The relationship between shame and internet addiction among university students: the mediating role of experiential avoidance

Fatemeh Teymouri Farkush, Mohsen Kachooei and Elahe Vahidi

ABSTRACT
Internet addiction is an important mental health problem among university students. This study aimed to examine the relationship between shame and Internet addiction and investigate the mediating role of experiential avoidance in undergraduate students. A total of 307 undergraduate students (210 females and 97 males) were recruited. Shame was examined using the Self-conscious Affect-3 Test. Experiential avoidance was evaluated using the Acceptance and Action Questionnaire-II (AAQ-II). Internet addiction was assessed using the Young Internet Addiction test (IAT). Findings revealed significant associations between shame, experiential avoidance, and Internet addiction. In addition, the results of structural equation modelling demonstrated the mediating role of experiential avoidance in the relationship between shame and Internet addiction. The results suggest that the experts working on Internet addiction consider the shame and experiential avoidance. Early discovery and intervention of shame and experiential avoidance can be incorporated into programmes intending to reduce the risk of Internet addiction.

Introduction
The role and effect of the Internet in modern life today are indispensable. It influences our habits, entertainment and provides social networking opportunities (Chou et al., 2017). The Internet World Stats (2020) states that 59.6% of the world population uses the Internet. Therefore, the usage of the Internet has been increasing (Chou et al., 2017), paving the ground for the rise of a new phenomenon called Internet addiction characterized by the “inability to control Internet usage that eventually leads to psychological, social or work impairment” (Tao et al., 2010). Studies demonstrate that everything capable of stimulating a person can be addictive. Thus, extreme working, sex, shopping, and gambling behaviours can become behavioural addictions (Aslan, 2020).

Compared to the other known forms of addiction, such as gambling and substance use, Internet addiction is also a serious public health problem worldwide, especially in Asia. In 2017 global Internet users were 48.7% in Asia, 17% in Europe, and 10.9% in Africa (Internet World Stats, 2017), and 1.4% to 20.8% of adolescents have experienced Internet addiction during their lifetime (Chou et al., 2017). In Iran, according to prevalence statistics, at least 33,200,000 virtual users are using the Internet since 2010, making this country rank first of the highest Internet usage in the Middle East (Qasemi & Malek Ahmadi, 2010). Internet addiction symptoms include loss of control, withdrawal, craving, and
a reduction in the ability to make decisions (Chou & Hsiao, 2000). Marital dissatisfaction, work-related stress, financial problems, insecurity, anxiety, struggle in life, and limited social life have been shown as the main reasons for Internet addiction disorder (Young, 1998). Studies suggest that Internet addiction is a behavioural problem with a strong correlation with chemical dependency problems (Scherer, 1997). Individuals with Internet addiction prefer a virtual environment over a reality environment (Chebbi et al., 2000). Identifying risk factors related to Internet addiction can help prevent and treat this disorder. In this regard, numerous studies have shown that excessive Internet usage is associated with depression, anxiety, stress (Chatterjee & Sinha, 2012), low self-respect (Widyanto & Griffiths, 2011), shyness (Chak & Leung, 2004), social anxiety (Caplan, 2006) and suicidal ideations (Kim et al., 2006; Mathy & Cooper, 2003). According to these conditions, research has investigated the association between Internet addiction and psychological problems mentioned above, but few studies have addressed shame as one of the potential Internet addiction risk factors (Craparo et al., 2014).

In 1958, Lynd defined shame as ‘a wound to one’s self-esteem, a painful feeling or sense of degradation excited by the consciousness of having done something unworthy of one’s previous idea of own excellence.’ Also, in 2002, Gilbert defined shame as ‘a self-conscious emotion’ with a great evolutionary background, rooted in a social threat system in which the self, perceived as an object of negative interpretation by others, anticipates their rejection or even attack (Gilbert, 2002). People who feel shame are typically dissatisfied with themselves and resort to obsessive-addictive behaviours to avoid and escape their self-hatred (Bradshaw, 2005). Likewise, most addictions, such as gambling, drugs and alcohol, are related to shame (Bilevicius et al., 2018; Bradshaw, 2005; Brown, 1991; Cook, 1991; Dearing et al., 2005; Shim, 2019; Wiechelt, 2007). According to previous research, shame also is a risk factor for Internet addiction (Craparo et al., 2014). For example, one study on the relationship between shame and perceived self-efficacy and Internet abuse found that the people classified as problematic users demonstrated a good correlation between shame and problematic Internet usage (Craparo et al., 2014). In another study, shame significantly and positively predicted social network usage and Internet addiction mediating between shame and social network (Dogan & Kaya, 2016). Although the relation between Internet addiction and shame has been explored in previous studies, a greater understanding of this relation and identifying the mediating variables is necessary.

Some studies suggest that experiential avoidance mediates the relation between shame and psychological problems (Brem et al., 2018; Carvalho et al., 2015). ‘Experiential avoidance refers to the unwillingness to experience aversive or private events while pursuing one’s values and goals’ (Hsieh et al., 2019). Experiential avoidance as a short-term strategy can be useful to manage unwanted emotions associated with certain situations, but it can be harmful if it is generalized to other situations and falls into an inflexible pattern. Many studies have found the association between experiential avoidance and behavioural problems, such as maladaptive coping (Kashdan et al., 2006). Also, experiential avoidance is associated with Internet addiction (Chou et al., 2017; Hsieh et al., 2019). A relevant study claims that self-identity confusion is indirectly related to Internet addiction by mediating experiential avoidance (Hsieh et al., 2019). Another study has found that experiential avoidance is directly related to Internet addiction, indicating that Internet addiction can be a way to avoid unpleasant experiences (Chou et al., 2018).

Research on shame and experiential avoidance shows that experiential avoidance plays a mediating role in the relation between shame and psychopathological symptoms, such as depression symptoms and compulsive behaviour among substance addicts (Brem et al., 2018; Carvalho et al., 2015). Therefore, experiential avoidance probably mediates the relationship between shame and other interrelated constructs. In short, although studies suggest that shame can be related to Internet addiction, no evidence suggests the mediating role of experiential avoidance in the relation between shame and Internet addiction.
Present study

Therefore, the present study aimed to explore the role of shame and experiential avoidance in Internet addiction. Particularly, this study aimed to examine whether experiential avoidance can mediate the relationship between shame and Internet addiction.

Methods

Participants

This study included 307 undergraduate college students (210 females and 97 male) from three universities in Tehran, Iran. Due to the COVID-19 pandemic, participants completed an online research participation platform. The mean age of female students was 22.02 (SD = 2.78), and the mean age of male students was 22.94 (SD = 2.77).

The exclusion criteria included (a) ages of below 18 years and above 30 years, (b) subjects who had an interrelated job with the Internet, and (c) incompletely filled scales/missing index higher than 10% in each scale.

Procedures

The basic protocol to this research contains three self-report measures to estimate Internet addiction, experiential avoidance, and shame. It also involves a participant’s information sheet containing demographic data (age, gender). Participants were recruited using a convenience sampling design. Given the conditions imposed by the pandemic and the necessity of observing social distance, data collection was performed online by google forms, and then, the participation links were sent to participants. The participants initially received a brief description of the study’s aims and methods for completing scales. Also, the participants were informed about ethical considerations regarding their voluntary participation and the confidentiality of their responses. The Institution’s Internal Review Board approved all study procedures.

Measures

Demographics questionnaire

Participants were asked to provide their age, gender, and ethnic identification.

Internet addiction test (IAT)

IAT is a self-report scale developed by Kimberley Young (1998) and assesses the severity of Internet addictive behaviour. The Test comprises 20 items scored on a 5-point Likert scale (1 = rarely, 2 = occasionally, 3 = frequently, 4 = often, and 5 = always). Examples of items in the IAT are ‘How often do you feel that you stay online longer than you intended?’ ‘How often do you prefer the excitement of the Internet to intimacy with your partner?’ ‘How often do you check your email before something else that you need to do?’ The total score is calculated by summing all items. The participants are classified into three levels of Internet addiction based on their total scores: mild (20–49), moderate (50–79), and severe (80–100). The internal consistency of the questionnaire was reported to be 0.92 (Man Sally, 2006). Content and convergent validity, internal consistency (α = 0.88), test-retest reliability (r = 0.82) and split-half (r = 0.72) for the Persian version were acceptable (Alavi, 2010).
The self-conscious affect-3 test (TOSCA-3)

TOSCA-3 was developed by Tangney et al. (2000) to measure shame (Tangney et al., 2000). TOSCA-3 consists of 16 items describing 16 situations. Each item is divided into two basic items one to measure shame and one to measure guilt. Also, Basic items are scored on a Likert scale from 1 = very unlike me, 2 = a little unlike me, 3 = maybe (half and half), 4 = a little like me, and 5 = very like me. Examples of items in the TOSCA-3 are the following:

‘You made a big mistake on an important project at work. People depended on you, and your boss criticized you for your mistake,’ ‘You make plans to meet a friend for lunch. At the time, you realized you stood up your friend.’ To self-report shame, participants use a 5-point response option to react to this statement: ‘You would think: I am inconsiderate.’ Evaluation of guilt occurs in response to the claim, ‘You’d think you should make it up to your friend as soon as possible.’ The final score is described by summing up all scores. All 16 questions have items related to shame and guilt. The alphas of shame proneness scale reported by Tangney and Dearing for the long 16-scenario version of the TOSCA-3 was 0.77–0.88 (Rüsch et al., 2007). In the Persian version, the obtained Cronbach’s alpha coefficients for the whole scale and subscales of inferiority feeling of emptiness and being ashamed of making mistakes were 0.93, 0.92, 0.71, and 0.75, respectively. The shame scale demonstrated sufficient psychometric properties for research purposes (Foroughi et al., 2015).

The acceptance and action questionnaire-II (AAQ-II)

The AAQ-II (AAQ-II; Bond et al., 2011) is a 7-item measure of experiential avoidance. Examples of items in the AAQ-II are ‘It’s OK if I remember something unpleasant,’ ‘I’m afraid of my feelings.’ Each item is scored on a 7-point Likert scale (1 = never true; 7 = always true), and the total score is calculated by summing the items. The individuals with higher scores have higher experiential avoidance, which indicates their tendencies to make negative and inflexible evaluations of private events. The AAQ-II demonstrated good psychometric properties across various populations (Bond et al., 2011). The Persian version of this scale showed a good internal consistency (α = 0.71–0.89; Abasi et al., 2013).

Data analysis

First, Pearson correlation coefficients were calculated to explore the relationships among the variables. Cohen’s (1988) criteria was used to interpret correlation coefficients: negligible to very weak (r = .00-.10), weak (r = .10-.30), moderate (r = .30-.50), and strong (r = .50–1.00).

Next, a structural equation model was used to investigate the theoretical model presented in Figure 1. The Satorra-Bentler scaled chi-square test was used to evaluate the overall fit of the factor models. As chi-square is sensitive to sample size, model fit was also evaluated using three additional fit indices: Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Tucker–
Lewis Index (TLI). The following cut off values were used: \( \chi^2/df \leq 3 \) for an acceptable fit; CFI and TLI >.90, and RMSEA < 0.08 (acceptable fit) and < 0.06 (good fit). The significance of indirect effects was tested using a bootstrapping procedure. The effects were computed for each of 2,000 bootstrapped samples. Statistical analysis was conducted using SPSS (IBM SPSS statistics 23) and AMOS software.

### Results

**Zero-order correlations**

Table 1 shows the descriptive statistics of the variables and the Pearson correlation coefficients between them. As Table 1 indicates, there was a moderate to strong association between shame and experiential avoidance (\( r = .50, p < 0.01 \)) and a weak association between shame and Internet addiction (\( r = .24, p < 0.01 \)). Experiential avoidance was moderately associated with Internet addiction (\( r = .41, p < 0.001 \)).

|                  | 1       | 2       | Mean  | Standard Deviation |
|------------------|---------|---------|-------|--------------------|
| 1. Shame         | 1       |         | 43.97 | 10.12              |
| 2. Experiential avoidance | .50*   | 1       | 34.33 | 9.55               |
| 3. Internet addiction | .24*   | .41*   | 35.35 | 15.21              |

* \( p < .01 \)

### Structural equation modelling

Proposed model (Figure 1) provided a good fit to the data (\( \chi^2 = 2.41, p = .12; df = 1; \chi^2/df = 2.41, CFI = .99, GFI = .99, RMSEA = .03, 90\% CI = [.01-.08] \)). In this model, the direct path from shame to Internet addiction was insignificant. The standardized regression coefficients are presented in Figure 1. The explained variance by the predictors in the model for Internet addiction was .35. Using bootstrapping procedure revealed that the standardized indirect effect was .27 (\( p < .01 \)), and bootstrapping bias-corrected 95\% CI was [.17-.38].

### Discussions

The present study aimed to investigate the relationships between shame, internet addiction, and experiential avoidance among a sample of university students and the potential mediating role of experiential avoidance in the relationship of shame and Internet addiction.

One of the findings demonstrated that shame was related to Internet addiction. Although few studies have examined the relation between shame and Internet addiction, the current result is consistent with previous studies that found that shame could be in association with internet addiction (Craparo et al., 2014). Some theorists have described shame as a negative feeling expressed after a perceived social or moral refusal or defeat(Gilbert & McGuire, 1998; De Hooge et al., 2013). It seems that individuals who feel shame in a situation prefer to walk out, or if there is no way to leave, they try to avoid others and disconnect from reality. Therefore, the result was predictable; being ashamed may expose itself by avoidance and preferring to be alone. Hence, individuals with higher levels of shame prefer environments with unreal interactions with people like social networks, which demonstrates the relation between shame and internet addiction, as long as the individual is gotten involved with internet and social media prefers to be more alone than before.

Besides that, results demonstrated that shame was related to experiential avoidance, which corroborated studies indicating that higher levels of shame were related to experiential avoidance (Brem et al., 2018; Carvalho et al., 2015). This result is not surprising; individuals who perceive
negative evaluation by others and show more dissatisfaction with themselves will refuse to experience events. It seems that receiving more negative feedbacks from others are related to use more avoiding mechanisms (Brem et al., 2018; Carvalho et al., 2015).

Another finding of this study was about the relationship between experiential avoidance and Internet addiction. Previous research supported this result that showed a significant relationship between experiential avoidance and Internet addiction (Chou et al., 2017, 2018). For explaining that, Hayes et al. (1996) proposed that many problematic behaviours, despite their apparent dissimilarity, using the same and common mechanism as experiential avoidance that is the function to control, escape, or avoid unwanted events. The Internet provides an environment for individuals who refuse to expose their unwanted feelings and thoughts and an opportunity to explore or build their personal world with pleasant values, beliefs, and goals.

One of the findings showed that shame was related to Internet addiction, but they have a weak association, and when experiential avoidance steps into this association, the relation between shame and Internet addiction becomes clear. In fact, it seems that shame does not predict Internet addiction when experiential avoidance is a matter of model. Therefore, experiential avoidance mediates the relationship between shame and Internet addiction. It means that higher levels of shame related to higher levels of experiential avoidance, which was positively and strongly associated with Internet addiction. Previous research showed that people with experiential avoidance might experience the inability to react successfully to the environment and stressful events (Cheng et al., 2015) probably leading them to use the Internet to deny the real world and its stressors (Hsieh et al., 2019). It seems that individuals who receive negative feedbacks hold negative beliefs like ‘I’m not lovable,’ and that leads them to avoid interaction with people and get involved in experiential avoidance as a mechanism of coping with their unwanted thoughts and also leads them to avoid expressing feelings, thoughts, and needs in reality. Therefore, using the Internet excessively creates a fantasy world in which the person feels safe and acceptable and there is no need to feel or think in negative ways, which demonstrates association between extreme usage of Internet and experiential avoidance. Low perceived self-worth would explain psychological problems by maintaining physical and emotional distance and social isolation (Garcia-Oliva & Piqueras, 2016) and that explains unwillingness to experiences and generalize avoiding to other situations (Bradshaw, 2005). It seems that individuals with a higher level of shame have an unacceptable image of themselves because negative evaluations by others and social networks provide a secure space to avoid coping with negative and unwanted thoughts and feelings. Also, the Internet provides an environment to decide what to be and have control over self-presentation to receive social acceptance.

**Limitations and suggestions for future research**

The limitations in this study included the following: First, it was conducted among undergraduate students; therefore, generalizing outcomes to other groups would be difficult. Hence, it is recommended that future studies investigate this relation among other groups.

Second, this research did not investigate gender differences. Therefore, more research is needed to discover whether gender can influence shame and Internet addiction.

Third, this research only relied on the self-report questionnaire, and there were no clinical samples. Therefore, future studies should use qualitative methods to find aversive or shameful experiences in the relation between shame and Internet addiction and also use clinical Internet addicts. Moreover, the results did not feed into causal mechanisms; therefore, it is suggested that future studies examine causal relationships between these variables.

These discoveries have significant implications despite these limitations because they highlight the importance of shame in experiential avoidance and Internet addiction. It is recommended that living companions of students, such as parents and others with similar interactions with students, such as teachers, be sensitive towards susceptible students who show isolation or avoid active
classroom participation. Furthermore, students’ skills should be improved to help prevent shame and experiential avoidance. Accordingly, acceptance and commitment therapy can be an appropriate intervention to enhance the acceptance of experiences and related emotions.

**Conclusions**

In general, previous research demonstrates that shame and experiential avoidance are related to Internet addiction. The current study confirms this hypothesis among Iranian undergraduate students and demonstrates that shame through experiential avoidance is related to Internet addiction.

**Disclosure statement**

No potential conflict of interest was reported by the author(s).

**Funding**

The author(s) reported there is no funding associated with the work featured in this article.

**Notes on contributors**

*Fatemeh Teymouri Farkush*, is MSc student in educational psychology, Department of Clinical Psychology, Tehran Medical Sciences Branch, Islamic Azad University, Tehran, Iran. Her research interests include children, adolescents, and youth’s mental health.

*Mohsen Kachooei*, has PhD in Health Psychology, and now is assistant professor at Psychology department, University of Science and Culture, Tehran, Iran. His research interests include Health psychology, family health, and abnormal psychology.

*Elahe Vahid*, MSc, is a PhD candidate of Educational Psychology at the Faculty of Education and Psychology, Shahid Beheshti University, Tehran, Iran. Her research interests include children, adolescents, and youth’s mental health with a focus on mentalization and interpersonal relationships.

**ORCID**

Fatemeh Teymouri Farkush [http://orcid.org/0000-0002-8596-0021](http://orcid.org/0000-0002-8596-0021)

Mohsen Kachooei [http://orcid.org/0000-0002-3070-4100](http://orcid.org/0000-0002-3070-4100)

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