

# **Role of perceived social support as a predictor of internet addiction with the mediating effect of life satisfaction among international students in China**

Caina Li, Maaza Saeed, Shabani Habimana

*School of Psychology, Shaanxi Normal University, Shaanxi Provincial Key Research Center of Child Mental and Behavioral Health, Shaanxi Normal University Branch of Collaborative Innovation Center of Assessment toward Basic Education Quality at Beijing Normal University, Xian China.*

## **Abstract**

*In the experience of studying abroad the only thing which keeps students connected with their family and friends is the internet, but relying mostly on it further leads to internet addiction. The current study is an attempt to navigate the mediating effect of life satisfaction and the role of perceived social support as a predictor of internet addiction through moderator ethnicity condition<sup>1</sup>African, <sup>2</sup>South Asian foreign learners in Xian, China for at least six months. Questionnaire protocol comprises of demographics and The Multidimensional Scale of Perceived Social Support (MSPSS) to quantify (PSS), Satisfaction with life scale to measure (LS), Problematic and risky internet use scale (PRIU) to assess internet addiction of the participants. Findings revealed (a) significant relationship between perceived social support and life satisfaction and (b) significant negative association between life satisfaction and internet addiction. Furthermore, moderation mediation analysis discloses that there is a direct effect of PPS to IA, and the indirect effect of PSS to IA through LS for both conditions of ethnicity (<sup>1</sup>African, <sup>2</sup>South Asian). Overall, these findings highlighted implications on international student's internet addiction.*

**Keywords.** *Perceive Social Support, Life satisfaction, internet addiction*

Today, the world is the hub of technology, and the Internet is the most commonly used medium between students in general, and students studying away from home for entertainment, information, social and educational communication. (Abdel-Salam, Alrowaili, Albedaiwi, Alessa, & Alfayyadh, 2019; Saw, Abbott, Donaghey, & McDonald, 2012). It leads to the predominance of Internet usage, which further paves the way for a new form of Internet addiction. (Çardak, 2013). And the latest internet literature shows that the internet navigates and makes students addicted to the Internet (Manasijevic, Zivkovic, Arsic, & Milosevic, 2015; Upadhayay & Guragain, 2017).

The theoretical ground of internet addiction can be traced from a cognitive behavioral model of pathological internet use by Devics (2001), He proposes that people find the virtual world as their companion to relax their repetitive ideas about entertainment, the environment, relationships, which in effect generate excessive use of the internet. Moreover, theorists belonged to the behavioral school of thought predicament that the nature of humans is mold by circumstances of his surroundings through (classical/operant) conditioning (Shahnaz & Karim, 2014).

As far as classical conditioning is concerned, our behaviors are linked to internet use, e.g.

using the internet in free time, traveling, or before sleeping, so whenever we find ourselves in those conditions, we automatically surf the internet. While in operant conditioning, it reduces the multiple emotional states and strengthens the prevalence of the internet over a long time. (Beard, 2005; Daniel, Shek, Rachel, Sun, & Lu, 2013; Davis, 2001; Serin, 2001; Shahnaz & Karim, 2014).

Research on international students denotes that they splurge most of their daily time while using social media (Kim, Yun, & Yoon, 2009). And the most popular mode of internet usage among them is to stay in touch with their family friends and loved ones (Saw, Abbott, Donaghey & McDonald, 2012; Hall & Sivakumaran, 2014). A recent study suggests that among south-east Asians problematic internet usage is found to be "0 to 47%", excessive usage is ranged from "7.4% to 46.4%" (Balhara, Mahapatra, Sharma, & Bhargava, 2018). A survey on an increase of internet usage from 9 states was conducted and "South Africans and Nigerian" came second which shows people came online in 'every hour waking hour at least once' (Kohli, 2014).

Internet addiction has been reported as having causal grounds which have been seen as an external factors such as perceived social support (Bilgin & Tas 2018; Oktan, 2015) and psychological or internal factor such as life satisfaction ( Samaha & Hawi, 2017). However, communication can be viewed as social help in terms of external factors connecting the internet with communication mode (Swickert, Hittner, Harris, & Herring, 2002).

Perceived social support is the communal and emotional support that the individual possesses from others (Cevik & Yildiz, 2017). Research literature suggests that inadequate social support has a negative impact and should also predispose an element of proneness to Internet addiction. (Esen & Siyez, 2011; Liu & Kou, 2008; Wu, 2004; Yeh, Ko, Wu, & Cheng, 2008).

In terms of theoretical background, Sullivan interpersonal theory by Sullivan (1953), emphasis interpersonal relation in personality formation. Liu and kou (2008), support the Sullivan view and linked dis affectionate relationship with problematic internet usage. Similarly, Crux of self-determination theory SDT by Deci and Ryan (1985), symbolize unmet psychological needs have had adverse consequences. (Chak & Leung, 2004; Song, Larose, Eastin, & Lin, 2004; Wan & Chiou, 2006; Young, 1998).

Perceived social support leads to another phenomenon related to the internal psychic variable, which also contributes to the positive and negative connotation of life satisfaction with IA (Akanni & Oduaran, 2018; Cao, San, Wan, Hao, & Tao, 2011; Chen, 2012; Salarvandet et al., 2017; Ko, Yen, Chen, Chen, & Yen, 2005). Shin and Johnson (1978), illustrate life satisfaction as a distinguishing factor that makes individuals consciously aware of their life situations and either satisfied with their position or not.

In the light of the Self-Determination Theory (SDT) Deci and Ryan (1985), a series of concomitant distorted self-images, life satisfaction and excessive use of the Internet among students and in the general population emerged as a sign of unfulfilled needs. (Andrews & Withey, 1976; Chak & Leung, 2004; Ma.Wu, 2016; Shahnaz & Karim, 2014; Young,1998). Research has shown that students with a lower level of satisfaction are more likely to use virtual networks to enhance their personality characteristics(Ellison, Steinfield, & Lampe, 2007). But with a more positive outlook on life, it can be reduced (Ko, et al, 2005).

There are research grounds regarding perceive social support with IA (Esen & Siyez, 2011) and IA with life satisfaction (Pontes, Szabo. & Griffiths, 2015)

Participant and Procedure. However, there is limited evidence that the direct link between all variables, especially life satisfaction, is not effectively studied as a mediating factor between perceived social support and IA. Current research is intended to explore the mediating effect of life satisfaction on PSS and IA by moderating the effect of ethnicity on international students.

## Method

The statistical population of the present cross-cultural study has consisted of N= 277 participants comprised of two different cultures, Africa (n = 120, 57female, 63 male) and south Asian (n = 157, female 82, male 75) studying in different universities of Xian, China. With the overall age range of (Mean 1.40 = SD .497) 20-25 years (55.7%), 25 to more (35.8%).

The snowball sampling technique is used to collect the data. The survey is conducted via a questionnaire survey website (<https://kwiksurveys.com/>). Access to the participants was provided by sending a questionnaire link to known African and South Asian participants through a we-chat (Social platform) or by contacting them personally with the questionnaire protocol. Some studies have found that this way of collecting data online is reliable (Armstrong, Gallig, & Critchley, 2011; Kong, Zhao, & You, 2012).

Reachable participants were also asked to spread the link or questionnaire protocol with their country-mates studying in Xian, China. At the beginning of the questionnaire, protocol participants were debriefed and assured of confidentiality. Students who have been studying in China for the last six years and more were included in the research. If students staying less than six months, they were excluded because they did not meet the criteria of our research.

## Measures

The questionnaire protocol of the current study has been compromised on several measures such as perceived social support, satisfaction with life, and problematic & risky internet usage questionnaires. Besides, all participants were competent in the English language so that the English version of all the questionnaires was used.

The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). it is a 12-item self-report instrument designed to assess a person's perception of the adequacy of social support from three sources: friends, family, and significant others. There are four items per sub scale, each with response options ranging from 1 - very strongly disagree to 7 - very strongly agree. The internal reliability has been widely tested and showing strong internal consistency of the total score for the measure 90.93-0.98) and for the sub scales 90.91-0.81) (Zimet, Powell, Farley, Werkman, & Berkoff, 1990)

Satisfaction with life scale (Diener, Emmons, Larsen, & Griffin 1985). It was used to assess participants' life satisfaction. This scale includes 5 items and rated on a five-point Likert scale (1 = "strongly disagree" to 7 = "strongly agree"). The sample items are, In most ways, my life is close to my ideal, The conditions of my life are excellent. Items are then summed into a mean score with a high score indicating high levels of life satisfaction. The coefficient alpha for the scale has ranged from .79 to .89, indicating that the scale has high internal consistency and good test-retest correlations (.84, .80) was reported by Pavot and Diener, (2008).

Problematic and risky internet use scale (Jelenchick, Eickhoff, Christakis, Brown, Zhang, Benson, & Moreno (2014). Describes nature of (PIU) as a part of adolescent and young adult's health, it consists of 18 items and it comprised three sub scales namely, (1) "social impairment ( item 1-6), which assesses the effect of internet use on societal conversations on both offline and online mode of interaction". (2) "Emotional Impairment (items 7-11), it assesses the degree of emotional attachment to Internet use". (3) "Risky/Impulsive Internet Use (items 12-18), measures salient problematic behaviors regarding Internet use".The chronback alphas for the three subscales were 0.89, 0.90, and 0.88, reported by Jelenchick and Moreno (2013).

## Results

The sample comprised of total 277 (91.7%), in which 120 (43.7%) was African (Female 57, Male, 63) whereas 157 (48.0%) was south Asia participants.73 (22.3%) (Female 82, Male 75), with the age range of (Mean 1.40 = SD .497) 20-25 years was (n= 170, 55.7%), 25 to more was (n= 107,35.8%) participant's. In terms of the college year, 70 (22.3%) participants were freshman, 85(29.1%) was sophomore, 118 (39.1%) was senior and only 4 (1.2%) was junior. For the duration to stay in china about less than 6 months 92(29.7%), about a year 118(40.7%), and for more than a year stay in china was 66(20.8) participants. Furthermore, there were 154(51.7%) participant's who specifies they are in a relationship whereas 120 (39.1%) reported they are not in a relationship whereas only 3 (.9%) don't specify any category. 137(46.5%) participant's reported they are living with roommates whereas 140 (45.3%) reported they're not living with roommates. In addition, 94(32.1) indicated that their roommates were good, while a significant number of 179 (58.4) indicated that their roommate was not good. Approximately less than 6 months 149(47.4), 117(35.5) almost a year, whereas more than a year 28(7.3) the living duration of the participant with roommates was reported.

Means, standard deviations, and bivariate correlations for all study variables are presented in Table 1. As expected, perceived social support was positively correlated with life satisfaction and Internet addiction. Moreover, there is a significant negative correlation between life satisfaction and internet addiction.

**Table 1**

*Descriptive's and Correlation Statistic between all the Study Variables*

Variables	M/SD	M/SD	M/SD	1	2	3	4
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	Africa	South Asia					
Perceived social support	3.19(2.1)	4.32(.94)	3.20(1.00)	1			
2.Life satisfaction	2.09(.89)	3.57(.76)	3.18(.97)	.179**	1		
3.Internet addiction	2.50(.71)	2.53(.67)	2.50(.68)	-.238**	-.220**	1	
4. Ethnicity	1.42 (43)	1.56 (48)	1.45(57)	.158**	.191**	.323**	1

Note \*\*\*  $P < 0.01$ .

Testing the moderated mediation analysis procedure by Baron & Kenny (1986) was followed to alleviate the multicollinearity effect independent variables were mean centered. We adopted the process macro method (Model 8) to test moderation mediation (Preacher, Rucker & Hayes, 2007). Gender and age were entered as covariates for all analyses.

Table 2

*Testing the moderated mediation effect of perceive social support on internet addiction*

	Life satisfaction				Internet Addiction			
Variable	$\beta$	SE	t	p	$\beta$	SE	t	p
constant	0.53	.301	1.091	.051	.309	.209	1.241	.173
gender	-0.10	.131	-1.02**	.002	-.610	.101	-4.10***	<.001
age	0.21	.120	2.12**	.005	.164	.120	1.613	.110
PSS	0.47	.171	2.71**	.008	.489	.191	3.01**	.003
Life satisfaction					-.380	.118	-4.32***	<.001
ethnicity	-0.46	.113	-3.54***	<.001	.110	.103	1.531**	.005
Ethnicity*PS	-0.17	.110	-4.63***	<.001	-.049	.109	-4.09***	<.001
S								
$R^2$			.18				.24	
F			11.43***				16.85***	

Note. \*\*\* $P < 0.001$ , Perceive Social Support, Life Satisfaction, Ethnicity (Africa<sup>1</sup>, South Asia<sup>2</sup>)

As shown in Table 2, perceived social support was positively predicted life satisfaction. Overall ethnicity with perceive social support and life satisfaction is significant ( $F = 11.43$ ,  $p < 0.001$ ,  $R^2 = .18$ ). Similarly ethnicity and perceive social support with internet addiction is also significant ( $F =$

16.85\*\*\*,  $p < 0.001$ ,  $R^2 = .24$ ).

Interaction terms of ethnicity with perceived social support and internet addiction (.401\*\*) and the interaction term of ethnicity with perceiving social support and life satisfaction (.302\*\*) are significant which can be seen in figure 1.

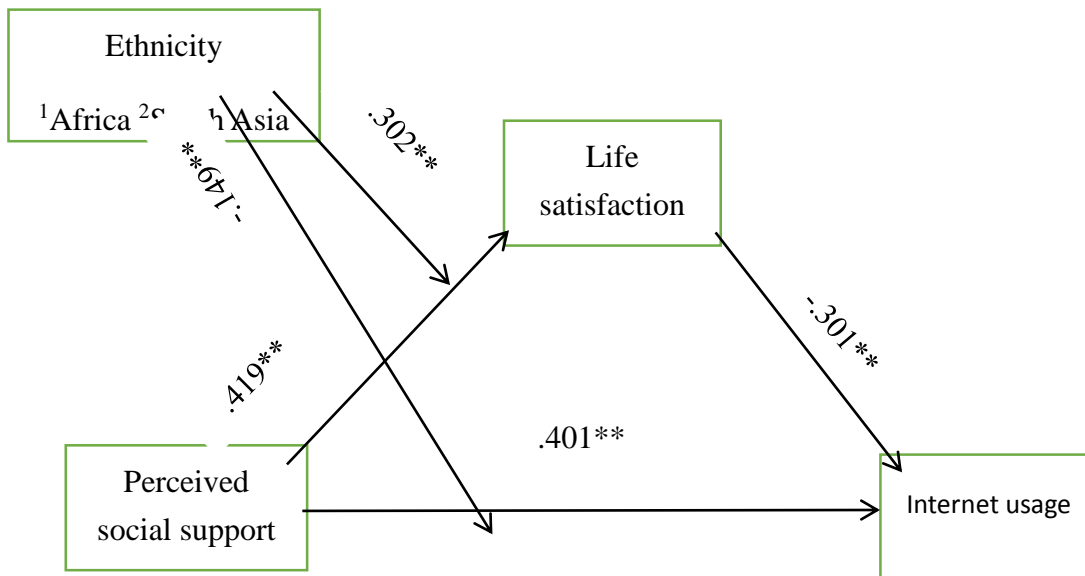


Figure 1, The Conceptual Framework of a moderation mediation model.

To get the more deepen results we see the direct and indirect effect of both ethnicity, which indicates that the direct effect of perceive social support on internet addiction was moderated by both condition of moderator ethnicity the index of the direct effect of condition 1 ethnicity, Africa was point estimate= .2901,  $CI_{95}=[.1487, .4189]$  and for ethnicity south Asia was point estimate= .3410,  $CI_{95}=[.1517, .3319]$ . which imparts that the direct effect of perceived social support on internet addiction was significant for both conditions of ethnicity which can be seen in figure 2.

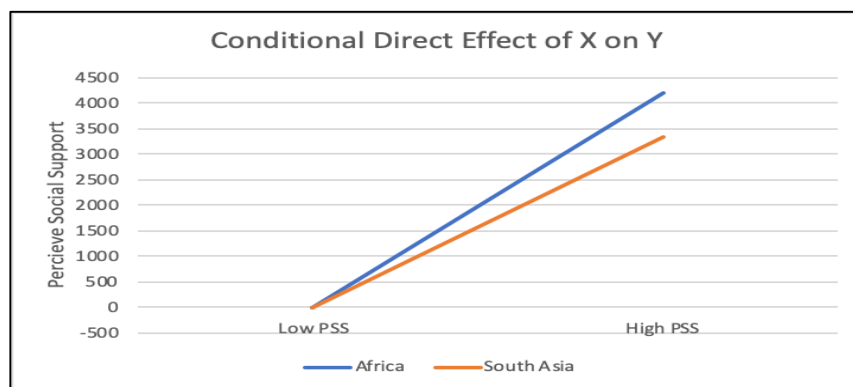


Figure 2, Conditional direct effect of ethnicity (<sup>1</sup>Africa, <sup>2</sup>South Asia) via perceive social support on internet addiction.

Furthermore the conditional indirect effect for condition one of ethnicity point estimate=-.062,

$CI_{95}=[-0.155, -0.056]$  for Africa, South Asia point estimate=-.094,  $CI_{95}=[-0.137, -0.043]$  which indicates that the indirect effect of perceive social support on internet addiction through life satisfaction was significant for both conditions of the moderator ethnicity which can be seen in figure 3.

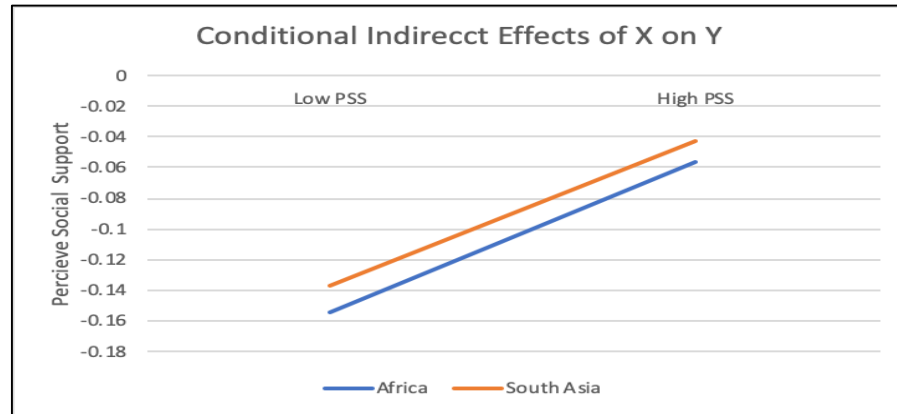


Figure 3, Conditional indirect effect of ethnicity (<sup>1</sup>Africa, <sup>2</sup>South Asia) via perceive social support on internet addiction.

## Discussion

The current study aimed to examine the role of perceived social support, mediating role of life satisfaction on internet addiction of African and South Asian international students studying in China, Xian. The results provided preliminary evidence of the relationship between studied variables and suggested that life satisfaction plays a mediating role in both conditions of ethnicity Africa<sup>1</sup>, South Asia<sup>2</sup>.

Results of the current study in correlation reveal that perceived social support and internet addiction has a significant relationship with each other. And the relationship between the two variables is unidirectional according to the results of the current study. This shows that perceive social support causes internet addiction but internet addiction can cause less perceived social support as well. As a body of research has also found similar results such as Xiao (1994), different aspects of internet addiction are predicted by an individual's personal experience of emotional support of others. Mere recent studies also support our result as they indicate that it doesn't matter how much a person receives support from others but his hands-on experience and inner intuitiveness of social support eventually influence his conduct (Moak & Agrawal, 2010; Stice, Regan, & Randall, 2004). Student alienates themselves from there close social and family circle when they perceive less support from them (Gao, Wand, Wang, & Liu, 2007; Sun, Qiang, Chu, & Qian, 2014). This eventually makes them vulnerable to misuse the internet to get serenity and gratification (Yao & Zhong, 2014). Thus researches suggest that social support predicts internet addiction and misuse of internet addiction can also cause less perceive social support ( Zhang et al., 2018).

Also, notable findings of the current study suggest that the direct effect of perceive social support to internet addiction is possible for both ethnicity Africa and South Asia. This means perceive social support is predictive of internet addiction for students of both cultures but Asians are a little

higher than Africans. Plenty of researches support's such result, such abnormal use of the internet is the way of satisfying once needs of relating to relationships in terms of communication (Chak & Leung, 2004; Song, Larose, Eastin, & Lin, 2004; Wan & Chiou, 2006; Young, 1998). Our findings were also consistent with the theoretical background such as the behavioral model of abnormal internet usage which states individuals presume the internet as their companion to get rid of there deficiency of social contact and entertainment in daily lives (Devis, 2001). in terms of culture, Balhara (2018), problematic internet usage among southeast is ranging from (7.4% to 46.4%) which is an amount of heavy internet usage, s for entertainment and communication purposes. Similarly, a survey from Kohli and Quartz (2014) suggest south African and Nigerian as second heavy internet users among other listed countries, And the common theme among them internet as a mode of communication.

As our results suggest that indirect effect of perceive social support to internet addiction through life satisfaction is also significant for both conditions of the ethnicity Africa<sup>1</sup>, South Asia<sup>2</sup>. and value of Africans is little higher then South Asians such results can be supported by previous literature which denotes that Asians primarily connected their self more to others (Markus & Kitayama, 1991; Triandis, 1989). However, several types of research on Asians suggest that social and emotional support does play a significant role in an individual's overall life satisfaction ( Bai, Yang & Knapp, 2018; Kang, Chapin, & Kim, 2017; Shen & Yeatts, 2013). Though one other explanation of this phenomenon can be that Asian culture is more collectivistic (Hofstede, 1980) and they are more dependent on their family, and Asian's see themselves an integral part of family and co-worker which comes under the category of in-group (Triandis, 1995) and on the other hand African's are also collectivist culture but there an ideology behind collectivism is little different from Asians. There is a very famous African quotation " Go the way many people go". which suggest that in African's identification within the community is very consequential and believe an individual should live a communal life (Matondo, 2012). From these findings, we can presume that in current research as Asian students are far away from home and there in-group that's why they are less satisfied with there life whereas Africans although they were away from home in another country, they do have there communal values and some people from there community with them which makes them more satisfied with life then Asians.

Another important aspect of our finding from current research is that either life satisfaction as the mediator does play the role for one condition of ethnicity Africa is little higher than other but the addiction of internet it doesn't effect hence it confirms with the theory of PIU which explain that individuals captivate themselves to overuse of virtual world to get rid of their deprived situations (Hawi & Samaha, 2016). such as communication (Chak & Leung, 2004; Wan & Chiou, 2006). Our results are also consistent with the previous study which suggest that less satisfaction with life leads to more internet usage (Ellison, Steinfield, & Lampe, 2007). similarly in our research ratio of IA in South Asians are a bit more than Africans.

Current research has added valuable information in the context of literature, showing that the decline in life satisfaction is linked to the overuse of the Internet, but the increase or static state of life satisfaction does not apply to any change in the dependence of the Internet. As in our research life satisfaction of African students is not much affected as Asians, but the Internet usage ratio is still higher and very close to Asian students as mentioned above in Table 1.



## Conclusion and future direction's

Based on empirical findings of the current study it can be concluded that perceive social support is a predictor of internet addiction among international students. Students from both cultures overuse the internet to get rid of dissatisfied social support. Perceive social support further brings the issue of life satisfaction and our findings to highlight the importance of considering culture in terms of personal life satisfaction is important. Based on this investigation it can be concluded that student from African culture can find other ways to full fill their life satisfaction from other modes such as communal support, whereas student's from South Asian culture are unable to full fill their life satisfaction needs to the fullest unless they are not rooted with their (loved ones ) with physical proximity.

## Theoretical Contribution

From the framework of theoretical perspective, the current study has several contributions, firstly it has attempted to investigate the impact of perceive social support on internet addiction in terms of cultural variation. This study was carried out in a foreign country where international students were already away from their culture and their perception of perceive social support and variation in life satisfaction can be seen as a whole according to their cultural background. Thus this study has attempted to address the future call to perceive social support in developing internet addiction on international students.

## Practical Contribution

This study has examined the impact of perceive social support on internet addiction through the mediating role of life satisfaction and findings supported the argument that pervasiveness of perceptual variation of communal support of students triggers internet addiction. This state of affairs can halt the mental health and productivity of students in terms of educational performance. So university organizations should introduce prevention measures and support committees in the university to eradicate the feeling of being distant from the communal support of international students.

Further, this study has concluded perceptual variation of perceive social support which affects life satisfaction so there must be some counseling authorities within the university to deal with such psycho-social issues of international students. University authorities should also formulate policies to tackle such serious affairs and provide cultural support and guidance through career counselors and mental health practitioner within the sphere of the university.

## Limitation and future directions

Despite the contribution, there are a couple of limitations of the current study that bear mention. Firstly this is survey-based research with cross-cultural research design which often doesn't allow understand causality among study constructs. The longitudinal research designs are generally considered to be a more suitable design for examining the causal relationships between study variables. So in future studies following longitudinal or experimental design will help to establish cause and effect relationships among perceive social support, life satisfaction, and internet addiction.

Secondly in terms of moderator conditions (<sup>1</sup>Africa, <sup>2</sup>South Asia). The Asian respondents are from Pakistan and Bangladesh so the findings may not be generalized to the students of other Asian countries. Similarly, the African respondents are mainly from Uganda, Ethiopia and Benin so the findings from current study might not be generalized to the students of other African countries. In future studies exploration of other countries of both ethnic groups is required for generalizability. However, the sample size was small, and might be the discrete results are due to the sampling variability. Though a larger sample size for later studies is recommended.

Despite the limitations, combining both external and internal psychological factor, this study consolidates and broaden our understanding of the mechanism underlying the link between perceive social support and internet addiction. Which might help in counseling services for the prevention of internet addiction. In future, prevention studies can be done to see the clear difference between these variables in terms of prevention.

Nevertheless, future research should be accomplished using subjects recruited from outside of the academic setting to provide further generalizability to the results. Future studies can also consider the role of self-control or loneliness in predicting internet addiction in terms of other important demographic variables such as gender, age, and family functioning.

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