ORIGINAL RESEARCH PAPER

Psychology

ROLE OF GENDER AND INTERNET USE IN DETERMINING ACADEMIC STRESS AMONG THE ENGINEERING STUDENTS

KEY WORDS: Gender, Internet Use, Academic Stress.

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ABSTRACT

The objectives of the present study were to find out the main and interaction effect of gender and high internet use on academic stress and to explore the predictive role of these in determining the academic stress among the graduate engineering students. A sample of 120 students (60 male and 60 female) with average (30 for each gender) and high internet user (30 for each gender) was employed in this study based on 2×2 factorial design. Tools used in the study were socio-demographic data sheet, online cognition scale, and academic stress scale. Results of the study indicate that gender alone and in interaction with internet use does not significantly affect the academic stress. However, high internet use significantly influence and predict academic stress among these students.

Introduction:

Today internet has become important part in daily activities, academics, entrainment, finance etc. While making life simpler, internet carried with it kind of new dangers. For over a decade, researchers have tried to better understand risky internet use. As it was found spending too much time on internet or excessive use of internet has various adverse effects such neglecting social activities, relationship, health and work or especially school duties, altering sleep and eating habit in a negative manner (Spada, 2014).

Excessive use internet reported to decline in study habits and grades, and a rise in missing or getting suspended from class among students (Young, 1996). In other studies excessive internet use was connected to a loss of sleep (Anderson, 2001; Nalwa & Anand, 2003), delaying task to visit online, feeling that life while not internet would be boring, feeling upset or irritated once the internet cannot be used at a specified time, and feeling loneliness compared to peers who do not excessively use internet (Nalwa & Anand, 2003). Student experience academic stress through various sources related to academics and a strong association was observed between stressful life events and decreased scholastic execution and there is also a connection between wellbeing related to personal satisfaction and stress among the college students (Dusselier, Dunn, Wang, Shelley and Whalen, 2005; Misra and McKean, 2000).

It seems necessary to distinguish high and average internet users in regard to the academic stress students' experience. It is assumed that those who use internet excessively might experience more academic as they were found to neglect study because of using internet. Academic stress is understood as connections between understudy's stressors, cognitive evaluation and adapting to physiological and mental reaction to stress and stressors identified within scholastic matters (Lorson and Lee, Chi and Lau, 2012).

Academic stressors are occasions in life of the students that influence their psychological well-being and scholastic outcomes. Typically intemperate assignments, peer rivalry, examination and time management issues are all around acknowledged for scholastic stressors (Kumaraswamy, 2013). On the other hand there are contradictory finding in the research regarding the differential effect of gender on academic stress ((Germmill & Peterson, 2006; Banu, Deb, Vardhan, & Rao, 2015). With these ambiguity this study was designed with a hidden intent in order to help to enhance the well-being among the graduate students.

Objectives:

The present study addressed whether gender and high internet use affect the academic stress among the engineering students and to evaluate the interaction effect of these two variables for academic stress. Further, the study is also focused on to find out the predictive role of high internet use in determining the academic stress among these students.

Method

Sample

The final sample of study consists of 120 students of B.Tech. from NIT, Raipur, C. G. Based on 2×2 factorial design include 60 participants for each gender which is further subcategorized in high and average internet users based on the average score of Online Cognition Scale (Davis, Flett & Besser, 2002). In this way each cell included 30 participants. Participants were voluntary and it required the following criterion: engineering undergraduate students aged between 18 to 24. Mean age of male participant was 19.71 (SD=1.26) and of female participants was 19.33 (SD=.95).

Tools

Socio-demographic data sheet

It is semi-structured, performa prepared by the researchers was used to take information about socio-demographic variables like age, gender, education, monthly family income, residence and family types.

Online Cognition Scale (OCS)

This scale was developed by Davis, Flett and Besser (2002) to measure the problematic internet use. It has 36-items rated by respondents on a seven point Likert scale and scored as 1 to 7 for strongly disagree to strongly disagree. It contains four subscales named as loneliness/depression, social comfort, diminished impulse control and distraction. In this study its global score is taken as measure of internet use among the participants and they were divided into high users and average user based on average score of internet use on this scale. It secured high internal consistency as a total measure of prob lematic internet use (a=0.94) and for each of the four OCS dimensions: social comfort (a=0.87), loneliness/depression (a=0.77), dimin ished impulse control (a = 0.84), and distrac tion (a = 0.81). Item-total correlations were highly significant, from 0.47 to 0.77 for social comfort, 0.49 to 0.81 for loneliness/de pression, 0.50 to 0.76 for diminished impulse control, and 0.55 to 0.80 for distraction.

Academic Stress Scale:

It is a 40 items scale which was developed by Kim (1970) was adapted to Indian population by Rajendra and Kaliappan (1990). The scale is scored as 0, 1, 2, 3 and 4 for no stress, slight stress, moderate stress, high stress and extreme stress respectively. This scale has been used in Indian studies (Ganesh & Magdalin, 2007)

Procedure

Data collection took place in NIT, Raipur, between April to June 2017 after approval of administration of the institute. All

questionnaires were administered to students of B. Tech. after they were briefed about the purpose of the study and provided consent to participate in the study. A non-random convenience sampling method was chosen to select the students for the study. The data was collected from more than 200 participants and data of only 120 participants was included in the analysis fulfilling the high or average internet use for both genders on the basis of 2×2 factorial design.

Data was computed and processed using IBM Statistical Package for Social Sciences, 20 versions.

Results

Data were analyzed in 3 stages and they are given below.

1. Socio-demographic comparison in relation to gender and internet use In correspondence with the objectives of the study socio demographic variables were compared in context of the independent variables of the present study i.e. gender and levels of internet use i.e. high vs normal users. Chi square was calculated to see the difference in groups. There was no significant difference between male and female students for residence (x^2=.058), for monthly income (x^2=5.42, p=.24) and for family type (x^2=2.62).

Socio demographic characteristics of the high and average internet users were also compared against the same socio-demographic variables. There was no significant difference between the high and average internet users in our study for residence (x^2=.519), for monthly family income (x^2=2.94, p=.56) and for family type (x^2=.164).

2. Effect of gender and internet use on academic stress

To explore the first objective of our study we wanted to check whether academic stress differs with respect to gender and high or average internet use.

We used 2×2 independent sample ANOVA in order to test how gender and internet use affect the academic stress. Prior to that, Levene's test was used to check the equality of variance for academic stress. The variances were found to be homogenous (F=2.55, p=.059). The summary table showing the impact of gender and internet use on academic stress is given below in table 2.

Table 2: two way ANOVA for academic stress

Source	Sum of Squares	Df	Mean Square	F	p
Gender	7.008	1	7.008	.011	.915
Internet use	6438.67	1	6438.67	10.434	.002
Gender*Internet use	20.008	1	20.008	.032	.857

The result of two way analysis of variance reflects that academic stress is not influenced by the gender and by the interaction between gender and internet use. However, only internet use was found to affect the academic stress significantly among the engineering students (F=10.43, p=.002). To see the significance of difference in means for academic stress between high (M=76.86; SD=22.83) and average (M=62.21; SD= 26.30) internet users, independent sample t-test was also computed (t=3.25; p=.001) which suggests that high internet users were found to have significantly more academic stress as compared to average internet users.

3. Gender and internet use as predictors of academic stress

The second objective of the study was to explore the predictive role of gender and internet use in determining the academic stress among engineering students. The result of 2×2 ANOVA analysis indicated that gender did not affect the academic stress, only internet use was further analyzed for its predictive role. The data was tested for its appropriateness for regression analysis by histograms with normal curve. Following that Pearson's correlation was computed to check whether internet use is significantly associated with the academic stress in a linear relationship. This was followed by regression analysis. Internet use was found to be significant positive correlation with academic stress (r=.286; p<0.01).

Table 3: Regression analysis of academic stress with Model Summary

	B	SE (b)	B	t	p
Constant	33.87	11.23	--	3.015	.003
Internet use	.296	.091	.286	3.240	.002

Table 4: Model summary of regression analysis of academic stress

	R	R^2	Adjusted R^2	R^2 Change	p
Internet use	.286	.082	.074	.082	.002

The regression analysis revealed that academic stress is determined by the internet use. However, the predictive value is partial but it is statically significant (p<0.05).

Discussion

Based on research conducted in a 2×2 independent sample ANOVA sample of male and female engineering students, the study suggests that male and female participants and average and high internet users did not differ in regard to the socio-demographic variables i.e. residence, monthly family income and family type. Since in this study the non-random convenient sampling method was opted it was needed to check the effect of these socio-demographic variables on our independent variables i.e. gender and internet use. In literature it has been revealed that these factors influence the stress among the individuals (Baum, Garofalo, & Yali, 1999; Paykel, Abbott, Jenkuns, & Brugha, 2000; Elgar, Arlett & Groves, 2003; Rehman & Singh, 2015 ; Lantz, House, Mero & Williams, 2005; Singh & Ullah, 2016).

We found that gender had not a significant effect on the academic stress as experienced by the students. Both male and female participants appeared to perceive the stress in academic sphere similarly. In this context previous research has contradictory findings. Outcomes of some studies suggested that female experience more academic stress as compared to their male counterparts (Dhull & Kumari, 2015; Banu, Deb, Vardhan, & Rao, 2015) and other studies found that there was no significant gender difference in same regard (Germmill & Peterson, 2006 Busari, A., 2012).

Further, the results of the present study suggest that there is no interaction effect of gender and internet use to influence the academic stress among the students. However, the present study found a significant main effect of internet use on the experienced academic stress among the students (F=10.434, p<.05). This suggests that irrespective of male or female gender excessive internet use affect both genders to create academic stress among them significantly.

Similar line of research has been reported in previous studies. Germmill & Peterson (2006) in their study found that more than 25% of students experienced internet as a creating interruption in their life and moreover, they found that this interruption to be associated with high levels of stress they felt. In same line Jafari & Fatehizade (2012) found that students with excessive internet use have high levels of stress along with the features of anxiety and depression.

In our study we found that there is significant positive correlation between internet over use and increasing academic stress. The regression analysis conducted in the current study clearly indicates that high internet use is a significant predictor of academic stress among the engineering students. Several studies (Germmill & Peterson, 2006; Seifi, Ayati & Fadaei, 2014; Juna & Choi, 2015) confirmed the strong positive relationship between internet overuse and stress among the student. It is important to understand the possible reasons that are how internet might be significantly associated with the academic stress among the engineering students. It is found in the studies that students often use internet to play online game, to see the explicit sexual contents and often use it as an effective communication tool (Cooper,

1998; Young, 2008 & 2009). Some other researches suggest that one most common reason of internet overuse found to be communication with friends (Aderson, 2001). Beside these other studies revealed that the college students who use internet excessively face reduction in study habits and grades and increasing pattern of not attending class (Young, 2006). In some other studies it was found that high use of internet is associated with loss of sleep, postponing the academic assignments and feeling irritation (Anderson, 2001; Nalwa & Anand, 2003). Thus, in such ways high internet use influence the life of student that might possibly creating the academic stress among them.

The current study limitations may be attributed to non-random sample selection and only an institute served as a location of study. Despite these limitations the results of the present study contribute that male and female engineering students similarly experience academic stress. In this era of digitalization and internet where these are making the life of human being easier, also having some adverse impacts upon students. Internet was found to be cause of stress among these students.

Conclusion

The results of the present study suggest that internet over use causes significant amount of academic stress among the undergraduate engineering students. Further, internet appeared to be a significant predictor of academic stress among these students.

Despite its limitations, the present study contribute valuably that internet over use is causing academic stress among these students. The plenty of research have found stress as detrimental for the well-being of individual. Therefore, the findings of the present study incline the teachers, mental health professionals and social workers to focus upon reduction of high internet use among these undergraduate students in order to protect their academic as well as mental health.

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