

## Parent-Adolescent Relationship, Escape Motive and Problematic Internet Use Among University Students: Gender in Context

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### Abstract

**Objective.** Present study attempted to assess problematic internet use among university students as affected by parent-adolescent relationships and escape motive; such that, escape motive mediates the relationship between parent-adolescent relationship and problematic internet use.

**Method.** Data were collected through purposive sampling technique from students ( $N = 585$ ,  $M = 21.62$  years) in public and private universities of Islamabad and Rawalpindi, Pakistan.

**Results.** It was conceptualized that secure parent-adolescent relationship negatively associates with escape motive and problematic internet use, whereas escape motive positively associates with problematic internet use. Gender was added to the model as a covariate. Mediation analysis demonstrated that escape motive significantly mediated association between secure parent-adolescent relationship and problematic internet use irrespective of an individual's gender ( $p < .001$ ). Secure parent-adolescent relationship was negatively associated with low escape motive and problematic internet use.

**Implications.** Study presented empirical evidence for parents' role in shaping children's behaviours. Secure parent-adolescent relationship help reduce development of escape motive which is associated to problematic internet use among university students. It could help develop an intervention for addressing escape motive and hence reducing the problematic internet use.

**Keywords.** *Internet use, parenting, escape motive, higher education.*



## **Introduction**

Today, the technological world is witnessing the escalated internet use (Tankovsha, 2021) and no one could bear the thought of life without it. Problematic internet use refers to the inability to control internet usage, which results in marked distress and functional impairment (Zhu & Mok, 2020). Young (1999) is an authority figure for her classical work on internet addiction and she enlisted at least five of eight diagnostic criteria to be referred to as problematic internet users. This includes a) a need to devote more and more time to online activities, b) internet preoccupation, c) inability to effectively manage time, d) withdrawal symptoms, e) recurrent ineffective efforts for decreasing online period, f) environmental distress (i.e., from family, school, work, and friends), g) deception about time spent online, and h) mood modification through internet use (Zhu & Mok, 2020). Kim et al. (2010) postulated internet usage over long durations, isolation from social gatherings, and shifting one's whole attention towards a variety of online activities as problematic internet use. These criteria could help to distinguish between problematic and normal internet users.

Researchers reported a rapidly increasing rate of problematic internet among university students worldwide (Ahmad et al., 2020), which results in various physical and psychological problems. In particular, the academic success of students is challenged with excessive internet use because of associated low academic motivation, poor achievement, absent-mindedness in class, and inability to meet deadlines for assignments as outcomes of problematic internet use among students (Winskel et al., 2019). Ansar et al. (2020) found that almost half of 231 students reported excessively using internet and their academic performance was poor. Moreover, above 9% students have severe internet addiction. Researchers reported excessive use of social networking sites among Pakistani students that adversely impact their academic performance, physical health, psychological wellbeing, and interpersonal relationships (Ahmad et al., 2020; Akhter, 2013; Javaeed et al., 2020; Khan et al., 2019).

### **Parenting**

Literature demonstrated that parents play a major role in the psychosocial development and wellbeing of adolescents and young adults (Faltynkova et al., 2020). High wellbeing among adolescents can be ensured by improving parent-adolescent relationship, whose core components are attachment and warmth (Hart et al., 2019; Stanik et al., 2013).

Two studies found that parent-adolescent attachment acted as a protective factor for problematic internet usage such that, problematic internet use was low in the presence of secure parent-adolescent attachment (Asyriati, 2020; Lan & Wang, 2020). Many researchers also depicted the linkage of problematic internet usage to poor early parental bonding, harsh parental rules, parental overprotection, and lack of communication with parents (Faltynkova et al., 2020; Kalaitzaki & Birtchnell, 2014). Parents lacked love and responsiveness in the case of punitive and over-intrusive rearing practices that consequently led to distancing from parents and diversion towards problematic internet use (Xiuqin et al., 2010). Deatherage et al. (2014) demonstrated that the life stressors in the family context play an important role in the development of escape motive of internet use. They found that problematic internet use was positively associated with an effort to cope with familial stress in case of poor parent-adolescent relationship. The relationship between parent and adolescent has also increased significance especially in the context of collectivistic culture (Agishtein & Brumbaugh, 2013). For instance, Pakistani researchers reported the nature of the parent-adolescent relationship as a significant predictor of problematic internet use among university students (Irfan & Zulkefily, 2021; Khalid et al., 2018; Zafar & Suneel, 2018; Zonash, 2017).

### **Escape Motives**

Many studies have focused on the role of motives enhancing problematic internet use (Deatherage et al., 2014). Islam et al. (2018) highlighted information seeking, social interaction, and entertainment as basic motives behind problematic internet use. Among these motives, escape motive is found to be a significant predictor for problematic internet use (Soh et al., 2014). Kardefelt-Winther (2014) extrapolated that an individual engages in repetitive internet use in the presence of unfulfilled needs of real-life. The problems thus start to seem less distressing because of the emotional reward gained during media use activity. As a result, habitual internet use becomes a way to escape from all problems that eventually lead to challenging consequences (Kardefelt-Winther, 2014). Literature also indicates the use of the internet to seek escape from negative parent-adolescent relationship and interactions (Chng et al., 2015). Thus, escape motive is associated with both parental attachment and problematic internet use.

It is also evident from the aforementioned literature that escape motive could be a significant predictor of problematic internet use. However, there exists a gap in Pakistani literature on the role of escape motive for the problematic use of the internet or its association with parent-adolescent relationship.

Literature revealed a varied trend among men and women about prevalence of internet usage. Studies from Pakistan found that men more actively used internet and spent time online than women (Ahmad et al., 2020; Akhter, 2013) and are thus more inclined towards the problematic internet usage (Billieux & Van der Linden, 2012). However, a study by Haroon et al. (2018) demonstrated prevalence of problematic internet use more among women. Another study found no gender-related differences for problematic internet use (Khan et al., 2017). So, the present study aimed to assess the effect of gender as a controlled variable (i.e., covariate) for the association between variables.

## Hypotheses

1. Secure parent-adolescent relationship will be negatively associated with escape motive and problematic internet use.
2. Escape motive will be positively associated with problematic internet use.
3. The escape motive will mediate the association between parent-adolescent relationships and problematic internet use.
4. Problematic internet use will be higher among men than women.

## Method

### Participants

The sample of the study ( $n = 585$ ) was purposively selected from the public and private universities of Islamabad and Rawalpindi. It comprised of both male ( $n = 294$ ) and female ( $n = 291$ ) students with age range from 18 to 25 years ( $M = 21.62$ ,  $SD = 2.14$ ). The majority of the students were enrolled in undergraduate programs and belonged to natural sciences. A major proportion of university students used the internet on their laptops and smartphones. The inclusion criteria of the participants were regular internet users in the past six months and having both parents alive. Table 1 presents the demographic characteristics of the sample.

**Table 1**  
*Demographic Characteristics of the Participants (N=585)*

Variables	Groups	N	%
Gender	Male	294	50.3%
	Female	291	49.7%
Levels of education	BS	341	58.3%
	M.Sc.	148	25.3%
	M.Phil.	96	16.4%
Field of study	Natural Sciences	231	39.5%
	Social Sciences	126	21.5%
	Management Sciences	53	9.1%
	Computer Sciences	64	10.9%
	Literature	22	3.8%
	Arts	89	15.2%
Internet use	Smartphone	585	100%
	Laptop	336	57.4%
	Computer	95	16.2%
	Tablet	72	12.3%

## Measures

**Inventory of Parental and Peer Attachment-Revised.** Armsden and Greenberg (1987) developed this self-report measure to assess adolescent's positive and negative perceptions of affective and cognitive dimensions of relationships with parents and intimate friends; particularly how well these figures served as a source of psychological security. Only parental attachment subscale was used in the current study combining the Mother and Father Attachment Forms to obtain a Parent Form; such as the word "mother" or "father" was replaced by "parents" in all the items. It comprised of 25 items with a 5-point Likert scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The total scale score ranged from 25-125 and the high score indicated a high degree of psychological security in parent-adolescent relationships. The reliability coefficient for the parents' form was .93, which reflected a high internal consistency.

**Internet Motive Scale.** Huang (2004) developed this self-report measure that was later adapted and modified by Hooi (2011). The present study administered the adapted version of the scale and used only the subscale of escape motive to assess escape motive among university students. The measure consisted of 6 items and evaluated the internet motive in terms of six factors; entertainment, escape/pass time, social interaction, surveillance/information, product information, and eroticism. Its five-point rating scale ranged from *strongly disagree* (1) to *strongly agree* (5). The score ranged from 6-30 and a high score indicated a high escape motive. The internal consistency of the scale was acceptable ( $\alpha = .70, p < .05$ ).

## Problematic Internet Use Questionnaire.

Thatcher and Goolam (2005) developed this self-report questionnaire to assess problematic internet use. It consisted of 20 items based on three factors i.e., online preoccupation, adverse effects, and social interactions. Items were scored on a five-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The score range was 20-100. The high score represented the prevalence of problematic internet use. The scale reported a high value of internal consistency ( $\alpha = .90$ ).

## Procedure

Prior permission was pursued from authorities of the universities for evading possible issues in the data collection process. Students were approached in their classrooms, libraries, and common rooms. After receiving informed consent for their voluntary participation, participants were ensured of the anonymity and confidentiality of data. They were provided with questionnaire booklets and asked to respond as honestly as they could. The study measures were administered with different sequences to avoid response bias. The online questionnaire administration was also utilized through Google forms.

## Results

The primary objective of the study was to examine the mediation effect of escape motive on the association between parent-adolescent relationships and problematic internet use. Gender was entered in the analysis as a covariate. The findings showed that all measures had high internal consistency and were psychometrically reliable for further analyses. The values of skewness indicated the normal distribution of the data

**Table 2**

*Psychometric Properties and Correlation Coefficients of Study Variables (N=585)*

Variables	k	$\alpha$	M(SD)	Skew	Range		2	3
					Actual	Potential		
1. Parent-adolescent relationship	25	.94	89.48(19.52)	-.89	32-125	25-125	-.31**	-.40**
2. Escape motive	6	.83	19.48(5.15)	-.36	9-30	6-30	-	.59**
3. Problematic internet use	20	.91	53.64(14.14)	.18	20-97	20-100	-	-

\*\* $p < .01$

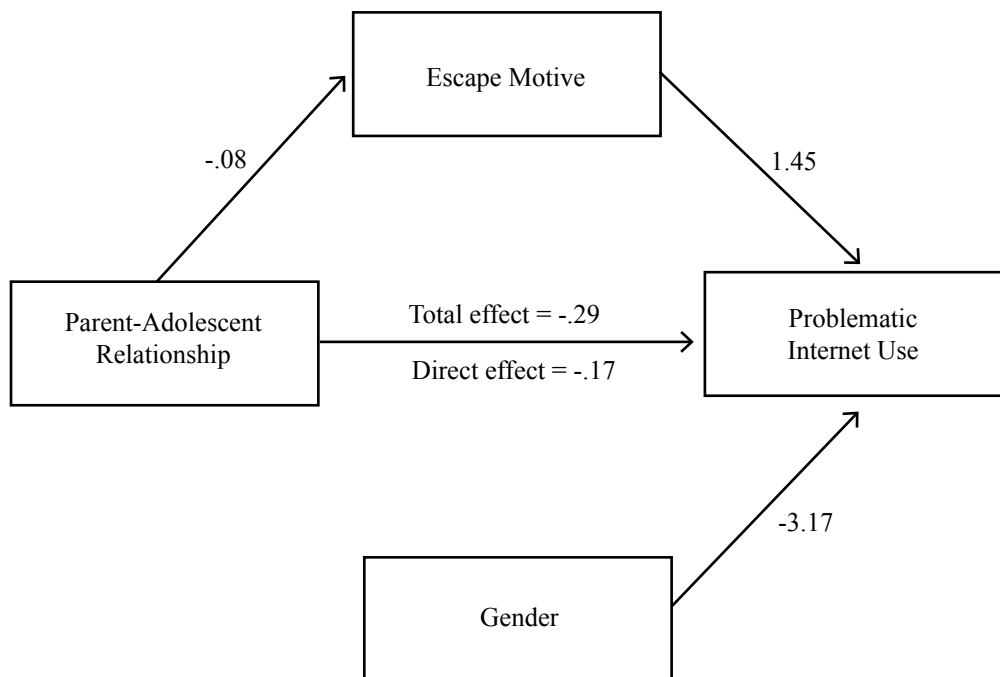
Correlation coefficients in Table 2 shows that secure parent-adolescent relationship has a significant negative association with escape motive and problematic internet use, whereas escape motive has a significant positive association with problematic internet use. Though the magnitude of these correlation coefficients is low, these findings support hypotheses about the direction of association among study variables.

**Table 3***Mediation Effect of Escape Motive for Parent-Adolescent Relationship and Problematic Internet Use (N=585)*

Variables	Predictors	B	p	95% CI	
				LL	UL
Problematic internet use	Parent-adolescent relationship	-.29***	.00	-.35	-.24
Problematic internet use	Escape motive	1.45***	.00	1.27	1.63
Escape motive	Parent-adolescent relationship	-.08***	.00	-.10	-.06
Problematic internet use	Parent-adolescent relationship through escape motive	-.17***	.00	-.22	-.12

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

Another objective of the study was to examine the mediating effect of escape motive on the association between parent-adolescent relationship and problematic internet use such that gender acts as the covariate. Table 3 shows parent-adolescent relationship is significant predictor of problematic internet use without the effect of the mediator i.e., total effect ( $B = -.29, p < .001$ ). Escape motive is also a significant positive predictor of problematic internet use. Whereas escape motive is significantly and negatively predicted by parent-adolescent relationship. Results also suggest that problematic internet use is significantly predicted by direct effect of parent-adolescent relationship (independent variable) through escape motive (i.e., mediator) ( $B = -.17, p < .001$ ). The decrease in the value of coefficient from the total effect to the direct effect demonstrates that escape motive significantly mediates the association between parent-adolescent relationship and problematic internet use, irrespective of the individual's gender. It can be thus inferred that level of problematic internet use declines when individuals are more attached to their parents; such that, a high escape motive weakens this association. Figure 1 depicts the magnitude of total, direct, and indirect effects of the predictors.

**Figure 1.** The mediating role of escape motive for the association of parent-adolescent relationships and problematic internet use with gender as a covariate

**Table 4***Gender Differences for Study Variables (N=585)*

Variables	Men (n = 294)		Women (n = 291)		<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Parent-adolescent relationship	89.08	19.73	89.89	19.32	-.51	.61	.04
Escape motive	19.33	5.50	19.62	4.78	-.67	.50	.06
Problematic Internet use	55.33	14.49	51.93	13.59	2.93	.00	.24

\*\**p* < .01

Table 4 demonstrates the presence of significant gender difference in the problematic internet use favouring men over women for higher use. Cohen's *d* value also indicated the large effect size. This finding supported the hypothesis about gender differences.

## Discussion

Statistics demonstrate high prevalence of problematic internet use among university students in Pakistan (Irfan & Zulkefly, 2021; Khalid et al., 2018; Zafar & Suneel, 2018). The aim of the present study was thus to address this issue of core significance. It assesses the association between parent-adolescent relationship, escape motive and problematic internet use among university students. The literature review also suggested the association between variables (Chng et al., 2015; Faltynkova et al., 2020; Kardefelt-Winther, 2014; Xinquin et al., 2010). The first hypothesis of study stated parent-adolescent relationships will be negatively correlated with escape motive and problematic internet use. The findings statistically confirmed the assumption, and the university students who perceived more attached to their parents reported having the low motivation to escape and engage in excessive internet use than their counterparts who perceived less attached to parents. Thus, it can be inferred from the findings that perceived positive or negative attachment with parents still play a significant role in shaping behavioral choices among university students.

The low magnitude of correlation coefficients and the beta value pointed towards weak predictive effects of parenting on emerging adults and young adults during university years. Nonetheless, distancing from parents with growing age and ready acceptance of peer influence is a central notion as per theories of human development. The association between escape motive and problematic internet use was also examined separately. The second hypothesis stated that escape motive will be positively associated with problematic internet use, the finding provided empirical support to the hypothesis.

As per the third hypothesis, escape motive was entered in the model to test its mediating effect on the association between parent-adolescent relationships and problematic internet use. The findings supported a statistically significant mediation effect of escape motive (see Table 3). It implies that escape motive resulting from challenging associations with parents is particularly important in explaining adolescents' problematic internet use irrespective of gender. Research evidence also indicated that escape motive due to the low parental attachment led to immersion in internet-related activities with a subsequent high likelihood of problematic and addictive internet use (Xiuqin et al., 2010). The literature also shows that when parent-adolescent relationships fulfilled a child's intimacy needs, he/she was less motivated to use the internet for escape, and, hence, the child was less likely to seek escapism for fulfilling their intimacy needs (Soh et al., 2014). Thus, the regulation of the problematic online behavior can be enhanced through stronger parent-adolescent relationships as it can control the escape motivations inside an individual from real-life problems/circumstances and enter a virtual world. Literature provide evidence that men suffer more problematic internet use than women which results in conceptualization of hypothesis 4 of the study. The findings of study support the significant gender differences in problematic internet use, favoring men for more time spent online. This aligned with previous studies as male adolescents spend more time on the internet than females (Akhter, 2013) and had a higher tendency of problematic internet use.

## Limitations and Recommendations

Certain limitations for the present study can be mentioned as it is necessary to show directions for future researches. The diversity of data was limited as it was collected from only two cities in Pakistan. Future studies may include a sample from different cities of Pakistan to test these assumptions. A cross-sectional design with quantitative data may reduce the generalizability of results due to insufficient information to conceptualize the stated associations. Future studies can collect qualitative data and adopt longitudinal research design. Researchers can also analyze information about the length of time spent online, avoidance of responsibilities, pre-test, or recollections of parent-adolescent relationships before developing excessive internet use. The variables like academic achievement, learning motivation etc. among university students could also be assessed in future along with the problematic internet use.

## Implications

The present study aimed to establish and understand the association of parent-adolescent relationships, escape motive, and problematic internet use. The results highlighted the association of poor parent-adolescent relationships with high problematic internet use through escape motive among university students. It is thus suggested that parents have a huge responsibility to shape the behaviours of university students, which can lead them to better psychosocial functioning. Parents are the ones who are better able to instil right pathways for guidance in decision-making for the behavior display of an individual. This empirical evidence has insightful implications for educators, higher education policymakers, and family psychologists. Findings could be implied to bring improvement in academic wellbeing of university students.

## Conclusion

The findings concluded that poor or insecure parent-adolescent relationships were associated with high problematic internet use through escape motive among university students. The improvement in the parent-adolescent relationship could help reduce the escape motive which potentially led to problematic internet use.

## Declaration

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**Conflict of interest.** The authors have no conflict of interest to disclose

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**Availability of data and materials.** The information about dataset and analyses for the present study is available from corresponding authors.

**Ethics approval and consent to participate.** The informed consent was taken from the study participants before administration.

**Competing interest.** The authors have no competing interests to declare.

## References

- Agishtein, P., & Brumbaugh, C. (2013). Cultural variation in adult attachment: The impact of ethnicity, collectivism, and country of origin. *Journal of Social, Evolutionary, and Cultural Psychology*, 7(4), 384-405. <https://doi.org/10.1037/h0099181>
- Ahmad, S., Nasreen, L., & Aiman, M. (2020). Shyness and psychological well-being as predictors of problematic internet use among students in Pakistan. *Psicología, Conocimiento y Sociedad*, 10(3), 7-26. <https://dx.doi.org/10.26864/pcs.v10.n3.1>
- Akhter, N. (2013). Relationship between internet addiction and academic performance among university undergraduates. *Educational Research and Reviews*, 8(19), 1793-1796. <https://doi.org/10.5897/ERR2013.1539>
- Ansar, F., Ali, W., Zareef, A., Masud, N., Zahab, S., & Iftikhar, H. (2020). Internet Addiction and Its Relationship with Depression and Academic Performance: A Cross-Sectional Study at a Medical School in Pakistan. *International Journal of Medical Students*, 8(3), 251-256. <https://doi.org/10.5195/ijms.2020.740>
- Armsden, G. C., & Greenberg, M. T. (1987). Inventory of parent and peer attachment: Individual difference and their relationship to psychological wellbeing in adolescence. *Journal of Youth and Adolescence*, 16(5), 427-454. <https://doi.org/10.1007/BF02202939>

- Asyriati, R. (2020, January). Parent Attachment and Adolescent's Problematic Internet Use: A Literature Review. In *5th ASEAN Conference on Psychology, Counselling, and Humanities (ACPCH 2019)* (pp. 124-128). Atlantis Press. <https://doi.org/10.2991/assehr.k.200120.027>
- Billieux, J., & Van der Linden, M. (2012). Problematic use of the internet and self-regulation: A review of the initial studies. *The Open Addiction Journal*, *5*, 24-29. <https://doi.org/10.2174/1874941001205010024>
- Chng, G. S., Li, D., Liao, A. K., & Khoo, A. (2015). Moderating effects of the family environment for parental mediation and pathological internet use in youths. *Cyber Psychology, Behavior, and Social Networking*, *18*(1), 30-36. <https://doi.org/10.1089/cyber.2014.0368>
- Deatherage, S., Servaty-Seib, H. L., & Aksoz, I. (2014). Stress, coping, and internet use of college students. *Journal of American College Health*, *62*(1), 40-46. <https://doi.org/10.1080/07448481.2013.843536>
- Griffiths, M. (2000). Does Internet and computer "addiction" exist? Some case study evidence. *Cyber Psychology & Behavior*, *3*(2), 211-218. <https://doi.org/10.1089/109493100316067>
- Haron, M. Z., Zeb, Z., Javed, Z., Awan, Z., Aftab, Z., & Talat, W. (2018). Internet addiction in medical students. *Journal of Ayub Medical College Abbottabad*, *30*(4 Suppl.1), S659-S663. <https://pubmed.ncbi.nlm.nih.gov/30838826/>
- Hart, J. R., Coates, E. E., & Smith-Bynum, M. A. (2019). Parenting style and parent-adolescent relationship quality in African American mother-adolescent dyads. *Parenting*, *19*(4), 318-340. <https://doi.org/10.1080/15295192.2019.1642085>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- Hooi, P. S. C. (2011). Influence of parents and peers on internet usage and addiction amongst school-going youths in Malaysia [Unpublished doctoral dissertation]. Multimedia University, Malaysia. <https://shdl.mmu.edu.my/id/eprint/3406>
- Huang, A. S. C. (2004). The bright and dark side of cyberspace: The paradoxical media effects of Internet use on gratifications, addictions, social and psychological wellbeing among Taiwan's net-generation [Unpublished doctoral dissertation]. Southern Illinois University, Carbondale. [https://doi.org/10.4103/jehp.jehp\\_148\\_20](https://doi.org/10.4103/jehp.jehp_148_20)
- Irfan, S., & Zulkefly, N. S. (2021). Parent-peer attachment, negative automatic thoughts, and psychological problems among Pakistani adolescents: A moderated mediation model. *Current Psychology*, *40*(3), 1-17. <https://doi.org/1007/s12144-021-01599-6>
- Islam, S., Malik, M. I., Hussain, S., Thursamy, R., Shujahat, M., & Sajjad, M. (2018). Motives of excessive Internet use and its impact on the academic performance of business students in Pakistan. *Journal of Substance Use*, *23*(1), 103-111. <https://doi.org/1080/14659891.2017.1358305>
- Javaeed, A., Jeelani, R., Gulab, S., & Ghauri, S. K. (2020). Relationship between internet addiction and academic performance of undergraduate medical students of Azad Kashmir. *Pakistan Journal of Medical Sciences*, *36*(2), 229. <https://doi.org/10.12669/pjms.36.2.1061>
- Kalaitzaki, A. E., & Birtchnell, J. (2014). The impact of early parenting bonding on young adults' Internet addiction, through the mediation effects of negative relating to others and sadness. *Addictive Behaviors*, *39*(3), 733-736. <https://doi.org/10.1016/j.addbeh.2013.12.002>
- Kardefelt-Winther, D. (2014). A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in Human Behavior*, *31*, 351-354. <https://doi.org/10.1016/j.chb.2013.10.059>
- Khalid, A., Qadir, F., Chan, S. W., & Schwannauer, M. (2018). Parental bonding and adolescents' depressive and anxious symptoms in Pakistan. *Journal of Affective Disorders*, *228*, 60-67. <https://doi.org/1016/j.jad.2017.11.050>



- Khan, A. A., Khalid, A., & Iqbal, R. (2019). Revealing the relationship between smartphone addiction and academic performance of students: Evidence from higher educational institutes of Pakistan. *Pakistan Administrative Review*, 3(2), 74-83. <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-63203-4>
- 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. <https://doi.org/10.12669/pjms.331.11222>
- Kim, Y., Park, J. Y., Kim, S. B., Jung, I. K., Lim, Y. S., & Kim, J. H. (2010). The effects of Internet addiction on the lifestyle and dietary behavior of Korean adolescents. *Nutrition Research and Practice*, 4(1), 51-57. <https://doi.org/10.4162/nrp.2010.4.1.51>
- Soh, P. C. H., Charlton, J. P., & Chew, K. W. (2014). The influence of parental and peer attachment on internet usage motives and addiction. *First Monday*, 19(7). <https://doi.org/10.5210/fm.v19i7.5099>
- Stanik, C. E., Riina, E. M., & McHale, S. M. (2013). Parent-adolescent relationship qualities and adolescent adjustment in two-parent African American families. *Family Relations*, 62(4), 597-608. <https://doi.org/10.1111/fare.12020>
- Tankovsha, H. (2021, February 8). Daily time spent on social networking by internet users worldwide from 2012 to 2020 (in minutes). Statista. <https://www.statista.com/statistics/433871/daily-social-media-usage-worldwide/>
- Thatcher, A., & Goolam, S. (2005). Development and psychometric properties of the Problematic Internet Use Questionnaire. *South African Journal of Psychology*, 35(4), 793-809. <https://doi.org/10.1177/008124630503500410>
- Winskel, H., Kim, T. H., Kardash, L., & Belic, I. (2019). Smartphone use and study behavior: A Korean and Australian comparison. *Heliyon*, 5(7), <https://doi.org/e02158>. <https://doi.org/10.1016/j.heliyon.2019.e02158>
- Xiuqin, H., Huimin, Z., Mengchen, L., Jinan, W., Ying, Z., & Ran, T. (2010). Mental health, personality, and parental rearing styles of adolescents with an Internet addiction disorder. *Cyberpsychology, Behavior and Social Networking* 13(4), 401-406. <https://doi.org/10.1089/cyber.2009.0222>
- Young, K. S. (1999). Internet addiction: Symptoms, evaluation, and treatment. *Innovations in Clinical Practice: A Source Book*, 17(17), 351-352.
- Zafar, B., & Suneel, I. (2018). Relationship between personality traits, attachment styles and internet addiction among Pakistani university students. *International Journal of Social Sciences and Educational Studies*, 5(1), 96-109. <https://doi.org/10.23918/ijsses.v5i1p96>
- Zhu, J., & Mok, M. M. (2020). Predictors of students' participation in internet or computer tutoring for additional instruction and its effect on academic achievement. *Journal of Computer Assisted Learning*, 36(5), 729-740. <https://doi.org/10.1111/jcal.12440>
- Zonash, R. (2017). Perceived parental attachment styles predicting self-efficacy in adolescents. *Journal of Behavioral Sciences*, 27(1), 75-92.