Original Article

The Relationships Between Self-Efficacy, Internet Addiction and Shame

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ABSTRACT

Background: Internet addiction (IAD) is one of the most diffuse mental disorders among adolescents. **Aims:** The aim of our study was to evaluate the relationships between shame, self-efficacy and Internet addiction. **Materials and Methods:** We recruited a total of 670 college students (males = 164, 24.5%; females = 506, 75.5%). The subjects were aged between 18 and 36 years (M = 20.93, SD = 2.52; males: M = 21.43, SD = 2.95; females: M = 20.76, SD = 2.35). We administered the following instruments: Experience of Shame Scale; Perceived Social Self-Efficacy Scale - Adult Version; Perceived Self-Efficacy in Handling Negative Emotions Scales; Internet Addiction Test. **Statistics Analysis:** We applied multivariate analyses of variance (MANOVA), Pearson's correlation indices and linear regression analysis. **Results and Conclusion:** We found a significant inter-relation between Internet addiction and shame. Shame could be a good predictor of Internet addiction.

Key words: *Internet addiction, self-efficacy, shame*

INTRODUCTION

Internet addiction is conceptualized as an impulse control disorder, similar to gambling behavior.[1-3] Symptoms of Internet addiction generally include preoccupation, loss of control, high tolerance, withdrawal, craving, impairment of function and a reduction in the ability to make decisions.[4,5] The literature has amply demonstrated a high prevalence of psychological and psychiatric problems — such as behavioral, mood, anxiety and impulse control disorders — among Internet dependents.[6-10] Flores[11] further noted that addiction and substance use in general, performs the function of helping the individual

to manage the difficulties associated with interpersonal relationships, but such addiction gradually impairs the individual's already fragile capacity for attachment. Moreover, gender (much more diffuse among males),[12,13] excessive hours (>2) per day spent on Internet,[13] low quality of social relations,[12] early traumatic experiences,[14] low academic satisfaction[15] and accessibility were found to be correlated with Internet addiction.

In addition to the study of the psychological risk factors for Internet Addiction, other areas of study relate to the characteristics of the Internet communication environments. For example, several studies have recently demonstrated that the use of online social networking sites increased risk for Internet addiction in adolescents.[16-18] Research on social psychology and the Internet has amply demonstrated that computer-mediated communication and general Internet-based behavior can be characterized as containing high levels of self-disclosure.[19-21] Indeed, many authors argued that the online relational environments (e.g., chats and social networks) allow individuals to be authentic or to

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experience different identities and personalities in ways that are not possible in face-to-face reality.

Internet addiction: The role of shame and self-efficacy perception

Until date, no studies have examined the conjoint role played by feelings of shame and self-efficacy on abuse of the Internet. In the year 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 one's own excellence." Self-efficacy was defined by Bandura[22] as the beliefs of people about their ability to attain designed levels of performance and this plays an important role in life satisfaction and with emotional health, decision making, coping with stress and depression. Because self-efficacy addresses the individual's perception of control of life events and is predictive of a person's goals and performance, we hypothesized an association of self-efficacy with Internet overuse and above all, with the loss of control and interference (LCI) with daily life. We have also investigated the role of shame and self-efficacy in the sphere of Internet abuse.

MATERIALS AND METHODS

Respondents were eligible to participate in the study if they were 18-36-year-old and Italian college students. Participation was completely voluntary and respondents were not paid for their participation. The instructions stated that the questionnaire was voluntary and that responses were anonymous and confidential. Samples were obtained using a snowballing sampling design: People were approached through advertising or direct contacts and they were then asked to help identify other recruits. Participation was secured through an informed consent procedure that required active consent from participants. This survey was reviewed and approved by the Ethics Commission of the Korea University. The instruments listed below were administered with a separate form that allows the investigator to assess information about gender and age.

Instruments

We administered the Italian version of the following scales:

Experience of Shame Scale (ESS).[23] This is a self-report scale composed of 25 items with responses on a four-point Likert scale (1 = "Not at All;" 2 = "A Little;" 3 = "Moderately;" 4 = "Very Much"). The internal reliability of the Italian adaptation of the ESS was assessed. The analysis revealed a good internal consistency ($\alpha = 0.93$). The median ESS score in the distribution is 45.7 (standard deviation [SD] ± 13.1).

Perceived Social Self-efficacy Scale — Adult Version (ASP/A).[24] This is a self-report scale composed of 15 items measured on a five-point Likert scale from 1 (not at all capable) to 5 (completely capable). This scale evaluates the degree of ability in establishing good social relationships and asserting one's rights and points of view. The Italian version of this scale showed a good internal consistency ($\alpha = 0.80$).

Perceived Self-efficacy in handling Negative Emotions Scale (APEN/A).[24] This is a self-report scale composed of 8 items measured on a five-point Likert scale ranging from 1 (never/not at all) to 5 (always/very much) and covering the degree of ability in handling negative emotions. The Italian version of this scale showed a good internal consistency ($\alpha = 0.82$).

Internet addiction test (IAT).[6] This is a self-report scale composed of 20 items scored on a five-point Likert scale. The instrument assesses the severity of Internet addictive behavior. According to Young,[6] we first subdivided the Internet users into three sub-groups: Minimal users (from 20 to 39), Moderate users (from 40 to 59) and Excessive users (from 60 to 100). For the purpose of this analysis, due to the low number of subjects belonging to the third group (excessive or pathological users = 0.01%), we summed the individuals of the third sub-group with those of the second one. In this way, we finally obtained two subgroups, which were labeled as "non-problematic users" and "problematic users." The Italian validation[25] of the IAT showed that the two-factor model, which consists of Factor 1 - Emotional and Cognitive Preoccupation (ECP) with the Internet and Factor 2 - LCI with daily life, performs better than the one-factor model ($\alpha = 0.89$).

Statistical analysis

In this study, the analyses were performed using the Statistical Package for the Social Sciences version (SPSS) 19.0.1 (IBM Corporation, Armonk, NY) for Windows (Microsoft Corporation, Redmond, WA). We applied multivariate analyses of variance (MANOVA), Pearson's indices and linear regression analysis.

RESULTS

A total of 670 college students (males = 164, 24.5%; females = 506, 75.5%) participated in the survey. Subjects were between 18 and 36 years of age (males = 20.93, SD = 2.52; males = 21.43, SD = 2.95; females: Male = 20.76, SD = 2.35). We found no significant differences in age between females and males (t = ns).

According to the cut-off scores for all of the scales used in our research, we found that the majority of males (n = 145) and females (n = 475) were classified as

"non-problematic users" with respect to the IAT score: Males and females classified as "problematic users" were $n = 13$ and $n = 16$, respectively. Furthermore, females exhibited a "moderate" ASP/A score and a "low" score for the APEN/A. On the contrary, males obtained a "high" ASP/A and a "moderate" APEN/A.

As a first step, MANOVA was applied to explore the variables in relation to gender. Table 1 shows F statistics and P values of the analysis. More specifically, the results revealed significant differences in the APEN/A score ($F(1) = 15.62$, $P = 0.000$) and IAT total score ($F(1) = 15.61$, $P = 000$). Furthermore, a significant difference ($F(1) = 24.54$, $P = 0.000$) emerged between males and females in the first factor of the IAT (ECP).

Considering the small number of participants with problematic use of the Internet in the two groups (males = 13 and females = 16), we decided to explore the APEN/A, ASP/A and ESS scores both in the non-problematic users and in the problematic users of the total sample ($n = 613$, $n = 26$, respectively). We conducted MANOVA, using the typology of Internet user (problematic or non-problematic) as the independent variable and the remaining variables as dependent variables. The results showed significant differences between problematic internet users and non-problematic internet users in the ESS scores [Table 2].

Correlations and regressions among variables

We tested significant inter-relations among the variables of interest, as shown in Table 3. The results show that ASP/A and APEN/A are strongly and significantly related. A significant and negative relationship also emerged between the IAT total score and APEN/A. Finally, ESS scores were negatively related with the ASP/A and APEN/A and positively with both the total IAT score and the two factors of the IAT (ECP and LCI).

Finally, we performed a linear regression analysis to test whether self-efficacy and shame predicted abuse of the Internet. The findings reveal that only shame was a good predictor of the IAT ($R_{\text{Adjusted Square}} = 0.136$, $F(1) = 100.7$, $P < 0.001$), in particular with respect to its first factor (ECP) ($R_{\text{Adjusted Square}} = 0.141$, $F(1) = 106.0$, $P < 0.001$).

DISCUSSION AND CONCLUSION

The present study primarily sought to explore the influence of shame and perceived self-efficacy on the use/abuse of the Internet. As described in the results section, we proceeded with various steps to explore the patterns of the variables of interest in groups differentiated by gender, type of Internet usage (problematic and non-problematic) and in the whole sample.

Table 1: *F* statistics, *P* values, means and SD of the variables (MANOVA)

	Males	Females	*F*(1)	*P*
	Mean (SD)	Mean (SD)		
ASP/A	52.19 (9.33)	49.95 (10.07)	5.96	0.015
APEN/A	26.05 (5.80)	23.86 (6.01)	15.62	0.000
ESS	43.33 (13.78)	44.90 (12.33)	1.78	0.182
IAT	40.13 (12.33)	36.06 (10.69)	15.61	0.000
ECP with the internet	19.25 (7.65)	16.46 (5.49)	24.54	0.000
LCI with daily life	17.20 (4.72)	16.45 (5.15)	2.49	0.114

Pillai's trace (<0.001); Wilks Lambda (*P* < 0.001); Hoteling's trace (<0.001); Roy's largest root (<0.001). SD – Standard deviation; MANOVA – Multivariate analyses of variance; ESS – Experience of shame scale; IAT – Internet Addiction Test; ECP – Emotional and cognitive preoccupation; LCI – Loss of control and interference; ASP/A – Perceived Social Self-efficacy Scale —— Adult Version; APEN/A – Perceived Self-efficacy in handling Negative Emotions Scale

Table 2: *F* statistics, *P* values, means and SD of the variables in the total sample (MANOVA)

	Problematic	Non-problematic	*F*(1)	*P*
	Internet users (n = 26)	Internet users (n = 613)		
	Mean (SD)	Mean (SD)		
ASP/A	49.27 (11.80)	50.54 (9.86)	0.405	0.525
APEN/A	22.35 (7.81)	24.47 (5.93)	3.101	0.079
ESS	61.23 (21.75)	43.81 (11.68)	50.509	0.000

Pillai's trace (<0.001); Wilks' Lambda (*P* < 0.001); Hoteling's trace (<0.001); Roy's largest root (<0.001). SD – Standard deviation; MANOVA – Multivariate analyses of variance; ESS – Experience of Shame Scale; ASP/A – Perceived social self-efficacy scale —— Adult version; APEN/A – Perceived Self-efficacy in handling Negative Emotions Scale

Table 3: Means, SD and correlation matrix of the variables in the total sample

Measures	Mean	SD	1	2	3	4	5	6
ASP/A	50.42	9.91	—					
APEN/A	24.39	6.04	0.46					
IAT	37.15	11.37	−0.05	−0.11**	—			
ECP	17.25	6.42	−0.02	−0.07	0.91**	—		
LCI	16.73	5.13	−0.06	−0.09*	0.87**	0.62**	—	
ESS	44.56	12.80	−0.32**	−0.41**	0.37**	0.38**	0.28**	—

**P values are significant at the 0.01 level; *P values are significant at the 0.05 level; IAT – Internet Addiction Test; ECP – Emotional and cognitive preoccupation; LCI – Loss of control and interference; ESS – Experience of Shame Scale; SD – Standard deviation; ASP/A – Perceived social self-efficacy scale – Adult Version; APEN/A – Perceived self-efficacy in handling negative emotions scale

In general, these first findings suggest a good correlation between ESS and the Problematic Internet Usage, while perceived self-efficacy seems to not be meaningfully related to the use/abuse of the Internet. Pearson's correlation indices, as we expected, showed significant and negative correlations between ESS total score and the two dimensions of perceived self-efficacy (ASP/A and APEN/A total scores). We found also that ESS was significantly and positively related with the IAT total score and its two factors (ECP and LCI), whereas

there was no significant correlations between ASP/A, APEN/A and IAT total score [Table 3]. Finally, we applied a linear regression analysis in order to explore the predictive capacity of both self-efficacy and shame on Internet use/abuse. As expected, based on previous findings, a conjoint effect of both self-efficacy and shame on IAT scores was not confirmed. For this reason, we may conclude that the outcomes of this survey partially confirmed our initial hypothesis. In fact, the ESS score alone plays a role in the Internet abuse. More specifically, this study showed that the shame has a negative impact on Internet use and most of its predictive capacity is focused on the first factor (ECP) of the IAT.

One of most significant limitations of this study is the absence of a clinical group of Internet-addicted patients. We maintain that further studies should explore the relationship between self-efficacy, shame and Internet addiction.

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