

ORIGINAL ARTICLE

# Perceived Parenting Styles and Internet Addiction Among Pakistani University Students: Age and Gender Differences

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## Main Points

- High or low degrees of demandingness and warmth from parents can lead children to engage in problematic behaviors such as Internet addiction (IA).
- Mother and father's parenting style is a positive correlate and predictor of IA among university students.
- Perceived authoritarianism of mothers and fathers among university students is a stronger risk factor for IA than a permissive parenting style or an authoritative parenting style.

## Abstract

Problematic Internet use and addiction are common among Pakistani university students. Parenting is one of the contributing factors to Internet addiction. The present study is aimed at investigating the differential effects of maternal and paternal parenting styles on Internet addiction among university students and to examine age and gender differences in the study variables. Data were gathered from university students ( $n = 200$ ) using the Parental Authority Questionnaire and the Internet Addiction Test. Pearson's correlations show both maternal and paternal parenting styles are positively correlated with Internet addiction. Regression analyses show that parental authoritarianism is the strongest risk factor for Internet addiction, followed by parental permissiveness. Internet addiction increased by 64% and 62%, with one standard unit increase in the authoritarianism of mothers and fathers, respectively. Parental authoritarianism predicted a mild Internet addiction among university students. An independent sample  $t$ -test shows nonsignificant gender differences in maternal and paternal perceived parenting styles; however, boys are more addicted to the Internet than girls. Likewise, age differences in addictive Internet use were nonsignificant, but younger and older adolescents perceived their parents differently. These findings offer valuable guidelines for parents and policymakers.

**Keywords:** Internet addiction, parenting style, university students

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## Introduction

Internet addiction (IA) is excessive internet use that harms a person's functioning and causes symptoms like anxiety, depression, or impatience when not online. Goldberg (1996) coined the term IA to describe compulsive Internet users. Despite the beneficial usage of the Internet for learning and entertainment, parents worry about their children's health, safety, and future success over excessive and compulsive use of new technology (Wu, 2017).

Research shows that IA affects dietary behavior, sleep patterns, and physical activity (Kamran et al., 2018); mental health (Ahmer & Tanzil, 2018); freedom from depression and stress (Javaeed et al., 2019); academic performance (Islam et al., 2018); and ego defense mechanisms (Waqas et al., 2016).

Studies show that problematic Internet use and addiction are common among Pakistani university students. A study reported that 89 (28.2%) out of 316 Azad Kashmir University students had

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pathologically severe IA; 52.4% had moderate-to-severe addiction; and only 3 (0.9%) had no IA (Javaeed, 2019). In Lahore, a study found that 41.9% of 322 medical and engineering students had moderate IA and 9.6% had severe addiction (Kamran et al., 2018). In a study with medical students in Karachi, 223 (65.6%) out of 289 students had mild IA, and 63 (18.5%) students had moderate IA. Only three girls (0.9%) reported having severe IA (Ahmer & Tanzil, 2018). Waqas et al. (2016) found that 32 out of 522 (6.1%) university students in Rawalpindi had severe IA. The homogeneous patterns of the prevalence of IA are found worldwide.

### Parenting Styles and Internet Addiction

Baumrind (1991) mentioned that parental responsiveness and demandingness constitute three distinct parenting styles: authoritarian, authoritative, and permissive. Parent – adolescent attachment patterns characterize the maternal and paternal parenting styles and thus lead to varying degrees of IA. Empirical studies found that parental responsiveness or warmth was linked with positive Internet use, whereas parental demandingness and the exercise of strict control predicted problematic Internet use (Chou & Lee, 2017). Dogan et al. (2015) reported that perceived parenting styles predicted a 25.1% variance in adolescents' IA. Mothers, particularly those below the age of 45, mediated more than fathers in Internet use among their teenagers and generated a dialogue with them about the appropriateness of Internet usage (Anderson, 2016, p.7).

Authoritarian and authoritative parents exercise strict control over the content, duration, and quality of Internet use (Chou & Lee, 2017; Eastin et al., 2006). Permissive parents share the characteristic of high responsiveness with authoritative parents. Permissive parents give freedom to children and do not monitor them. Consequently, adolescents with permissive parents more frequently use the Internet than adolescents with authoritarian and authoritative parents (Chou & Lee, 2017). Research showed that permissive parents did not set any rules and time limits for Internet use (Chou & Lee, 2017). With a blend of low control and high autonomy granted, their children were more prone to indulge in problematic Internet usage (Valcke et al., 2010).

Children of authoritarian parents perceive more control and less warmth (Baumrind, 1991). Adolescents who perceive their parents as highly demanding and less responsive, or, in other terms, as authoritarian, report negative and addictive Internet use. Authoritarian parents do not provide proper reasoning to their children for Internet use and set strict limits. Their high demand produces positive expectations of Internet use that lead to severe IA (Chou & Lee, 2017). Another study found that adolescents who perceive their parents as more authoritarian are highly addicted to the internet, whereas adolescents who perceive their parents as democratic are partially addicted to the Internet (Dogan et al., 2015).

Permissive parents have a reversed profile in the level of warmth and control compared to authoritarian parents. In terms of control practices, both permissive and authoritarian parents made mature demands, had ineffective communication, and were less nurturing and controlling than authoritative parents (Baumrind, 1991). Valcke et al. (2010) found that IA was lower when

adolescents perceived their parents as authoritarian and higher when they perceived their parents as having a permissive style.

Children of authoritative parents perceive the highest degree of control and warmth among their counterparts (Baumrind, 1991) because their parents frequently mediate and monitor the contents of the Internet their children use (Eastin et al., 2006). Adolescents with highly demanding and highly responsive parents report positive Internet use because they use reasonable control and nonpunitive strategies to inculcate discipline (Bornstein & Zlotnik, 2008). Chou and Lee (2017) found that authoritative parents set rules and model practices for adolescents' Internet use. They help solve problems with Internet use. Thus, their children have high self-control and self-regulation. They spend the least amount of time on the Internet during the weekend than children of other parents (Chou & Lee, 2017). The review of the literature guided the speculations and hypotheses for the current study.

### Age Differences in Internet Addiction

Scholars also reported age differences in IA between younger and older adolescents. The review of the literature reveals disagreement among researchers. Ozgur (2016) found a significant mean difference in IAIA, and older adolescents frequently used the Internet more than younger adolescents. He extended that parental permissiveness increases with growing age and that parents grant more autonomy to older children. Later, Karacic and Oreskovic (2017) and Effatpanah et al. (2020) showed that 15 – 16-year-old adolescents scored higher on IA than 11 – 12-year-old adolescents. Tur-Porcar (2017) supported this finding, stating that older adolescents aged 17 – 18 years reported more online shopping than their younger counterparts aged 14 – 16 years. On the other hand, Ballarotto et al. (2018) found significantly higher IA among younger adolescents than older adolescents, which disappeared when they tested the age-by-gender interaction. Contrarily, Smahel et al. (2012) reported a nonsignificant age difference between subsamples of adolescents. The inconsistent age-based differences in Internet use offer grounds for further research.

### Gender Differences in Internet Addiction

Gender affects the prevalence and patterns of IA among adolescents. Based on the empirical review of 48 studies, Baloğlu et al. (2020) further highlighted the need to examine the link between IA and gender. Studies showed that boys had a higher frequency (Kamran et al., 2018) and intensity of problematic Internet use (Dogan et al., 2015). Adolescent girls had a lower rate of IA than adolescent boys (Baloğlu et al., 2020; Chou & Lee, 2017; Waqas et al., 2016). Other studies show that girls had a higher IA than boys (e.g., Ahmer & Tanzil, 2018; Ballarotto, 2018; Effatpanah et al., 2020) and scored significantly higher on social and emotional impairment (Victorin et al., 2020). Some other studies found nonsignificant gender differences in IA (e.g., Khan et al., 2017; Smahel et al., 2012).

The existing literature also explains why adolescent boys and girls experience variations in the frequency and intensity of Internet use. Different perceptions of parenting styles, emotional regulation across gender groups, and congruence between parent – child gender are among a few reasons for these variations. The research reveals that girls perceive their parents as more controlling and supportive than boys, which facilitates decreased

Internet use. Boys perceive their parents as more autonomy-granting and permissive, which increases their Internet use (Ozgur, 2016). Thus, authoritarian and authoritative parenting styles, both characterized by more control, if positive, can result in no or low IA (Chou & Lee, 2017). Another study found that Internet addicts do not perceive authoritarian and authoritative parenting altogether as nonaddicts (Tur-Porcar, 2017).

The perceived parenting styles also affect adolescents' emotional regulation and consequent emotional adjustment (Garcia et al., 2020). The emotional and behavioral characteristics of internalizing and externalizing symptoms predict problematic and addictive Internet use (Effatpanah et al., 2020). Permissive-indulgent parenting is related to equal or even better self-concept and well-being than authoritative parenting. Parenting characterized by nonwarmth (authoritarian and neglectful) is related to poor scores on self-concept and well-being (Garcia et al., 2020).

Perceived parenting styles predict more emotional well-being among girls than boys. Empirical evidence posits that the interaction between perceived parenting styles and correspondence between parents and the child's gender also shapes different behavioral dispositions that lead to varying levels of IA among adolescent boys and girls (Shek, 2005). Another study found that adolescents perceived opposite-sex parents as uninvolved in monitoring their Internet use. They rated mothers as more authoritative and authoritarian and less permissive than fathers (Tur-Porcar, 2017).

### Research Hypotheses

1. Different maternal and paternal parenting styles will predict varying levels of IA among university students in such a way that authoritarian parenting styles will predict severe IA and authoritative parenting style will predict mild IA.
2. Older students are likely to have a higher level of IA than younger students.
3. Boys are likely to have a higher level of IA than girls.

## Material and Methods

### Objectives

- To examine the role of perceived maternal and paternal parenting styles in determining IA among university students.
- To investigate age and gender differences in perceived parenting styles and IA among university students.

### Participants

Data were collected from students at the University of Haripur, KPK, Pakistan through a convenience sampling technique during the fall of 2019. The majority of students were from the Faculty of Social Sciences. Their age range was 19 – 25 years. Younger students ( $n = 97$ ) were between the ages of 19 – 21 years, and older students ( $n = 103$ ) were between the ages of 22 and 25 years. Special care was taken to choose an equal number of boys ( $n = 98$ ) and girls ( $n = 102$ ) to facilitate gender comparison. The inclusion criteria for students were being a university student in an undergraduate or graduate program, having both parents alive, and being in a stable marital relationship. The exclusion criteria were not being a university student, belonging to a single-parent or stepparent family, and being beyond the standard age limit of university students.

## Measures

### Parental Authority Questionnaire

Buri (1991) developed this measure to assess the degree of parental demandingness and responsiveness towards their children. Children perceived their parents as being authoritative when they scored high on both dimensions of demandingness and responsiveness. When parents scored high on demandingness and low on responsiveness, they were perceived as authoritarian parents. Contrarily, low-demanding and more responsive parents were perceived as permissive parents. The Parental Authority Questionnaire (PAQ) had 30 items across three subscales. Each subscale consisted of 10 items that were answered on a 5-point Likert scale. The response options ranged from strongly disagree to strongly agree (1 = strongly disagree and 5 = strongly agree). The score range was 10 – 50 for each subscale, with a cutoff point of 30. A score above the cutoff point was an indication of the greater level of the perceived parenting style being measured. The maternal and paternal parenting styles were measured using separate forms. The internal consistency of the PAQ was acceptable ( $\alpha = .78$ ).

### Internet Addiction Test

Young (1998) developed this 20-item self-report measure for adolescents and adults to assess the presence and severity of IA. The response options were used as 0 for “not applicable,” 1 for “rarely,” 2 for “occasionally,” 3 for “frequently,” 4 for “often,” and 5 for “always.” The total score ranged between 0 and 100 and represented four different levels of Internet-compulsive use. The scores between 0 and 30 reflected normal Internet use; scores between 31 and 49 reflected mild Internet use; scores between 50 and 79 reflected moderate Internet use. Lastly, scores between 80 and 100 reflected severe Internet use and compulsive behavior. The higher scale score indicated the presence and severity of IA among users. The internal consistency of this measure was .89.

### Procedure

Data were collected from university students during the fall of 2019. Each participant was individually contacted for scale administration and provided with instructions for responding to both measures. Willing participation and confidentiality of information were ensured during all stages of the research. Participants signed the informed consent forms. Ethical committee approval was received from the Ethics Committee of University of Haripur, the Directorate of Advanced Studies and Research Board (ASRB) (Approval no: UOH/DASR/2019/463, Date: 6 August 2019). It took a maximum of 10 – 15 minutes to complete both scales. Data were only used for research, abiding by ethical considerations. The answer booklets with incomplete and missing information were discarded from the data pool.

### Data Analysis

Data analysis was planned in light of the research objectives and hypotheses. The cleaned data of 200 participants was entered into the Statistical Package for the Social Sciences version 19 Statistics (IBM SPSS Corp.; Armonk, NY, USA) for statistical analysis. First, descriptive statistics and alpha coefficients of the study variables were computed. Second, Pearson's product – moment correlation and linear regression analyses were performed to examine the relationships between perceived parenting styles and the levels of IA among university students. Perceived

permissive, authoritarian, and authoritative maternal and paternal parenting were tested. Age and gender were dummy-coded, using younger students and boys as reference groups. Lastly, *t*-tests were run to find out age and gender differences in perceived parenting styles and IA.

**Results**

First, Cronbach’s alpha and descriptive statistics were computed for both measures. Table 1 shows alpha coefficients, mean scores, standard deviation, minimum, and maximum scores for the Internet Addiction Test (IAT) and subscales of PAQ. The internal consistency for IAT was good, whereas maternal and paternal data forms had acceptably good reliability. The mean scores of subscales for parenting styles were similar in magnitude.

Table 2 presents the findings for correlation coefficients between study variables. The maternal and paternal perceived parenting styles are significantly positively correlated with IA at an alpha level .01. There were also significant positive correlation coefficients between mothers’ and fathers’ parenting styles. However, the magnitude of some coefficients of parenting styles with IA was moderate to severe.

Next, linear regression analyses were performed to examine the role of perceived parenting styles in determining IA among university students. Figure 1 shows different effect sizes and amounts of variance in the outcome. Both maternal and paternal styles of permissive, authoritarian, and authoritative parenting were significant positive predictors of IA among university students at the alpha level .05.

Maternal authoritarianism ( $\beta = .64$ ) and paternal authoritarianism ( $\beta = .62$ ) produced the highest amount of variance in the outcome variable. With a 1 standard deviation increase in mothers’ authoritarianism, IA increased by 41%. Whereas one standard unit increase in fathers’ authoritarianism produced a 39% variance in IA. These findings supported the hypothesis of severe IA among children of authoritarian parents more than their counterparts. Contrarily, authoritative parenting styles predicted the least variance in the severity of IA among university students. There was a 24% variance in IA due to perceived maternal authoritative and a 23% variance due to perceived paternal authoritative.

These findings also supported the hypothesis about the predictive role of authoritative parenting styles ( $\beta$  for mothers = .47;  $\beta$  for fathers = .45) in determining a mild level of IA as addiction compared to other styles. The standardized regression coefficients for maternal ( $\beta = .54^*$ ) and paternal ( $\beta = .55^*$ ) permissiveness were less than perceived parental authoritarianism and higher than perceived parental authoritative. The similarity of standardized beta weights indicated that students did not perceive their parents much differently from each other.

Different levels of IA were also assessed. Almost half of the students reported having moderate IA ( $n = 149$ ). Five students reported having no IA, 36 had a mild addiction, and 10 students were severely addicted to Internet use. The IAT mean score ( $M = 62$ ) reflected that the participants had a moderate level of IA on average because the score is in the range between 50 and 79. Table 3 shows a nonsignificant age difference in the severity

**Table 1.**  
*Cronbach’s Alpha and Descriptive Statistics for Parental Authority Questionnaire and Internet Addiction Test (n = 200)*

Scale/subscales	K	$\alpha$	n	M	SD	Minimum	Maximum
Permissive mothers	10	0.78	146	38.42	3.47	18	46
Authoritarian mothers	10	0.77	144	38.08	3.67	16	46
Authoritative mothers	10	0.77	154	38.06	3.80	13	47
Permissive fathers	10	0.78	144	38.04	3.45	13	47
Authoritarian fathers	10	0.76	141	37.36	3.72	18	50
Authoritative fathers	10	0.74	156	37.83	3.87	18	47
Internet addiction	20	0.89	200	62.00	13.43	21	89

**Table 2.**  
*Pearson’s Product – Moment Correlation Between Study Variables (n = 200)*

No.	Scale/subscales	2	3	4	5	6	7
1	Internet addiction	.54**	.64**	.48**	.53**	.62**	.47**
2	Permissive mothers		.70**	.77**	.77**	.70**	.70**
3	Authoritarian mothers			.68**	.69**	.76**	.61**
4	Authoritative mothers				.74**	.64**	.66**
5	Permissive fathers					.77**	.79**
6	Authoritarian fathers						.70**
7	Authoritative fathers						-

Note: \*\*p = .01 (two-tailed).

**Table 3.***Age Differences in Internet Addiction and Parental Styles Among University Students (n = 200)*

Scale/subscales	Younger (n = 98)	Older (n = 103)	t	P	95% CI	
	M (SD)	M (SD)			LL	UL
Internet addiction	60.41 (13.61)	63.49 (13.14)	-1.63	.10	-6.80	.65
Permissive mothers	33.44 (6.78)	36.81 (5.42)	-3.88*	.00	-5.07	-1.65
Authoritarian mothers	34.02 (6.40)	35.73 (5.87)	-1.96*	.05	-3.42	.00
Authoritative mothers	34.03 (6.70)	36.40 (5.95)	-2.64*	.00	-4.13	-.60
Permissive fathers	33.60 (6.65)	35.99 (5.44)	-2.79*	.00	-4.08	-.70
Authoritarian fathers	32.94 (6.18)	35.24 (5.91)	-2.69*	.00	-3.99	-.62
Authoritative fathers	34.40 (6.63)	36.32 (5.10)	-2.30*	.02	-3.56	-.27

Note: CI = Confidence interval; LL = Lower limit; UL = Upper limit.

\* $p < .05$ .  $df = 198$  (two-tailed).

of IA among university students. As mentioned earlier, younger students were used as a reference group; the older students obtained higher average scores on IA and all 6 subscales of perceived parenting styles. The higher mean scores of older students indicate their experience severe IA. They rated parents as more permissive, authoritarian, and authoritative than their younger counterparts. The findings imply that younger and older students perceive their parents differently.

The findings of an independent  $t$ -test shown in Table 4 indicate that boys reported significantly higher levels of IA than girls at  $p < .05$ . There were nonsignificant gender differences in maternal and paternal perceived parenting styles, except for authoritarian mothers. The higher mean score of boys shows they perceived their mothers as more authoritarian than girls.

## Discussion

The present study aimed to examine different types of perceived parenting styles concerning IA among university students. Moreover, age and gender differences were also investigated in parenting styles and IA. The satisfactory internal consistency of the scales used in the study signaled that the researcher could proceed with further analysis. The significant positive correlation coefficients revealed that maternal and paternal parenting styles were associated with IA. Similarly, regression coefficients

supported the predictive role of permissive, authoritarian, and authoritative parenting in IA. All the hypotheses were accepted, except for age differences, and the findings empirically supported the research assumptions.

In the family context, a father and mother may possess distinct rearing styles. For instance, it is highly likely to have an authoritarian father and a permissive mother. An interesting observation of the current study based on the average scores was the similar perception of maternal and paternal parenting styles among university students. For instance, if an adolescent perceived his father as authoritarian, he perceived his mother as authoritarian, too. This finding signifies how parents' behaviors and practices build up a family climate characterized by varying levels of warmth, care, and control. Although it is plausible to observe heterogeneous parenting styles in a family that are being masked in average scores. Different parenting behaviors differently predict the risk of IA among children and adolescents. Ceyhan (2011) found that Internet-addicted individuals also reported having interpersonal and family problems, due to which they were motivated to escape from the stressors and seek pleasure in excessive Internet use.

The effects of authoritarian, authoritative, and permissive parenting styles on IA varied in degree. Findings showed that adolescents who perceive their parents as more demanding and

**Table 4.***Gender Differences in Internet Addiction and Parental Styles Among University Students (n = 200)*

Scale/subscales	Boys (n = 98)	Girls (n = 102)	t	P	95% CI	
	M (SD)	M (SD)			LL	LL
Internet addiction	64.09 (11.93)	59.98 (14.50)	2.18*	0.03	.40	7.82
Permissive mothers	35.89 (6.07)	34.49 (6.52)	1.56	0.11	.36	3.15
Authoritarian mothers	35.84 (5.92)	34.00 (6.31)	2.11*	0.03	.12	3.54
Authoritative mothers	35.81 (5.86)	34.72 (6.90)	1.20	0.23	-.70	2.88
Permissive fathers	35.16 (5.97)	34.51 (6.36)	0.75	0.45	-1.0	2.37
Authoritarian fathers	34.84 (6.14)	33.44 (6.09)	1.61	0.10	-.31	3.10
Authoritative fathers	36.14 (5.85)	34.67 (6.00)	1.76	0.08	-.17	3.12

Note: CI = Confidence interval; LL = Lower limit; UL = Upper limit.

\* $p < .05$ .  $df = 198$  (two-tailed).

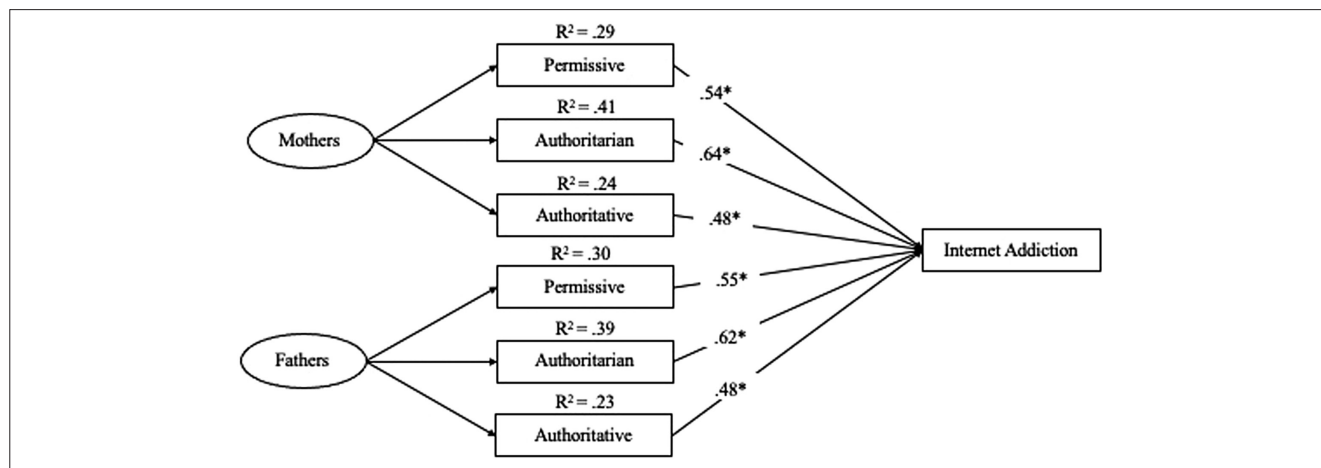


Figure 1. Perceived Maternal and Paternal Styles as Predictors of Internet Addiction.

less responsive, i.e., authoritarian, reported having a severe IA. Whereas adolescents who perceive their parents as less demanding and more responsive, i.e., permissive, reported having a moderate IA. In light of Baumrind’s theory, authoritarian and permissive parenting create less nurturing parent – child interaction where communication patterns are poor and few maturity demands are made from children (Baumrind, 1991). Previous research found that parenting style was a significant predictor of risky internet use, and authoritarian parenting style was more associated with problematic Internet use than other parenting styles (Moazedian et al., 2014).

Usually, children and adolescents refrain from wrongdoings in fear of punishment from authoritarian parents, and those with authoritarian parents report having a low tendency for problematic and addictive Internet use. Literature also supports the idea that adolescents who perceive their parents as more controlling and demanding are less addicted to the internet (Valcke et al., 2010). Yet the present study found severe IA among university students with authoritarian parents. This finding is aligned with previous research, such as Chou and Lee (2017), who reported that authoritarian parents impose strict limits on Internet use without providing reasoning for its detrimental effects. Consequently, their children develop positive expectations and use the internet more when parental supervision is loose.

Adolescents with authoritative parents reported having a milder level of IA than those with authoritarian and permissive parents. Authoritative parents monitor the quality of content their children are exposed to and impose time limits for Internet use (Eastin et al., 2006). Unlike authoritarian parents, authoritative parents exercise positive control and provide reasoning to discipline their children. They set rules for adolescents’ Internet use, while permissive parents give freedom for unlimited and unsupervised Internet use (Chou & Lee, 2017). The findings of the present study are consistent with the previous literature. A study reported that authoritative parenting plays a protective role in preventing adolescents from developing IA. But authoritarian, neglecting, and permissive-indulgent parents are associated with the potential risk of developing IA (Tao et al., 2007). The varied effect sizes point to the differential effects of parenting styles on IA among university students. As compared to 41% of variance

produced due to mothers’ authoritarianism and 39% of variance produced due to fathers’ authoritarianism, about 24% and 23% of variances were produced due to authoritative mothers and fathers, respectively. Maternal and paternal permissiveness produced above 29% and 30% variance in IA, respectively (see Figure 1).

The effects of demographic variables such as age and gender are also examined on parenting styles and IA. The second hypothesis states that older university students will have a higher level of IA than younger university students. However, a nonsignificant age difference was found in IA. There are significant age differences, favoring older adolescents in the perception of more maternal and paternal authority. It can be inferred from this finding that university students are more vulnerable to IA who have early exposure to the Internet, free Internet access on campus, and lack proper parental supervision are more vulnerable to IA (Chi et al., 2016). In this scenario, the age differences between younger and older university students become less significant.

The third hypothesis states, “Boys will have a higher level of Internet addiction as compared to girls.” Findings support the hypothesis that boys are more addicted to the Internet than girls. It is convincing to believe that few parents allow internet use rather than spending time outside with friends or risky peer groups. Anand et al. (2018) found a high level of IA among undergraduate students in South India who were between 18 and 21 years. Particularly, boys faced a 2.8 times higher risk of problematic Internet use than girls. Another interesting observation of the present study is that boys’ perception of their mothers being more authoritarian in the exercise of parental control can be a plausible reason for their tendency for addictive Internet use.

The balance between parental demandingness and responsiveness is a protective factor for adolescents and young adults’ behavior regulation. University students who perceive too high or too low parental control are more addicted to the Internet. Parents should wisely choose adaptive rearing styles to protect adolescents from the perils of problematic Internet use. They can get insight into providing a supportive family environment so that youth, particularly boys, do not escape from family stressors and indulge in risky behaviors such as IA.

### Limitations and Future Recommendations

The present study was conducted on university students in the age range of 19 – 25 years. Only one university was sampled for data collection. Only the effects of two demographic variables, age and gender, were included in the research design, and other important factors such as parental educational level and the family's socioeconomic status were out of the domain of the present study. Future researchers are recommended to increase the sample size, diversity, and demography in their studies. Though students' perception of parenting styles is more significant and credible than parents' self-report of parenting styles, it may introduce response bias or may not be congruent with parents' reports of their parenting behaviors and practices. Information about parents' perceptions of parenting styles and mediums of Internet use, such as desktops, laptops, tablets, and smartphones, was not collected. Collecting data from students and their parents about the frequency of Internet use would have enabled a rigorous analysis of the variables under study. Addressing the abovementioned limitations can be a starting point for their upcoming study.

### Implications

The present study portrays maternal and paternal parenting styles in the Pakistani context that represent collectivist cultural values and can be compared with similar studies in other countries and cultures. The findings augment the theoretical literature on the parenting of university students and its link with the likelihood of IA. University students and their parents can seek practical guidance about the helping and hindering effects of different parenting styles. Too lenient or too harsh parenting harms parent – adolescent bonding and impairs interpersonal communication. This insight can be applied in psychoeducation programs for families to exercise optimal demandingness and responsiveness so that children can be saved from behavioral problems such as IA. This study also helps to screen out moderately and severely Internet-addicted university students who can be provided with mental health counseling for the prevention of IA.

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**Informed Consent:** Written informed consent was obtained from the participants who agreed to take part in the study.

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### References

Ahmer, Z., & Tanzil, S. (2018). Internet addiction among social networking sites users: Emerging mental health concern among medical

- undergraduates of Karachi. *Pakistan Journal of Medical Sciences*, 34(6), 1473 – 1477. [CrossRef]
- Anand, N., Jain, P. A., Prabhu, S., Thomas, C., Bhat, A., Prathyusha, P. V., Bhat, S. U., Young, K., & Cherian, A. V. (2018). Prevalence of excessive Internet use and its association with psychological distress among university students in South India. *Industrial Psychiatry Journal*, 27(1), 131 – 140. [CrossRef]
- Anderson, M. (2016). *Parents, teens, and digital monitoring* (Report No. 202.419.4372). Pew Research Center. <https://www.pewresearch.org/internet/2016/01/07/parents-teens-and-digital-monitoring/>
- Ballarotto, G., Volpi, B., Marzilli, E., & Tambelli, R. (2018). Adolescent Internet abuse: A study on the role of attachment to parents and peers in a large community sample. *BioMed Research International*, 2018, 1 – 10. [CrossRef]
- Baloğlu, M., Şahin, R., & Arpacı, I. (2020). A review of recent research in problematic internet use: Gender and cultural differences. *Current Opinion in Psychology*, 36, 124 – 129. [CrossRef]
- Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *Journal of Early Adolescence*, 11(1), 56 – 95. [CrossRef]
- Bornstein, M. H., & Zlotnik, D. (2008). *Encyclopedia of infant and early childhood development*, pp. 496 – 509. <http://www.sciencedirect.com/science/article/pii/B9780123708779001183>
- Buri, J. R. (1991). Parental authority questionnaire. *Journal of Personality Assessment*, 57(1), 110 – 119. [CrossRef]
- Ceyhan, A. A. (2011). University students' problematic internet use and communication skills according to the internet use purposes. *Educational Sciences: Theory and Practice*, 11(1), 69 – 77.
- Chi, X. L., Lin, L. & Zhang, P. (2016). Internet addiction among college students in China: Prevalence and psychosocial correlates. *Cyberpsychology, Behavior and Social Networking*, 19(9), 567 – 573. [CrossRef]
- Chou, C., & Lee, Y. H. (2017). The moderating effects of internet parenting styles on the relationship between Internet parenting behavior, Internet expectancy, and Internet addiction tendency. *The Asia-Pacific Education Researcher*, 26(3-4), 137 – 146. [CrossRef]
- Dogan, H., Bozgeyikli, H., & Bozdas, C. (2015). Perceived parenting styles as a predictor of internet addiction in adolescence. *International Journal of Research in Education and Science*, 1(2), 167 – 174. [CrossRef]
- Eastin, M. S., Greenberg, B. S., & Hofschire, L. (2006). Parenting the Internet. *Journal of Communication*, 56(3), 486 – 504. [CrossRef]
- Effatpanah, M., Moharrami, M., Rajabi Damavandi, G., Aminikhah, M., Hosein Nezhad, M., Khatami, F., Arjmand, T., Tarighatnia, H., & Yekaninejad, M. S. (2020). Association of internet addiction with emotional and behavioral characteristics of adolescents. *Iranian Journal of Psychiatry*, 15(1), 55 – 66. [CrossRef]
- Garcia, O. F., Fuentes, M. C., Gracia, E., Serra, E., & Garcia, F. (2020). Parenting warmth and strictness across three generations: Parenting styles and psychosocial adjustment. *International Journal of Environmental Research and Public Health*, 17(20), 74 – 87. [CrossRef]
- Goldberg, "Internet Addiction Disorder," (1995). In M. E. Cinti (2004). Internet Addiction Disorder, un fenomeno sociale in espansione. *Quale Psicologia*, 23(1), 4 – 23. <http://www.iucf.indiana.edu/brown/hyplan/addict.html>.
- Javaeed, A., Zafar, M. B., Iqbal, M., & Ghauri, S. K. (2019). Correlation between Internet addiction, depression, anxiety, and stress among undergraduate medical students in Azad Kashmir. *Pakistan Journal of Medical Sciences*, 35(2), 506 – 509. [CrossRef]
- Kamran, H., Afreen, A., & Ahmed, Z. (2018). Effect of internet addiction on dietary behavior and lifestyle characteristics among university students. *Annals of King Edward Medical University*, 24(S), 836 – 841. [CrossRef]
- Karacic, S., & Oreskovic, S. (2017). Internet addiction through the phase of adolescence: A questionnaire study. *JMIR Mental Health*, 4(2), e11. [CrossRef]

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- Khan, M. A., Shabbir, F., & Rajput, T. A. (2017). Effect of gender and physical activity on internet addiction in medical students. *Pakistan Journal of Medical Sciences*, 33(1), 191 – 194. [\[CrossRef\]](#)
- Moazedian, A., Taqavi, S. A., Hosseini Almadani, S. A., Mohammadyfar, M. A., & Sabetimani, M. (2014). Parenting style and internet addiction. *Journal of Life Science and Biomedicine*, 4(1), 9 – 14.
- Ozgun, H. (2016). The relationship between Internet parenting styles and Internet usage of children and adolescents. *Computers in Human Behavior*, 60, 411 – 424. [\[CrossRef\]](#)
- Shek, D. T. L. (2005). Perceived Parental control and parent-child relational qualities in Chinese adolescents in Hong Kong. *Sex Roles*, 53(9 – 10), 635 – 646. [\[CrossRef\]](#)
- Smahel, D., Brown, B. B., & Blinka, L. (2012). Associations between online friendship and Internet addiction among adolescents and emerging adults. *Developmental Psychology*, 48(2), 381 – 388. [\[CrossRef\]](#)
- Tao, R., Ying, L., Yue, X., & Hao, X. (2007). *Internet addiction: Exploration and interventions*. Shanghai Century Publishing Group.
- Tur-Porcar, A. (2017). Parenting styles and Internet use. *Psychology and Marketing*, 34(11), 1016 – 1022. [\[CrossRef\]](#)
- Valcke, M., Bonte, S., De Wever, B., & Rots, I. (2010). Internet parenting styles and the impact on Internet use of primary school children. *Computers and Education*, 55(2), 454 – 464. [\[CrossRef\]](#)
- Victorin, Å., Åsberg Johnels, J., Bob, E., Kantzer, A. K., Gillberg, C., & Fernell, E. (2020). Significant gender differences according to the Problematic and Risky Internet Use Screening Scale among 15-year-olds in Sweden. *Acta Paediatrica*, 109(9), 1891 – 1892. [\[CrossRef\]](#)
- Waqas, A., Rehman, A., Malik, A., Aftab, R., Allah Yar, A., Allah Yar, A., & Rai, A. B. (2016). Exploring the association of ego defense mechanisms with problematic internet use in a Pakistani medical school. *Psychiatry Research*, 243, 463 – 468. [\[CrossRef\]](#)
- Wu, J. Y. (2017). The indirect relationship of media multitasking self-efficacy on learning performance within the personal learning environment: Implications from the mechanism of perceived attention problems and self-regulation strategies. *Computers and Education*, 106, 56 – 72. [\[CrossRef\]](#)
- Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology and Behavior*, 1(3), 237 – 244. [\[CrossRef\]](#)