Internet addiction*

The present study incorporated the psychological/emotive factors of depression, anxiety, and stress in a hypothesized process model in order to investigate their hypothesized mediating effects on Internet addiction. While the relationships between Internet addiction and social, educational, and physical-oriented deficits have received extensive scholarly attention, documenting its associations with emotive variables such as depression, anxiety, and stress has received less research attention. Moreover, while there have been a number of studies which investigated parenting styles and their relationship with psychological well-being (e.g., Steinburg, Lamborn, Dornbusch, & Darling, 1992), loneliness (e.g., Grabill & Kerns, 2000), and academic performance (e.g., Chou, & Hsiao, 2000), there have been no studies to date that examined the indirect influences of parenting styles on Indian college students' levels of psychological well-being, academic performance, and loneliness, being mediated by their levels of depression, anxiety, and stress, as well as the extent of their Internet addiction.

#### *Parenting styles, depression, anxiety, and stress*

Past studies that examined the impact of parenting styles on depression have shown that emotional warmth and understanding, precipitated by an authoritative style of parenting, is negatively correlated with children's reported level of depression (Lu & Lu, 2008). In addition, it has been demonstrated that adolescents from authoritative homes report less depressive symptoms and exhibit less antisocial behaviors such as drug use and delinquency (Steinburg et al., 1994). Children and adolescents whose parents reportedly provide clear and consistent guidelines have high expectations, uphold rules for their behaviors, and report fewer depressive and other internalizing symptoms (Grolnick et al., 1991; O'Donnell & Grolnick, 2004). In contrast, numerous studies have shown that children of authoritarian parents are at a higher risk for depression. For example, it was found that adolescents who experienced an authoritarian or neglectful style of parenting from either their mothers or fathers reported scoring higher on depression than those who experienced an authoritative style of parenting from their parents (Milevsky et al., 2007; Patock-Peckham & Morgan-Lopez, 2006).

The style of parenting also influences children's anxiety level with past studies showing that authoritative parenting is related to the development of more positive student characteristics such as high self-esteem, high academic achievement, and less anxiety. More specifically, findings from past studies indicated that adolescents from authoritative homes exhibit low depressive and anxious symptoms, high self-esteem, and high self-reliance (Steinburg et al., 1994; Steinburg et al., 1992). Parker (1979) compared the 'remembered' parenting style of college students' mothers and fathers. Data were analyzed in relation to responses on a trait anxiety and depression measure as well as the Parental Bonding Instrument (PBI). Adults who remembered their mothers as being caring yet not overprotective had the lowest depression and anxiety

scores. In contrast, participants who perceived their mothers as low in care and high in overprotection had the highest anxiety and depression scores.

De Man (1988) showed that excessive parental control is associated with high levels of stress. Wintre and Yaffe (2000) found that an authoritarian parenting style resulted in perceived stress and increased depression among college students. Researchers have argued that the authoritarian parenting style causes or produces stress in children because the authoritarian parent exerts excessive power and control over the child and maintains high expectations which may or may not be reasonable (Preethi & Rosa, 2012). It has been documented that children of authoritarian parents are more likely to be stressed, unhappy, withdrawn, and inhibited; additionally, they display poor communication skills, are less self-assured and less socially adept (Daniels, 2009).

#### *Depression, anxiety, stress, and psychological well-being*

Past research findings on the association between the emotive factors of depression, anxiety, and stress and psychological well-being have consistently pointed to significant negative relationships among these factors. For example, Kemp, Adams, and Campbell (1997) conducted a study among aging post-polio survivors to examine the relationship between depressive symptoms and life satisfaction, and found that those people with post-polio syndrome scored significantly higher on depression and lower on life satisfaction. Similarly, a significant negative association between depression and life satisfaction was found in studies conducted among care givers (Haley, LaMonde, Han, Burton, & Schonwetter, 2003), Northern Irish adults (Lewis, Dorahy, & Schumaker, 1999), and a sample of Newcastle University students (Saunders & Roy, 2000). Of particular interest is the finding that the absence of anxiety and depression are of crucial importance for the maintenance of life satisfaction in the life span of men (Manfred, Heide, Jorg, Hanna, & Elmar, 2010).

#### *Depression, anxiety, stress, and academic performance*

There is ample research evidence to support the assumption that depressive mood, feelings of anxiety and stress are related to academic problems or low academic achievement. Ang and Huan (2006) conducted a longitudinal study with students and found that academic achievement is significantly correlated with depression; more specifically, they found that depressed children had more academic problems than their non-depressed counterparts at the time of their study and two years later. The authors suggested that “children who experienced academic difficulties in school often received negative feedback regarding their academic performance and, consequently, developed depressed feelings” (p. 135). Investigating the causes of poor academic achievement, Eremsoy and colleagues (2005) found that depressive students have more maladaptive cognitions which make them vulnerable to negative mood states including depression, and that students who are prone to depression are more likely to activate negative automatic thoughts which reinforce further depressive underlying beliefs and assumptions. As negative thoughts become more severe, the level of depression increases and adversely affects academic activities. This was confirmed by Ruthig, Haynes, Stupnisky, and Perry (2009) who showed that the first year of college presents numerous challenges that are often experienced

as overwhelming by freshmen who may become overly stressed and depressed; poor psychological health marked by high perceived stress and depression impeded these students' academic achievement.

#### *Depression, anxiety, stress, and loneliness*

Depression and loneliness have been shown to be two interrelated constructs; indeed, research findings are clear-cut as to the positive relationship between these two. For example, Russell, Cutrona, de la Mora, and Wallace (1997) and Adams, Sanders, and Auth (2004) investigated the association between depression and loneliness and found strong correlations ranging from 0.48 to 0.65. Consistent with these findings, Alpass and Neville (2003) reported a significant association between depressive symptoms and loneliness among 217 older men in New Zealand; Hagerty and Williams (1999) demonstrated a significant association between depressive symptoms and loneliness in a sample of patients with major depressive disorders after controlling for social support, social conflict, and sense of belonging; Russell, Cutrona, Rose, and Yurko (1984) found a significant positive correlation between depression and social loneliness; in a similar vein, Hagerty and Patusky (1995) found depression to be best predicted by emotional loneliness. According to Allen and Badcock (2003), depressed states evolve to minimize risk in social interactions in which an individual perceives their social value to be low, relative to their social burden. According to this formulation, depressive symptoms may cause people to reduce their social activities or impair the quality of these activities, thereby elevating the person's feelings of loneliness. Individuals with high level of depression tend to adopt negative and distorted views of themselves and the world around them, which may result in social avoidance behaviors and the poor fostering of interpersonal relationships (Cecen, 2008). Individuals experiencing depression also tend to experience a wide range of interpersonal problems such as increased dependency in relationships, excessive support-seeking, insecure attachment styles, and withdrawal (Joiner, 2000).

In summary, there is clear evidence gleaned from the above review to support the association between parenting styles and the emotive factors of depression, anxiety and stress, and their sequential effects on psychological well-being, academic performance, and loneliness, particularly among students. However, this evidence is typically piecemeal in nature in which the sequential effects of parenting styles → emotive factors (depression, anxiety, stress) → outcomes (psychological well-being, academic performance, loneliness) were tested in stages rather than in a sequential mediation model. While the piecemeal nature of these past studies does inform us of the relationship between (1) parenting styles and outcomes, (2) parenting styles and emotive factors, and (3) emotive factors and outcomes, the methodology does not offer a direct test of the sequential effects hypothesized to operate between the exogenous variables of parenting styles, the mediator emotive factors of depression, anxiety, and stress, and the criterion variables of psychological well-being, academic performance, and loneliness. In other words, in order to obtain a clearer understanding of the effects of parenting styles on student outcomes, both the direct and indirect effects (being mediated by the hypothesized emotive factors) of

parenting styles on the criterion outcome variables must be investigated simultaneously in a path mediation model.

Figure 1 presents the hypothesized mediation model in which the three parenting styles – authoritative, authoritarian, permissive – are hypothesized to be both *directly* and *indirectly* associated with the three criterion variables of psychological well-being, academic performance, and loneliness, being mediated by (1) the three emotive factors of depression, anxiety, and stress, and (2) Internet addiction. Based on the accumulated research evidence on the relationship between parenting styles, depression, anxiety, stress, and Internet addiction and the criterion variables of psychological well-being, academic performance, and loneliness, it was hypothesized that Indian college students' reported parenting styles would have indirect relationships with their levels of psychological well-being, academic performance, and loneliness such that (a) the more authoritative and permissive their reported parenting styles, the lower their reported levels of anxiety, stress, and depression and, subsequently, the lower their reported level of Internet addiction; the lower their reported level of Internet addiction, the higher their reported levels of psychological well-being and academic performance, and the lower their reported level of loneliness, and (b) the more authoritarian their reported parenting style, the higher their reported levels of stress, anxiety, and depression and, subsequently, the higher their reported level of Internet addiction; the higher their reported level of Internet addiction, the lower their reported levels of psychological well-being and academic performance, and the higher their reported level of loneliness.

(See Figure 1 on the next page)

## Method

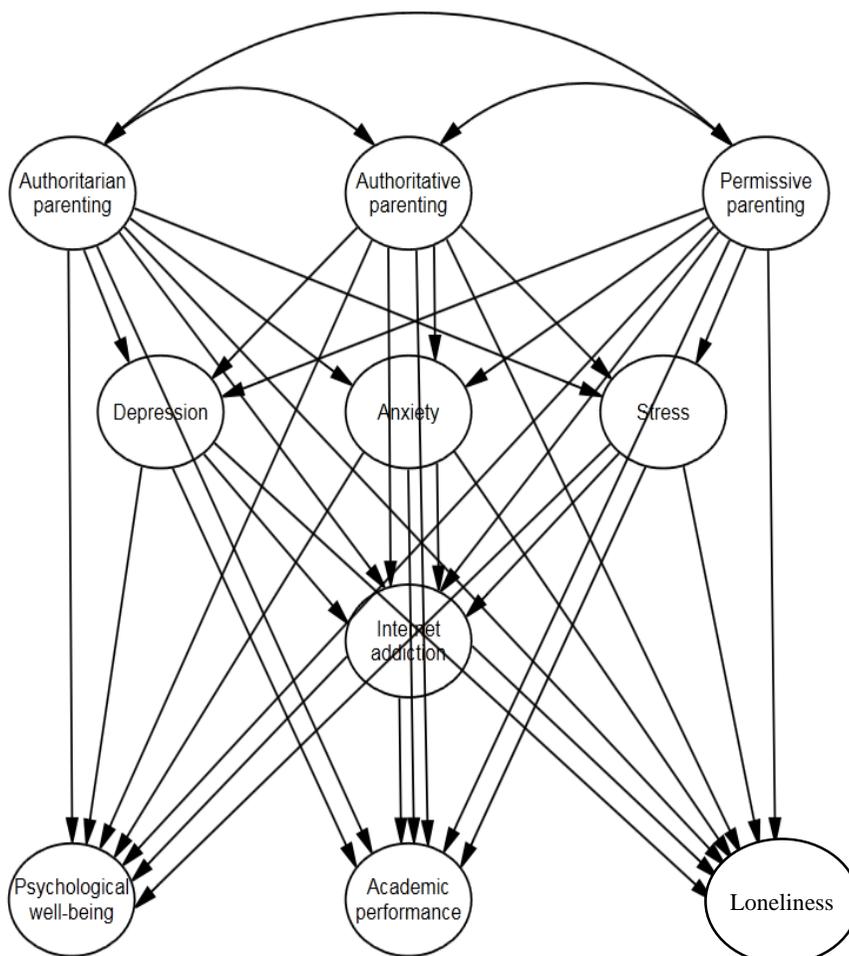
### *Participants*

The participants of the study consisted of 1,200 college level students (male:  $n=533$ , 44.4%; female:  $n=667$ , 55.6%) from Kannur University in Kerala state, India who were at the time of the study pursuing either a Bachelor's degree or a Master's degree in one of the colleges administered by the university. Their ages ranged from 18 to 25 years, with a median age within the range of 18 to 21 years. The participants were obtained by convenience sampling.

### *Materials*

The study employed a six-part self-administered survey questionnaire. Part 1 of the questionnaire was designed by the researcher to tap the participant's gender, age, educational level, and GPA of the previous semester.

Part two consisted of the 60-item Parental Authority Questionnaire (PAQ), developed by Buri (1991) to measure parenting styles from the participant's point of view. The development of the PAQ was based on Baumrind's (1991) typology of authoritative, authoritarian, and permissive factors and consisted of separate evaluations of mother's (30 items) and father's (30 items) parenting styles. Each of the 60 items is to be scored on a 5-point Likert-type scale ranging from 1 = Strongly



**Figure 1: Mediation Model Showing The Hypothesized Indirect Relationships between The Three Parenting Styles and The Dependent Variables of Psychological Well-Being, Academic Performance, and Loneliness, Being Mediated by Depression, Anxiety, Stress, and Internet Addiction**

disagree to 5 = Strongly agree, with high scores indicating high recognition by the participant of the parenting style of each parent as being authoritative, authoritarian, or permissive. Thus, the scale yields parenting style scores for the following six categories: (a) mother's authoritativeness, (b) mother's authoritarianism, (c) mother's permissiveness, (d) father's authoritativeness, (e) father's authoritarianism, and (f) father's permissiveness.

Part three consisted of the Depression Anxiety and Stress Scale (DASS-21) which is a 21-item self-report measurement of depression, anxiety, and stress, developed by S. H. Lovibond and P. F. Lovibond (1995). The DASS-21 consists of three subscales designed to provide relatively pure measurements of the three interrelated negative affective states of depression, anxiety, and stress (Lovibond, P.

F. & Lovibond, S. H., 1995; Lovibond, S. H. & Lovibond, P. F., 1995). Each subscale is composed of seven items written to tap negative affective symptoms experienced over the past week. Each item is to be scored on a 4-point Likert-type scale ranging from 0 = Did not apply to me at all to 3 = Applied to me very much, or most of the time.

Part four consisted of the new Internet Addiction Scale (IAS) (developed by the first author as part of her doctoral thesis) for use within the Indian context and comprised 46 item statements selected from Young's (1998) Internet Addiction Test (IAT) (12 items), Caplan's (2002) Generalized Pathological Internet Use Scale (GPIUS) (17 items), and Davis et al.'s (2002) Online Cognition Scale (OCS) (17 items). Selection of the items was based on (1) the current study's definition of Internet addiction, (2) a thorough literature review of the topic of Internet addiction, and (3) theories on Internet addiction, specifically Young's (1996) impulse control disorder model and Davis's (2001) cognitive-behavioral model. While each item is to be rated on a 5-point Likert-type scale, the categories of the rating scale were slightly altered to suit the item statements from the IAT, GPIUS, and OCS. Operationally, of the 46 items, the first 29 items were assigned the following rating categories: 1 = Rarely; 2 = Occasionally; 3 = Frequently; 4 = Often; and 5 = Always, whereas the remaining 17 items were assigned the following: 1 = Strongly disagree; 2 = Moderately disagree; 3 = Neutral; 4 = Moderately agree; and 5 = Strongly agree. Higher scores indicate higher level of Internet addiction. It should be noted that the newly developed Internet Addiction Scale yields the three Internet addiction motives of excessive use, mood alteration, and obsessive thoughts.

Part five consisted of Satisfaction with Life Scale (SWLS) developed by Diener, Emmons, Larsen, and Griffin (1985) to tap the cognitive-judgmental aspects of general life satisfaction. Each item is to be scored between 1 = Strongly disagree and 7 = Strongly agree, with high scores reflecting more satisfaction with life.

Part six of this study's survey questionnaire comprises the Revised UCLA Loneliness Scale (RULS) – a short version of the UCLA (University of California, Los Angeles) Loneliness Scale revised by Russell, Peplau, and Cutrona (1980) to assess subjective feelings of loneliness or social isolation. This widely used instrument is a 20-item self-reporting measure of global/general feeling of loneliness (Russell et al., 1980). Of the 20 items, 10 are worded in a negative or 'lonely' direction and 10 are worded in a positive or 'non-lonely' direction. Respondents are asked to indicate how frequently they experienced specific emotions or engaged in specific behaviors, and to describe these on a 4-point Likert-type scale ranging from 1 = Never to 4 = Often. After the reverse-scoring of the positively worded items, the final loneliness score is computed by summing across all 20 items, with High scores indicating high degree of loneliness.

## **Results**

The fit of the hypothesized path model (see Figure 1) posited to represent the indirect structural relationships between parenting styles and the levels of psychological well-being, loneliness, and academic performance, being mediated by (1) the emotive factors of depression, anxiety, and stress, and (2) Internet addiction was tested via structural equation modeling.

Although the overall chi-square goodness-of-fit value was significant, ( $\chi^2 df = 9$ ) = 3234.69,  $p < .01$ , the incremental fit indices (NFI, IFI, TLI, CFI) are all close to 0.90 (range: 0.83 – 0.86). These fit indices indicated that the model provided a fairly good fit relative to a null or independence model (i.e. the posited model represented between 83% to 86% improvement in fit over the null or independence model), and support the hypothesized structure of the posited path model.

In order to aid interpretation of this highly complex model, the findings of each perceived parenting style for ‘mother’ and ‘father’ will be interpreted separately.

#### *Mother Authoritarian*

The results of the mother authoritarian model showed that the participants’ perception of their mother’s parenting style as authoritarian has direct but differential influences on the three Internet addiction behaviors of excessive use, mood alteration, and obsessive thoughts. The participants’ perception of their mother’s parenting style as authoritarian is (1) negatively associated with the Internet behaviors of excessive use and mood alteration (Beta = -0.52 and Beta = -0.76); and (2) positively associated with the Internet addiction behavior of obsessive thoughts (Beta = 0.89). These findings indicate that the more the participants perceived their mother’s parenting style as authoritarian, (1) the less they reported being addicted to the Internet in terms of their excessive usage and as a means for mood alteration, and (2) the more they are addicted to Internet in terms of their preoccupation with obsessive thoughts.

The participants’ perception of their mother’s parenting style as authoritarian is negatively associated with their level of depression (Beta = -0.43) which, in turn, is negatively associated with their Internet addiction behavior of ‘mood alteration’ (Beta = -0.40); ‘mood alteration’ is, in turn, negatively associated with both their academic performance and reported level of loneliness (Beta = -0.11 and Beta = -0.16, respectively). These findings suggest that the more the participants perceived their mother’s parenting style as authoritarian, the lower their reported level of depression; the lower their reported level of depression, the more they are addicted to the Internet as a means to alter their mood; and the more they are addicted to the Internet as a means to alter their mood, the lower their academic performance and reported level of loneliness.

The participants’ perception of their mother’s parenting style as authoritarian is also negatively associated with their level of stress (Beta = -0.28) which in turn is (1) positively associated with their Internet addiction behaviors of ‘excessive use’ and ‘obsessive thoughts’ (Beta = 0.89 and Beta = 0.86, respectively), and (2) negatively associated with their Internet addiction behavior of ‘mood alteration’ (Beta = -0.11); ‘excessive use’ and ‘obsessive thoughts’ in turn are positively associated with the three criterion variables of academic performance (Beta = 0.22 and Beta = 0.06, respectively), loneliness (Beta = 0.56 and Beta = 0.36, respectively), and psychological well-being (Beta = 0.12 and Beta = 0.17, respectively). The Internet addiction behavior of ‘mood alteration’ in turn is negatively associated with both their academic performance and reported level of loneliness (Beta = -0.11 and Beta = -0.16, respectively). These findings suggest that the more the participants perceived their mother’s parenting style as authoritarian, the lower their reported level of stress; (1) the lower their reported level of stress, the less they are addicted to the Internet in terms of their

excessive usage and engagement in obsessive thoughts; the less they are addicted to the Internet in terms of their excessive usage and engagement in obsessive thoughts, the lower their academic performance and their reported levels of loneliness and psychological well-being, and (2) the lower their reported level of stress, the more they are addicted to the Internet as a means to alter their mood; the more they are addicted to the Internet as a means to alter their mood, the lower their academic performance and reported level of loneliness.

The participants' perception of their mother's parenting style as authoritarian was not found to be significantly associated with the participants' reported level of anxiety. However, anxiety was found to be positively associated with the Internet addiction behaviors of 'excessive use' (Beta=.28) and 'mood alteration' (Beta=.44), and negatively associated with 'obsessive thoughts' (Beta=-.59). 'Excessive use' and 'obsessive thoughts' in turn are positively associated with the three criterion variables of academic performance (Beta=.22 and Beta=.06 respectively), loneliness (Beta=.56 and Beta=.36 respectively), and psychological well-being (Beta=.12 and Beta=.17 respectively). The Internet addiction behavior of 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness (Beta=-.11 and Beta=-.16 respectively). These findings suggest that (1) the higher their reported level of anxiety, the more they are addicted to the Internet in terms of their excessive usage; the more they are addicted to the Internet in terms of their excessive usage, the higher their academic performance and reported levels of loneliness and psychological well-being; (2) the higher their reported level of anxiety, the more they are addicted to the Internet as a means to alter their mood; the more they are addicted to the Internet as a means to alter their mood, the lower their academic performance and reported level of loneliness; and (3) the higher their reported level of anxiety, the less they are addicted to the Internet in terms of their engagement in obsessive thoughts and, subsequently, the lower their academic performance and their reported levels of loneliness and psychological well-being.

#### *Mother Authoritative*

The participants' perception of their mother's parenting style as authoritative has direct but differential influences on the three Internet addiction behaviors of excessive use, mood alteration, and obsessive thoughts. The participants' perception of their mother's parenting style as authoritative is (1) negatively associated with the Internet behaviors of excessive use and mood alteration (Beta = -0.67 and Beta= -0.66); and (2) positively associated with the Internet addiction behavior of obsessive thoughts (Beta =0.53). These findings indicate that the more the participants perceived their mother's parenting style as authoritative, (1) the less they are addicted to the Internet in terms of their excessive usage and as a means for mood alteration, and (2) the more they are addicted to the Internet in terms of their preoccupation with obsessive thoughts.

The participants' perception of their mother's parenting style as authoritative is negatively associated with their reported level of depression (Beta=-.59), which in turn is negatively associated with their Internet addiction behavior of 'mood alteration' (Beta=-.40); 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness (Beta=-.11 and Beta=-.16

respectively). These findings suggest that the more the participants' perceived their mother's parenting style as authoritative, the lower their reported level of depression; the lower their reported level of depression the more they are addicted to the internet as a means to alter their mood; the more they are addicted to the internet as a means to alter their mood, the lower their academic performance and the lower their reported level of loneliness.

The participants' perception of their mother's parenting style as authoritative is also negatively associated with the participants' reported level of anxiety (Beta=-.81), which in turn is positively associated with the Internet addiction behaviors of 'excessive use' (Beta=.28) and 'mood alteration' (Beta=.44), and negatively associated with 'obsessive thoughts' (Beta=-.59). 'Excessive use' and 'obsessive thoughts' in turn are positively associated with the three criterion variables of academic performance (Beta=.22 and Beta=.06 respectively), loneliness (Beta=.56 and Beta=.36 respectively), and psychological well-being (Beta=.12 and Beta=.17 respectively). The Internet addiction behavior of 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness (Beta=-.11 and Beta=-.16 respectively). These findings suggest that the more the participants perceived their mother's parenting style as authoritative, the lower their reported level of anxiety; (1) the lower their reported level of anxiety the less they are addicted to the internet in terms of their excessive usage; the less they are addicted to the internet in terms of their excessive usage, the lower their academic performance and their reported levels of loneliness and psychological well-being, (2) the lower their reported level of anxiety the less they are addicted to the internet as a means to alter their mood; the less they are addicted to the internet as a means to alter their mood, the better their academic performance and the higher their reported level of loneliness, and (3) the lower their reported level of anxiety the more they are addicted to the internet in terms of their engagement in obsessive thoughts and subsequently, the higher their academic performance and their reported levels of loneliness and psychological well-being.

The participants' perception of their mother's parenting style as authoritative is also negatively associated with their level of stress (Beta=-.87), which in turn is (1) positively associated with their Internet addiction behaviors of 'excessive use' and 'obsessive thoughts' (Beta=.89 and Beta=.86 respectively), and (2) negatively associated with their Internet addiction behavior of 'mood alteration' (Beta=-.11); 'excessive use' and 'obsessive thoughts' in turn are positively associated with the three criterion variables of academic performance (Beta=.22 and Beta=.06 respectively), loneliness (Beta=.56 and Beta=.36 respectively), and psychological well-being (Beta=.12 and Beta=.17 respectively). The Internet addiction behavior of 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness (Beta=-.11 and Beta=-.16 respectively). These findings suggest that the more the participants' perceived their mother's parenting style as authoritative, the lower their reported level of stress; (1) the lower their reported level of stress the less they are addicted to the internet in terms of their excessive usage and engagement in obsessive thoughts; the less they are addicted to the internet in terms of their excessive usage and engagement in obsessive thoughts, the lower their academic performance and their reported levels of loneliness and

psychological well-being, and (2) the lower their reported level of stress the less they are addicted to the internet as a means to alter their mood; the more they are addicted to the internet as a means to alter their mood, the lower their academic performance and the lower their reported level of loneliness.

#### *Father Authoritarian*

The participants' perception of their father's parenting style as authoritarian has direct but differential influences on the three Internet addiction behaviors of excessive use, mood alteration, and obsessive thoughts. The participants' perception of their father's parenting style as authoritarian is (1) positively associated with the Internet addiction behaviors of excessive use and mood alteration (Beta = 0.47 and Beta= 0.52); and (2) negatively associated with the Internet addiction behavior of obsessive thoughts (Beta =-0.66). These findings suggest that the more the participants perceived their father's parenting style as authoritarian, (1) the more they are addicted to the Internet in terms of their excessive usage and as a means for mood alteration, and (2) the less they are addicted to Internet in terms of their preoccupation with obsessive thoughts.

The participants' perception of their father's parenting style as authoritarian is positively associated with their reported level of depression (Beta=.50), which in turn is negatively associated with their Internet addiction behavior of 'mood alteration' (Beta=-.40); 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness (Beta=-.11 and Beta=-.16 respectively). These findings suggest that the more the participants' perceived their father's parenting style as authoritarian, the higher their reported level of depression; the higher their reported level of depression the less they are addicted to the internet as a means to alter their mood; the less they are addicted to the internet as a means to alter their mood, the better their academic performance and the higher their reported level of loneliness.

The participants' perception of their father's parenting style as authoritarian is also positively associated with the participants' reported level of anxiety (Beta=.43), which in turn is positively associated with the Internet addiction behaviors of 'excessive use' (Beta=.28) and 'mood alteration (Beta=.44), and negatively associated with 'obsessive thoughts' (Beta=-.59). 'Excessive use' and 'obsessive thoughts' in turn are positively associated with the three criterion variables of academic performance (Beta=.22 and Beta=.06 respectively), loneliness (Beta=.56 and Beta=.36 respectively), and psychological well-being (Beta=.12 and Beta=.17 respectively). The Internet addiction behavior of 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness (Beta=-.11 and Beta=-.16 respectively). These findings suggest that the more the participants perceived their father's parenting style as authoritarian, the higher their reported level of anxiety; (1) the higher their reported level of anxiety the more they are addicted to the internet in terms of their excessive usage; the more they are addicted to the internet in terms of their excessive usage, the better their academic performance and the higher their reported levels of loneliness and psychological well-being, (2) the higher their reported level of anxiety the more they are addicted to the internet as a means to alter their mood; the more they are addicted to the internet as a means to alter their mood, the lower their academic performance and the lower their

reported level of loneliness, and (3) the higher their reported level of anxiety the less they are addicted to the internet in terms of their engagement in obsessive thoughts and subsequently, the higher their academic performance and their reported levels of loneliness and psychological well-being.

The participants' perception of their father's parenting style as authoritarian is also positively associated with their level of stress (Beta=.65), which in turn is (1) positively associated with their Internet addiction behaviors of 'excessive use' and 'obsessive thoughts' (Beta=.89 and Beta=.86 respectively), and (2) negatively associated with their Internet addiction behavior of 'mood alteration' (Beta=-.11); 'excessive use' and 'obsessive thoughts' in turn are positively associated with the three criterion variables of academic performance (Beta=.22 and Beta=.06 respectively), loneliness (Beta=.56 and Beta=.36 respectively), and psychological well-being (Beta=.12 and Beta=.17 respectively). The Internet addiction behavior of 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness (Beta=-.11 and Beta=-.16 respectively). These findings suggest that the more the participants' perceived their father's parenting style as authoritarian, the higher their reported level of stress; (1) the higher their reported level of stress the more they are addicted to the internet in terms of their excessive usage and engagement in obsessive thoughts; the more they are addicted to the internet in terms of their excessive usage and engagement in obsessive thoughts, the better their academic performance and the higher their reported levels of loneliness and psychological well-being, and (2) the higher their reported level of stress the less they are addicted to the internet as a means to alter their mood; the less they are addicted to the internet as a means to alter their mood, the better their academic performance and the higher their reported level of loneliness.

#### *Father Authoritative*

The participants' perception of their father's parenting style as authoritative has direct but differential influences on the three Internet addiction behaviors of excessive use, mood alteration, and obsessive thoughts. The participants' perception of their father's parenting style as authoritative is (1) positively associated with the Internet behaviors of excessive use and mood alteration (Beta = 0.76 and Beta= 0.59); and (2) negatively associated with the Internet addiction behavior of obsessive thoughts (Beta=-0.9). These findings suggest that the more the participants perceived their father's parenting style as authoritative, (1) the more they are addicted to the Internet in terms of their excessive usage and as a means for mood alteration, and (2) the less they are addicted to Internet in terms of their preoccupation with obsessive thoughts.

The participants' perception of their father's parenting style as authoritative is positively associated with their reported level of depression (Beta=.31), which in turn is negatively associated with their Internet addiction behavior of 'mood alteration' (Beta=-.40); 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness (Beta=-.11 and Beta=-.16 respectively). These findings suggest that the more the participants' perceived their father's parenting style as authoritative, the higher their reported level of depression; the higher their reported level of depression the less they are addicted to the internet as a means to alter their mood; the less they are addicted to the internet as a means to

alter their mood, the better their academic performance and the higher their reported level of loneliness.

The participants' perception of their father's parenting style as authoritative is also positively associated with their level of stress ( $Beta=.33$ ), which in turn is (1) positively associated with their Internet addiction behaviors of 'excessive use' and 'obsessive thoughts' ( $Beta=.89$  and  $Beta=.86$  respectively), and (2) negatively associated with their Internet addiction behavior of 'mood alteration' ( $Beta=-.11$ ); 'excessive use' and 'obsessive thoughts' in turn are positively associated with the three criterion variables of academic performance ( $Beta=.22$  and  $Beta=.06$  respectively), loneliness ( $Beta=.56$  and  $Beta=.36$  respectively), and psychological well-being ( $Beta=.12$  and  $Beta=.17$  respectively). The Internet addiction behavior of 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness ( $Beta=-.11$  and  $Beta=-.16$  respectively). These findings suggest that the more the participants' perceived their father's parenting style as authoritarian, the higher their reported level of stress; (1) the higher their reported level of stress the more they are addicted to the internet in terms of their excessive usage and engagement in obsessive thoughts; the more they are addicted to the internet in terms of their excessive usage and engagement in obsessive thoughts, the better their academic performance and the higher their reported levels of loneliness and psychological well-being, and (2) the higher their reported level of stress the less they are addicted to the internet as a means to alter their mood; the less they are addicted to the internet as a means to alter their mood, the better their academic performance and the higher their reported level of loneliness.

The participants' perception of their father's parenting style as authoritative was not found to be significantly associated with the participants' reported level of anxiety. However, anxiety was found to be positively associated with the Internet addiction behaviors of 'excessive use' ( $Beta=.28$ ) and 'mood alteration' ( $Beta=.44$ ), and negatively associated with 'obsessive thoughts' ( $Beta=-.59$ ). 'Excessive use' and 'obsessive thoughts' in turn are positively associated with the three criterion variables of academic performance ( $Beta=.22$  and  $Beta=.06$  respectively), loneliness ( $Beta=.56$  and  $Beta=.36$  respectively), and psychological well-being ( $Beta=.12$  and  $Beta=.17$  respectively). The Internet addiction behavior of 'mood alteration' in turn is negatively associated with both their academic performance and reported level of loneliness ( $Beta=-.11$  and  $Beta=-.16$  respectively). These findings suggest that (1) the higher their reported level of anxiety, the more they are addicted to the Internet in terms of their excessive usage; the more they are addicted to the Internet in terms of their excessive usage, the higher their academic performance and reported levels of loneliness and psychological well-being; (2) the higher their reported level of anxiety, the more they are addicted to the Internet as a means to alter their mood; the more they are addicted to the Internet as a means to alter their mood, the lower their academic performance and reported level of loneliness; and (3) the higher their reported level of anxiety, the less they are addicted to the Internet in terms of their engagement in obsessive thoughts and, subsequently, the lower their academic performance and their reported levels of loneliness and psychological well-being.

## Discussion

In agreement with past research, the present study found that the Indian participants' perception of their fathers' and mothers' parenting styles have different influences on their usage of the Internet. Interestingly though, with regard to parenting styles *per se*, the present study's findings also showed that the student participants' perception of their parents being authoritarian or authoritative exerted similar influences on their reported level of Internet addiction, particularly in terms of the three identified problematic Internet addiction behaviors (excessive use, mood alteration, obsessive thoughts.) Researchers have argued that the relationship between a specific parenting style (authoritarian or authoritative) and child outcomes should be understood in the broader context of parents' goals and their cultural worldviews (Chao, 1994). Following from this premise, the aforementioned similar influences of parenting styles on Internet addiction motives can thus be explained by considering the cultural context of Kerala, India. It needs to be stated here that the design and conduct of the present study was based on Diana Baumrind's theory of parenting styles. Baumrind's theory was developed within the Western culture and its conclusions were based on research findings derived from Western samples. While many values overlap between cultures, there is still a distinction between the primary belief system utilized by Eastern and Western cultures. Hence, it can be argued that the findings which are deemed relevant within the Western culture may not be applied to the Asian culture.

In terms of the effect of the mother's parenting style on Internet use, the body of literature shows that the gender of the parents significantly affect children's Internet use (Lwin, Andrea, Stanaland, & Miyazaki, 2008). For example, this Indian-based study found that the more the student participants perceived their mother's parenting style as being authoritarian or authoritative, the less they are addicted to the Internet in terms of excessive usage and mood alteration. Thus, a reason that can be attributed to the lower Internet use by the student participants in the present study is the possible strong emotional bond that exists between them and their mothers. The existence of the "kind mother" paradigm in Kerala culture justifies the phenomenon that, regardless of the parenting style ardently practiced, mothers are perceived to be caring and supportive.

The study's findings showed that the participants' perception of their mothers' parenting style as authoritarian or authoritative is positively associated with the Internet addiction behavior of obsessive thoughts. In this information age, parents recognize the need for their children to use the Internet to enhance their educational opportunities such as seeking information regarding their subjects, clarifying doubts through online interaction with friends, and downloading e-books and articles. While mothers do not restrict their children's use of the technology for academic purposes, this overdependence may extend to non-educational purposes, with resulting negative aspects such as negative thoughts, preoccupation, feelings, and experiences (Lanthier, & Windham, 2004). The combination of all these educational and non-educational uses of the Internet may lead to unreasonable dependency. When mothers conspicuously limit Internet usage, the restriction may bring forth negative aspects of Internet use such as engagement in obsessive thoughts.

Perceived fathers' parenting styles, on the other hand, were found to have differential influences on the student participants' Internet addiction behaviors. The

present study showed that the more the students perceived their fathers' parenting style as being authoritarian or authoritative, the more they reported being addicted to the Internet as evidenced by 'excessive usage' and 'mood alteration.' This positive association may be attributed to the "strict father" image, especially within the Indian culture where fathers are regarded as the patriarchal leader of the family and who are more physically distant compared to mothers (Chao & Tseng, 2002). Furthermore, as the breadwinner of the family, fathers do not get enough quality time to spend with their children, resulting in low communication, paternal alienation, and feelings of insecurity and mistrust. In such an environment, it is not unusual for the participants to turn to the Internet for social and emotional support as well as to alleviate their distress. It has been demonstrated that paternal alienation and feelings of insecurity and mistrust toward fathers contribute significantly to problematic Internet use (Lei & Wu, 2007). Specifically, adolescents who feel alienated from their fathers may lack the necessary social skills and appropriate coping strategies for real-world interactions. These children may thus easily form online relationships where social cues can be removed or recreated to develop feelings of intimacy and closeness.

### **Limitations of the Study**

There are numerous limitations to any empirical study and this study is no different. As such, the findings obtained and the conclusions drawn from the present study must be interpreted with caution. First, since the research design of this study is cross-sectional and descriptive, no definitive conclusions can be drawn about the *causal* sequential effects (both direct and indirect) between the models' exogenous, mediator, and criterion variables. In other words, the observed significant path coefficients denote only relationships and not causality.

Second, this study utilized a self-report measure which required college students to recall and to rate their perceived parents' parenting style as well as their emotive states, their problematic Internet usage behaviors, their psychological well-being, academic performance, and feelings of loneliness. Such a retrospective style of responding forces the participants to rely on their memory when responding to the study's questionnaire items. Reliance on memory *per se* is clearly subjected to memory lapses/errors which can adversely affect the accuracy of the participants' true feelings/responses.

Third, the data for the present study were collected from colleges under the jurisdiction of Kannur University, Kerala, one of the states in India. Although diversity was considered in college selection within the selected jurisdiction, the external validity of the study's findings may still be questionable. As such, caution is advised when generalizing the findings from the present study to other parts of Kerala and beyond.

Fourth and perhaps most importantly, there is a dearth of Indian-related theoretical perspectives and Indian-related studies on the influences of parenting styles on psychological well-being, academic performance, and loneliness among Indian college students and, more so, on the mediating effects of Internet addiction. Discussion of the current results relied heavily on Western perspectives and studies which may not necessarily reflect Indian culture and values.

### **Implications of the Findings**

With the above limitations in mind, the findings from the present study carry a number of implications for the conceptualization and understanding of Internet addiction within the Indian context. First, this type of technology-related addiction is a relatively new phenomenon; however, very little research has been conducted on this societal problem within the Indian setting. The present study is one of the earliest studies that explored the relationship between Internet addiction, parenting styles and various psychosocial factors among college students in Kerala, India, and the findings offer an expansive view of the interplay among the selected key variables that contribute to the psychological well-being, academic performance and feeling of loneliness of Indian youths living in a modern, contemporary society, a society that is still bound by tradition, heritage, and indigenous belief systems.

Second, the findings from the present study offer a number of suggestions aimed at the effective prevention of Internet addiction. The identification of specific variables associated with Internet addiction (e.g., emotive factors of depression, anxiety, and stress) allows for targeting students who appear to be at risk for developing Internet addiction by raising awareness and providing education for both adolescents and their parents. The administrators, faculty, and staff of educational institutions can take a number of remedial measures to control students' excessive Internet use in the following ways: create classroom management strategies that reduce the use of computers and smart phones for non-educational purposes, especially during class sessions; observe students who spend excessive amounts of time surfing Internet sites and promptly make appropriate referrals to the school's guidance and counseling center. The institution can formulate policies and procedures regarding appropriate use of the Internet in the classroom and college campuses and put mechanisms in place that ensure the dissemination of information and enforcement of disciplinary measures.

Third, the current findings highlight the uniqueness of parenting styles in Kerala. As gleaned from the findings, in the Kerala culture, fathers and mothers have different influences on their children's academic and psychological domains, regardless of their parenting style. Mothers are apparently more effective in reducing their children's experience of depression, anxiety, and stress. Fathers, on the other hand, are more effective in encouraging better academic outcomes. Moreover, mothers tend to emphasize emotional nurturing and personal safety while fathers tend to stress autonomy and independence. Thus, providing a healthy balance between these two parenting styles has the potential to enable children to grow up in a safe, nurturing environment while challenging them to explore their unique skills and abilities.

Fourth, armed with the information generated from the present study, trainers and family counselors working with families in Kerala can help educate fathers and mothers on their respective impact on child outcomes. In addition, educational/training institutions can use the information to provide seminars and workshops on related issues such as 'effective parenting', 'Internet literacy', 'Internet parenting' to social workers, mental health professionals, teachers, parents, and children. As parents and teachers gain more exposure on these topics, they can incorporate the new knowledge into their home life, classroom activities, educational materials, and other life areas.

## Conclusion

The present generation of young Indians relies heavily on the Internet, and its usage has increased exponentially over the past decade. The present study targeted and investigated the antecedent factors that may lead to an increased risk to Internet addiction as well as examined the impact of such addiction on the welfare of college students in Kerala, India. Overall, the findings from the present study indicate that the parenting styles of Kerala mothers and fathers have differential influences on their children's psychological well-being, academic performance, and loneliness. Of particular interest is the finding that while mother's authoritarian and authoritative parenting styles lessened the level of depression, anxiety, and stress of their children, the perceived father's authoritarian or authoritative parenting styles heightened these emotive states in their children. These findings suggest the need for a cultural shift in the parenting style of Kerala fathers, to become more nurturing, affectionate, and interactive in the daily lives of their children. Just as important is the finding that most of the Western-based research findings are not pertinent to the Kerala cultural setting. Rather, it seems that cultural nuances and parameters play a crucial role in the Indian college student's psychological well-being and emotional bonding with parents, in spite of differences in their perceived parenting styles.

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