THE EFFECT OF PROBLEMATIC INTERNET USE SCALE (EPIUS): DEVELOPMENT AND PSYCHOMETRIC ANALYSIS

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ABSTRACT

*This study aimed to assess the effects of problematic internet use (PIU) among young adults, focusing on the development of a culturally relevant scale grounded in Davis's (2001) cognitive-behavioral model. A total of 250 undergraduate students (46 males, 204 females; age range: 18-26 years, Mage = 21.22, SD = 1.73) from public and private universities in Lahore, Pakistan, were recruited via convenience sampling. The **Problematic Internet Use Scale-Urdu (PIUS-U)** was developed through four stages: domain identification and item generation, expert validation, pilot testing, and exploratory factor analysis (EFA). Psychometric evaluation demonstrated excellent internal consistency (α = .82) and temporal stability (r = .94). EFA revealed three factors: **psychological effects**, **social effects**, and **academic effects** of PIU. Pearson correlations confirmed the content validity, while the Kaiser-Meyer-Olkin (KMO) and Bartlett's test ensured sample adequacy. Convergent validity was moderate (r = .55, .56) with related constructs, while discriminant validity showed weak or no association with unrelated constructs (r = -.20). The scale's internal consistency was robust (Cronbach's α = .850). These findings suggest that the PIUS-U is a reliable and valid tool for assessing PIU in Pakistani youth, capturing its psychological, social, and academic dimensions. This instrument fills a critical gap in culturally relevant measures of PIU and offers a solid foundation for future research and interventions in this population.*
Keywords: Problematic Use of Internet, Academic Effect, Social Effect, Psychological Effects, Exploratory Factor Analysis.

INTRODUCTION

Internet use has become an integral part of modern-day society, with over half of the world's population using the internet regularly (Statista, 2022). PIU is characterized by an excessive and compulsive use of the internet that negatively affects an individual's daily life, leading to various psychological and behavioral problems (Chen et al., 2020). University students are among the groups most susceptible to PIU due to their heavy reliance on the internet for academic research and social networking (Alabi et al., 2021). PIU can lead to negative academic outcomes such as decreased academic performance, poor time management, and reduced productivity (Alabi et al., 2021; Seo et al., 2019). Additionally, PIU has been linked to mental health problems such as depression, anxiety, and social isolation (Chen et al., 2020). Understanding the effects of PIU on university students is essential for promoting healthy internet use and improving academic outcomes and mental health.

The Davis Cognitive and Behavioral Model (2001) has been used to understand the development and maintenance of problematic internet use, also known as internet addiction. According to this model, problematic internet use develops through a similar process as phobias, involving classical conditioning, operant conditioning, and cognitive factors (Davis, 2001). During the classical conditioning stage, an individual may begin using the internet for a specific purpose, such as communication or entertainment. Over time, the internet use becomes associated with a pleasurable experience, leading to the development of a conditioned response. The operant conditioning stage involves the reinforcement of the internet use behavior which becomes more ingrained, leading to the maintenance of problematic internet use. Finally, the cognitive factors involve the individual's beliefs and expectations about internet use. For example, an individual may believe that they need to be constantly connected to the internet to stay informed or to maintain social relationships further reinforcing the behavior and contribute to the development and maintenance of problematic internet use.

Studies have shown that individuals who engage in problematic internet use report higher levels of anxiety and depression (Dong et al., 2013). Furthermore, problematic internet use has been linked to poor academic performance and reduced social interaction (Kuss & Griffiths, 2011). One study found that problematic internet use was more prevalent among university students than among the general population (Bozoglan et al., 2013). Several studies have investigated the relationship between problematic internet use and personality traits. For example, one study found that individuals with higher levels of neuroticism and extraversion were more likely to engage in problematic internet use (Ko et al., 2012). Another study found that individuals with higher levels of impulsivity and sensation-seeking were also more likely to engage in problematic internet use (Ko et al., 2012).

There are several scales available to measure problematic internet use. One commonly used scale is the Internet Addiction Test (IAT) developed by Young (1998), which measures the degree of internet addiction based on the respondent's self-reported symptoms. The IAT consists of 20 questions and has been used in various studies to assess the prevalence and severity of internet addiction (Chou et al., 2017; Tsai et al., 2020).

Another scale is the Problematic Internet Use Questionnaire (PIUQ) developed by Demetrovics et al. (2008), which assesses the different aspects of problematic internet use, including preoccupation, compulsive use, tolerance, withdrawal, and negative consequences. The PIUQ has been used in several studies to investigate the relationship between problematic internet use and various factors, such as personality traits and mental health (Ko et al., 2012; Yang et al., 2020). The Compulsive Internet Use Scale (CIUS) developed by Meerkerk et al. (2009) is another scale that measures the degree of compulsive internet use. The CIUS consists of 14 items and assesses the respondent's perceived loss of control over internet use, neglect of social activities, and negative consequences of internet use. The CIUS has been used in studies investigating the prevalence and risk factors of compulsive internet use (Van Rooij et al., 2012; Yu et al., 2024).

There are several reasons for developing and validating the Effects of Problematic Internet Use Scale in Pakistan. Firstly, research has shown that problematic internet use is a growing concern worldwide, and Pakistan is no exception (Ahmad et al., 2019; Rasool et al., 2018). Secondly, while several scales have been developed to measure problematic internet use, most of them have been developed in Western countries and may not be suitable for use in Pakistan due to cultural differences (Akram et al., 2021). Thirdly, there is a lack of reliable and valid scales to measure problematic internet use in Pakistan, which makes it difficult to assess the prevalence and impact of this issue (Rasool et al., 2018). Finally, having a valid and reliable scale to measure problematic internet use in Pakistan would be beneficial for researchers, clinicians, and policymakers in developing effective interventions to address this issue in the country (Akram et al., 2021). Therefore, this study was carried out to develop and validate a scale to measure the effects of problematic internet use in Pakistani university students as it is necessary and relevant.

Methodology and Results
Study 1: Item Generation and Content Validation of The Effect of Problematic Internet Use Scale-Students (EPIUS)

Item pool through focus group
First of all, focus group was organized in Comsats university Islamabad, Lahore campus with young adults of different departments currently studying in the university to carry out discussion about negative uses of internet, its different social networking sites and its effects on the psychological, academic, personal, and social life of young adults. Furthermore, in order to check their views about the phenomenon in questions. Purpose to conduct this focus group was to obtain the understanding of this phenomenon, participating point of view, experiences and cultural attitudes toward the internet and its various developed applications. Semi structured questionnaire was prepared to be used in focus group session. Along with the researcher there was one moderator who took notes and wrote down the important points of the discussion Participants were provided with definitions and explanation of the phenomenon in Urdu. The session was continued for one hour and was recorded. Qualitative analysis was carried out and with the help of recorded tapes, and notes 39 items were deducted. Initially expert validation was considered.

Expert Validation of "The Effect of Problematic Internet Use Scale"
After exploration of culturally appropriate phenomenology and item pooling 39 items were typed in the form of a 4-point Likert scale to be rated by 5 psychologists with 1 "very weak" to 4 "very strong" item. Six psychologists were approached from COMSAT's University Islamabad Lahore Campus for rating the scale items deducted from the focus group session. Among them two were PhD, clinical psychologist with one MS in clinical psychology two Phd were in applied psychology, 1 MS in health psychology and 1 Phd (fellow) in educational psychology. Psychologist were asked to rate the items according to their clarity and relevance to the construct in question and difficulty level. They were also asked to rephrase the items which according to them were vague, double barreled, incomprehensive or irrelevant. On the basis of their ratings overall the items were highly rated ("4") and very few items which were repeated and vague were excluded as per their suggestions. The final product was a 33-item measure of the Indigenous Scale "The Effect of Problematic Internet Use Scale" is included in the scale to be administered for pilot testing

Study 2: Pilot Testing of The Effect of Problematic Internet Use Scale-Students (EPIUS) Participants
50 students (25 males & 25 females) ranging in age from 18 to 24 (Mage = 74.37, SD =11.33) years were selected from different department of COMSAT's University Islamabad Lahore Campus through convenient sampling.

Procedure
33 items with a 4-point Likert scale indicating 0 "Strongly Disagree", 1 "Disagree", 2 "Agree" and 3 "Strongly Agree" was administered on the undergraduates. Before the administration of scale, a written consent form was given to the participants with a brief introduction of the study. After introducing the nature and purpose of the study, time taken to complete the study with the value of their contribution. Participants were asked to sign the written consent form as well. Demographic information sheet which included name, social economic status, birth order, gender, age, and number of siblings along with 33 item scale was administered. Participants were asked to rate items with references to its applicability on them, and they were given the right of withdrawal from the study anytime.

Results
The reliability statistics of this measure was carried out to calculate scale consistency. Results were calculated via IBM SPSS Statistics. Reliability analysis revealed that the scale had Cronbach Alpha value of .82 indicating good Internal consistency. Items with correlation value of below .4 were deleted. With the help of items total statistics Item 1, 5, 14, 21, 22, 24, 25, 26, 29, 31, 32, and 33 were deleted on the basis of Cronbach's Alpha if items deleted.

Table -1
Internal consistency of the effect of problematic use of internet scale after pilot study (N=50)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.82	.82	33

Study 3: Exploratory and Confirmatory Factor Analysis
Exploratory Factor Analysis
Participants

250 undergraduates (47 males & 203 females) ranging in age from 18-25 (Mage= 21.22 SD=1.73) through convenient sampling were selected from different departments of government and private universities of Lahore, Pakistan. The university included; Lahore College for Women University, Punjab University, Comsats University Islambad Lahore, Campus, University of Education, University of Lahore and Government College Lahore. Participant were excluded from the study if: - (a) had any physical and psychological illness (b) were above the age of 25 or below 18 years, and (c) those who didn't have access to internet.

Procedure

Firstly, permission letter was issued by the head of the department so that entry within different private government universities could be possible for collecting data. 21 items of 4-point Likert scale with 0 "Strongly Disagree", 1 "Disagree", 2 "Agree" and 3 "Strongly Agree" based scale was administered on the undergraduates from different departments of private and government universities. Before the administration of scale, a written consent form was given to them with a brief introduction. After introducing the nature and purpose of the study, time's taken to complete the study with the value of their contribution; participants were asked to sign the written consent form as well. The demographic information sheet which included name, social economic status, birth order, gender, age, and number of siblings along with 21 item self-developed scale was administered. Participants were asked to rate items with references to its applicability on them, and were given the right of withdrawal from the study anytime.

Results

The final stage of verifying the items and finalizing items with a factor structure was based upon the exploratory factor analyses after data reduction. Initially, within "the effects of problematic internet use scale" there were 21 items assessed for factorability. Analyses revealed that every item was related to each other with .3 correlations, hence signifying the factorability. Kaiser-Meyer-Olkin is used to check sample adequacy which is found to be .91 signifying the adequacy of sample for factorability assuring that the sample is adequate for the factor analyses. Communalities for each item were above .3 indicating that the items shared some common variance with each other. Hence, the exploratory factor analyses suit the items suggested by indicators. Rotated component matrix was carried out for determining the factors underlying the scale. Scree plot was used to determine the fraction of variance within the data and it is basically a line of plot within components of analyses (George, 2010). Hence, three factors have been extracted with very little variance of 22.718. the total scale consists of 3 subscales with 10 items loaded on factor 1, and 5 items loaded on factor 2 and 3 each loading to the development of a 20-item measure of "The Effect of Problematic Internet Use Scale".

Table - 2
Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's test of sphericity

	KMO	Bartlett's Test		
		Chi-Square	Df	Sig.
Effects of Problematic Internet Use Scale	.91	2526.07	190	.000

Note. N=250

Table represents sample adequacy of measure i.e. Kaiser-Meyer-Olkin (KMO) to be be. .91. That is above the suggested value .6 explaining sample adequacy for factor analysis. Bartlett's test is also significant.

Table 3

Rotated Component Matrix for the Effects of Problematic Internet Use Scale (EPIUS)

	Component		
	1	2	3
Item 14	.699		
Item 10	.686		
Item 1	.678		
Item 9	.652		
Item 15	.650		
Item 13	.625		
Item 11	.615		
Item16	.586		
Item 12	.550		
Item 5	.526		
Item 20		.741	
Item 19		.728	
Item 18		.686	
Item 21		.610	
Item 6		.595	
Item 3			.756
Item 2			.730
Item 4			.591
Item 17			.528
Item 7			.500

Note. N=250 Note: (values >.5 are suppressed) Extraction Method: Principal Component Analysis.

Study 4: Reliability and Validity Analysis
Participant and Sample Strategy
Two hundred and fifty (166 male & 84 female) ranging in the age from 18 to 26 ((M=1.34 SD=.473) through convenient sampling were chosen from varying departments of private and government universities in Lahore, Pakistan. Young adult students studying in universities aged 18-26 were selected to participate in the present study. Participants Below and above these age ranges were excluded. Moreover, participants with any psychological dysfunction, physical disability, or psychology students were excluded from the study doing part-time jobs and those who did not have internet access.

Measures
Demographic information form
The demographic information form incorporated all the essential detail of the participant, including name, age, gender, education, religion, family system, marital status, mother tongue, Socioeconomic status, city/province, family's monthly income, presence of any diagnosed psychological disorder and hours of internet use were added in demographic form.

Inform consent form
In the informed consent form, the aim of the research will be explained to the participant, along with they will be asked for their voluntary participation. Moreover, their written agreement for participation will also be included.

Problematic Internet Use Scale
This scale of Problematic Internet Use consists of 20 items with three subscales named the emotional, behavioral, and academic effects of Problematic Internet Use. Concerning our culture and Urdu language, an attempt is being made to develop a scale of the Pakistani student population based on the Davis model (2001). This scale will best suit the need of the youngsters of Pakistan. This measure was developed specifically for the youngster of their own culture. Items were typed in the form of a 4-point Likert scale with 1 "Strongly Disagree," 2" Disagree, 3 Agree and 4, Strongly Agree. This measure was

developed specifically for the young population of our culture.

Compulsive Internet Use Scale (Meerkerk et al., 2009).

The compulsive Internet Use Scale is based on the DSM-IV approach to drug compulsion and pathological gambling. It contains 14 Likert rating items (0, never; 1, rare; 2, sometimes; 3, usually; 4, very often) and has a theoretical value of 0-54. Items cover five symptoms of addiction: loss of control, withdrawal, mood swings, busyness, and conflict. Internal reliability of the scale is .89. The Dutch version of CIUS was translated into German and verified by translating back into English. (Guertler, 2014)

Generalized Problematic Internet use (GPIUS-2) (Probierz& Galuszka, 2020)

The GPIUS-2 is a small reporting questionnaire that assesses net dependence established on a behavioral model. Results from the present research show that the GPIUS2 sub-scales are consistent as well as the scale has good quality construct validity. It is an average of 15 items scale, and its reliability measured with Cronbach's alpha was 0.89.

Emotions Regulation Questionnaire (Gross & John, 2003)

Emotions Regulation Questionnaire is a 10-item scale to assess the use of dual directive approaches in handling emotions animated suppression (4 items) and cognitive reassessment (6 items). The scale uses a 7-point response setup ranging from one to seven. A more excellent compound score on every one of these subscales symbolizes the everyday use of each particular guideline strategy. Gross and John (2003) stated good internal consistency (0.69) coefficients for the questionnaire. The current essential consistencies for reappraisal and suppression subscale are 0.81 and 0.71.

Life Satisfaction (Moghal, 2012)

It has three subscales that are optimistic effect (twelve items), pessimistic Affect (twelve items), as well as Life Satisfaction (five items). Optimistic and pessimistic Affect subscales ask participants to show how repeatedly they occurred given effects in the past four weeks by scoring items on a 5-point rating scale ranging from never (0) to always (4). The life satisfaction subscale is used to assess the present study's well-being.

Procedure

First of all, the participants were given informed consent. They were informed about the aim of the research and the time taken to fill out the questionnaire, and their confidentiality was ensured. Afterward, give the overview along with an informed consent form; participants fill out a demographic sheet and are asked to complete Problematic Internet Use Scale 20. Generalized Problematic Internet Use Scale-2, Compulsive Internet Use Scale, Life Satisfaction, and Emotion Regulation were used after ensuring their permission was granted by the authors. Throughout the study, ethics were followed for gathering data and conducting research. Participant has the right to leave participation at any moment.

Statistical Analysis

The statistical analysis was performed on IBM SPSS for Windows, Version 24. The demographic characteristics of the participants were analyzed through descriptive statistics. Internal consistency of the Problematic Internet Uses Scale was analyzed through Cronbach's α, and the significance of statistics was set at a p value of ≤ 0.05. Pearson Product Moment Correlation of Coefficient was calculated to measure the test-retest reliability after two weeks and determine the scale's convergent and discriminant validity with other measures.

Reliability Assessment Table 4
Reliability Statistics of Problematic Internet Use Scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
.850**	.851**	20

Note. N=250
The table shows that the internal consistency of the Problematic Internet Use Scale (PIUS) is Excellent.

Table 5
Test-Retest Reliability of Problematic Internet Use Scale PIUS (N=250)

Variable	R	Sig
PIUS	.943**	.000

Note. N=250 **Correlation is significant at the 0.01 level (2-tailed).
The table represents the temporal stability of scale,
which is excellent

Validity Assessment
Table 6
Convergent validity of Problematic Internet Use Scale with Compulsive Internet Use Scale and Generalized Problematic Internet use Scale.

Variable	PIUS	Sig
Compulsive Internet Use Scale	.554**	.000
Generalized Problematic Internet Use Sscale-2	.556**	.000

Note. N=250 **Correlation is significant at the 0.01 level (2-tailed).
The table shows that the Problematic Internet Use scale has a strong positive Correlation with the Compulsive Internet Use scale and Generalized Internet use scale. At the same time, CIUS and GIUS are significantly associated with PIUS at a strong level.

Table 7
Discriminant validity of Problematic Internet Uses Scale with Life Satisfaction Scale

Variable	Life Satisfaction	Emotion Regulation	Sig
PIUS	-.20**	.002	0.01

Note. N=250, ** Correlation is significant at 0.01 levels (2-tailed)
The table shows that the Problematic Internet use Scale has no association with emotional regulation and a significantly weak negative association with life satisfaction.

Discussion
The purpose for conducting this study was to construct an indigenous scale on Effects of Problematic Internet Use. Exploratory factor analyses along with good findings yielded high-quality assessment of the scale of Effects on Problematic Internet Use scale. Thus, the scale is a self-report measure based on cognitive-behavioral model of Davis, 2001. Use of internet is global now-a-days and every student is somehow involved in the use and problematic use of internet varying among students on the base of their interests regarding different internet sites and its application. This scale is expecting reliable, for measuring problematic uses among student's population. Apart from the development of a reliable and valid measure this scale will lead to the development of research field.

Scale is expecting to be developed with good validity and reliability.
First step includes the item pooling and selection by selecting items through exploration of the phenomenon in focus group and interviews with expertise. Second step includes experts' validation of the selected items where qualified experts have rated the selected items then pilot study was conducted for rating the applicability of the items on students' population. A further, exploratory factor analysis of the developed scale was used to check validity and uni-dimensionality.
This scale "Effects of Problematic Internet Use" consists of 20 items with three subscales named the emotional effects, behavioral and academic Effects of Problematic Internet Use. With reference to our culture, and Urdu language an attempt is being made for developing a scale upon Pakistani student's population based on the Davis model (2001), and this scale will best suit the need of young adults of Pakistan.
An exploratory factor analysis was carried out to measure the dimensionality of the measure and it

shows that the items are correlated with each other with little variance, for factor loading the sample was suggested adequate according to KMO and Bartlett's test of sphericity, and for carrying out exploratory factor analyses too. Initially the KMO Bartlett's was very good as it was .92, item with coefficient less than .5 was sort by size during analyses and as a result of it item 8 was excluded. Due to this KMO Bartlett's reduced to .91 the perfect value after excluding item 8. After deleting item 8 the final scale has three factors with three subscales.

Rotated component matrix showed the items loaded on the three factors. The items loaded in factor one is related to the emotional aspects of using the internet and therefore named as emotional effects of Problematic Internet Use. Also, the analyses revealed the items loaded on factor one are 1, 12, 13, 11, 15, 16, 5, 9, 14, and 10 with variance of 22.718. Participants who would score high at these factors would have emotional disturbances related to Problematic Internet Use. When students get engaged at online activities, they start to ignore their family time and make internet their priority over families, they start feeling irritated, angry, and frustrated when they don't get internet. They prefer establishing online relations rather than spending time with families and ignore relationships in their real life. They feel comfortable making friends online rather than establishing friendships in real life which helps them to ignore the troubles they face in daily life for a period of time.

On factor two, items loaded are 6, 20, 19, 18, and 21 and the items are representing the behavioral problems of students' people who will have higher scores at these items, would have behavioral problem because of engagement in different internet activities. The internet excessive use cause aggression and replace real life friends with online friends. Internet provides a platform to its users for making friends but also a platform where users can express aggression and their negative attitude towards other.

On factor three, includes loaded items are 2, 3, 4, 7, and 17. Higher scores at theses item will have academic problems, trouble balancing time for their academic tasks, and eventually their performance on academic tasks gets affected. Because of the use of internet, the users get lazy, and forget about their academic tasks. Hence their daily academic tasks are negatively affected and they perform low at assignments and projects that's why the factor is named as academic effects of Problematic Internet Use.

Parents remain worried because of smart phones availability with internet connectivity among adolescents causing them to get noninvolved in real social life and developing behavioral and academic issues, as they spend too much time online being hooked up at face book and spending excessive time on social networking sites (Clark, 2004 & Tsitsika, 2011). Parents of adolescents who focus more on academic achievement and pay inadequate attention, their children become psychologically unstable due to lack of support, higher expectation from parents and little or no parental warmth. Hence, problematic internet use becomes the source for compensating these deficiencies, leads to building relationships, gain a temporary sense of belonging and affection and maintain their self-fulfillment via the virtual world by internet (Haridakis & Kim, 2009). Miller and plant (2010), reported that researches claim that parenting style is related to adolescents' behaviors as family has an important role in adolescent's socialization and problematic behaviors (Barker, 2004).Problematic behaviors result when there is low family involvement and inadequate monitoring from parents with higher family conflicts according to the model on adolescent's problematic behavior (Duncan, 1999).

In a society the behavioral and academic life change in the life of adolescents is because of the exploration and latest advancements of the internet (Nain,2014). Excessive internet surfing is wasting of real time but students lose their nerves if internet disconnects while they are engaged with social networking sites. They always want to be online without any one's interruption; ultimately their academic performance is adversely affected due to problematic use of internet (Nain, 2014).Further, researchers concluded that due to internet, users spent most of their time surfing the web and due to excessive use of internet they make less contact with their social environment (Erbring, & Nie, 2000).

Young (2014) explains that adolescents stay's online without any reason, and face following symptoms; negative emotions after staying online more than required, preoccupied with internet, unsuccessful attempts for decreasing internet use,

increased tolerance, withdrawal symptoms and lying about online activities (Young, 1996). Epidemiological studies show that mood/anxiety disorder and problematic internet use has high level of co-morbidity (Shaw & Black, 2006), and between the severe problematic internet use and psychological distress there is positive correlation.

Conclusion

This research was conducted to develop a culturally relevant and appropriate scale for assessing and measuring the risks of problematic internet use among young adults' and their attitude toward internet and its sites use. The scale on "The Effect of Problematic Internet Use Scale" was developed in native language Urdu with good reliability and validity because there was no single culturally relevant scale measuring the problematic internet use as compared to earlier studies providing quantitative scales having their own cultural standards and consistencies that didn't fit properly in our culture. 21 item based self-developed scale has promising psychometric support and strong theoretical basis, further has three subscales named as emotional, behavioral, and academic effects of Problematic Internet Use. Hence, it is the most efficient and precise measure developed in Pakistani culture with subscales not discoursed in previous scales. The scale is efficient for measuring the risks of problematic internet use among Pakistani student, allowing researchers evaluating various dimensions of problematic use of internet and has focused on student population as they have natural affinity towards internet and are considered as risky population affected by the contextual and activity related factors. Development of problematic internet use, influences the academic life, emotional health and behavioral aspects of students and this culturally relevant measure can be helpful in discriminating between those at risks of problematic internet use from those not at risk, also it takes less time to be filled out. Beyond different concepts of problematic internet use this research explains specific aspects related to problematic internet use. Further valid studies are required to advance the usefulness of this scale in detecting this emerging health concern among young students' population and this research will helpful for other researchers.

Limitations with Suggestion

Like all the studies conducted previously our study also has some limitations for which recommendations are also given. The sample is just collected from Lahore city of Pakistan which should have been collected from different provinces of Pakistan in order to generalize the results on Pakistani student population. Casual deduction cannot be made as our data was limited in being correlation design of the study. The sample size of the study was small (N=250), also the sample mainly consist of female students and not male student due to lack of time and access to male students this can also be collected from male population for having a clearer picture, for balancing, and for generalizable results.

The sample size should be increased and collected from different resources for having a good reliable and valid construct as the time was also limited for testing the reliability and validity of the scale and it is also a limitation of the study. The sample is just confined from the university students it should be collected from the colleges for increasing generalizability of results. Finally, the scale is a short measure with good psychometric properties and can be used in educational setting for assessing risks of problematic internet use among student's population. The scale is developed in Urdu language and proves beneficial within Pakistani culture. For future the subscales can be increased and research can be conducted upon this scale with new variables.

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