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RESEARCH ARTICLE

Internet Usage: A Crutch for Postgraduate Students with Poor Mental Health

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Abstract:

Background:

The intricacies of developing internet systems endowed with serendipity and surprises and the relationships among internet users as individuals and collectives have attracted the attention of several researchers from various disciplines to examine the emergent phenomena. The present study seeks to understand internet usage in the realm of psychology, where it has a profound effect on the mental health of the individual. Numerous studies have indicated that internet usage results in poor mental health and that it is responsible for psychological problems. However, on the contrary, the present study seeks to examine if the internet is being used as a mental support system for those with issues of mental health.

Aims:

This study aims to understand the predictive value of mental health in calculating internet usage among postgraduate students.

Objectives:

The objective of this study is to identify whether mental health and internet usage vary with gender, to explore the relationship between mental health and internet usage, and to identify if internet usage may be predicted through mental health.

Methods:

The sample of the study consisted of N= 1040 drawn from postgraduate students studying in various universities of Andhra Pradesh and Telangana in India. It is not only a gender representative but also a socio-economic representative of Indian society. The Mental Health Inventory and the Internet Addiction Scale were the tools used for the collection of data.

Results:

The results obtained were analysed using SPSS. The findings t (1035) = -3.43, p = 0.001 suggested a significant difference among the genders pertaining to mental health, and t (1031) = 7.72, p < 0.001 revealed gender difference in internet usage. Results of Pearson's correlation analysis revealed a negative and significant correlation with r = -0.212 (p <.01). Regression analysis depicted that internet usage could be predicted through mental well-being significantly at t (1035) = 11.96, F = 48.71, and p < 0.001.

Conclusion:

There is a significant gender difference in mental health and internet usage. Mental health and internet usage have a significant negative correlation. Internet usage can be predicted through the mental health of an individual.

Keywords: Mental health, Internet usage, Gender, Post-graduate students, Internet addiction, Mental well-being.

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1. INTRODUCTION

The current study attempts to gain insights into the relationship between the internet and psychology. Before this, the imperative need is to find out the concerns of different disciplines and their theoretical perspectives regarding the internet and ICT. Social scientists often view ICT as techno-social systems, not entirely technology-determined systems, as the use of ICTs can transform society. Furthermore, internet creates not only an interface between the virtual and real world but also a common space for the users to interact with one another and as a group, which no other media has been able to create. Also, it has created information space for generating

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new open spaces such that individuals can create their own space for interactions. Furthermore, the internet has become the source for the development of knowledge as it provides new interesting things to internet users. The surprises one encounters in the information space have become captivating means for using the internet for hours and as a result, it affects the individuals' behavioural patterns in daily life. All these developments have attracted the attention of several researchers from various disciplines for studying human behaviour in the context of the technology-driven real world. In this context, sociologists examine the relationship between social structures and human practices by applying Anthony Giddens's structuration theory or Pierre Bourdieu's theory of habitus [1]. However, digital gaps have emerged across genders, social groups, and geographical locations. Media and communication theoreticians examined closely the influences of news and social media and their impact on society. Political scientists, on the other hand, are interested in the role of media in election campaigns and social movements. Some attempts have also been made to evaluate ICTs from a human rights perspective as well, the spread of political ideologies and democracy achieved or hindered, *etc*. Digital anthropology takes a cultural angle in self-reflections in media and it attempts to find the differences between the real and virtual world and digital ethnography. The sociology of science and technology focuses on the penetration of media in the social realms, where ICTs find it very difficult to make an entry. Schönbach [2, 3] compared and contrasted display media that includes newspapers, print, TV, radio, *etc*., where the user has the liberty to interact with sources or other users, thus empowering its users to become their own journalists. However, the latter can lead to polarization and fragmentation of the citizenry. The knowledge economy concept that emerged in the 1990s helped to gain insight into the production of economic resources based on scientific knowledge and technology, where the internet plays a significant role. In this realm, it is argued that frequent internet users are misled by the frequent feedback, which is based on a small sample analysis. Instead, quality information deludes us with abundant information but our capacity to make sense of it is limited; however, it builds our self-confidence [4]. Studies have been carried out on a philosophical plane regarding the serendipity infosphere, where there is human-technology interaction. Here, surprise plays a significant role when personalized information in which the homophilous contents lead to the formation of groups based on sexual orientation, ethnicity, and other common interests. Serendipity is an inbuilt structure of technology [5]. However, developing a technological system for providing personalized information is beset with problems because of the multiplicity of self [6]. Geographers have focused on the cognitive dimension relating to the internet spaces in the theoretical areas of socio-spatial theory, psychogeography, and psychobiology [4].

1.1. Psychological Models Explaining Internet Usage

Given the above varied theoretical perspectives, psychology focuses on technological change and the social environment that has affected human behaviour. The chain reactions that the internet triggered took a while to become effective. Though the internet was introduced to the public after the early 1990s [7], it did not have an immediate effect due to its inaccessibility for everyone and lack of corresponding technological advancements. However, with the invention of mobile phones and other electronic goods, the internet, which was restricted to computers and laptops, has become accessible to everyone, thus increasing its scope to a greater extent. Affordability, availability, user-friendly technology, and improved technical knowledge of the users have increased the extent of internet usage. However, all is not well with these developments as according to Dr. Kimberly Young, one of the first psychologists to identify problematic internet usage [8], the behaviour of an individual becomes problematic as the daily activities and responsibilities of the individual are being neglected due to intensive use of the internet. This assertion drew the attention of several psychologists to focus on the link between the internet and mental health and they sought various models for explaining problematic internet usage and internet addiction.

Several models explain internet usage and among them, the important ones are the cognitive-behavioural model of problematic internet use [9], the model of Anonymity, Convenience, and Escape (ACE) [10], Grohol's three-stage model [11], and the Interaction of Person-Affect-Cognition (I-PACE) model [12] of specific Internet-use disorders.

The cognitive-behavioural model of problematic internet use explains the role of cognitions in internet usage. The model differentiates generalized problematic internet usage from specialized problematic internet usage, and the latter refers to using the internet for specified purposes like online gaming, e-sex, online gambling, *etc*. Generalized usage refers to using the internet for a wider range of purposes. In both of these usages of the internet, the common factors are the specific cognitions for the use and the withdrawal of the internet that cause behavioural problems in affected individuals. Cognitions in this model are further specified as maladaptive cognitions that refer to the fact that individuals have faulty cognitive perceptions either about themselves or the external world in general. These faulty cognitions would enable the individual to prefer the online world instead of the real world, thereby affecting the individual using the internet to a greater extent than is required and leading to internet addiction.

The Anonymity, Convenience, and Escape model presents the internet as a safe space for the user's anonymity and escape by being the most convenient. The individual can be who he/she wants to be without being identified and can escape the harsh reality of life, that too at his/her fingertips *via* the mobile phone. The model explains these factors as being effective reasons for becoming addicted to the internet.

The three-stage model of Grohol emphasizes three stages that individuals go through in using the internet. In the initial or first stage, the individual explores the workings of the internet out of curiosity and as the individual improves his/her understanding of the application and benefits, he/she begins to be addicted to the usage and thus ushers the second stage. In the third phase, the individual begins to realize the perils of becoming an addict and tries to balance the time being spent on the internet.

The Person-Affect-Cognition-Execution model explains specific internet use disorders as a result of the interaction between predisposing variables and moderating and mediating variables. The predisposing variables are the neurobiological and psychological constitutions of the individual besides the cognitive and affective reactions to the internet as the mediating and the moderating variables. According to this model, the individual's core characteristics, along with other components, such as cognitive aspects, decision-making, executive processes, and preferences of the individual all work together to reinforce the internet usage behavior, thus resulting in addiction.

All these models rely on the common feature of individual mental health and well-being without actually emphasising it. Therefore, the present study takes into consideration an individual's mental health, gender, and internet use by adopting the model of Anonymity, Convenience, and Escape. It tries to find the predictive value of mental health on internet usage.

1.2. Mental Health

The World Health Organization (WHO) defines mental health as a state of well-being in which an individual realizes his or her abilities, can cope with the normal stresses of life, can work productively, and can make a contribution to his or her community [13]. The American Psychological Association (APA) defines mental health as a state of mind characterized by emotional well-being, good behavioural adjustment, relative freedom from anxiety and disabling symptoms, and a capacity to establish constructive relationships and cope with the ordinary demands and stresses of life [14]. Both these definitions imply that mental health is the state in which an individual is the best of who they are in all respects, such as behaviour, well-being, and psychological fitness. Mental health reflects the individual's ability to think and behave in ways that enhance his/her well-being and potential.

There are various risk factors that impair mental health, and these are broadly grouped under genetic and environmental factors. The genetic factors comprise the biological traits carried to the individuals through genes on either side of the family. Environment factors comprise various sub-divisions, such as the home, neighbourhood, workplace, *etc*. Addictive behavior, especially alcoholism, was seen to be a coping mechanism among the UK police who were under occupational stress [15]. In today's world, the environment is differentiated into the physical and virtual. It is established through research that the physical environment does impact to a great extent the mental health of individuals diagnosed with dementia, and certain changes in their physical environment do help them in their daily activities [16]. The virtual world, however, is another environmental factor that contributes to the mental state of the individual [17, 18].

The mechanism by which one gets addicted to substances has been identified to be the same as in addiction to internet gaming and gambling. Hence, among the various mental health disorders included in the DSM, internet gaming has been added recently to the DSM 5 alongside internet gambling and other addictive disorders [19]. The inclusion confirms that this particular component of the environment, the virtual world, is impacting mental health.

1.3. Rationale

The advancements in the fields of science and technology, especially those relating to the internet have been instrumental in a revolutionary change in the social ecosystem in the recent past. In this regard, the pandemic played an incremental role to an extent that even those individuals who were not influenced much earlier have been drawn to the internet user fold. However, it is interesting to note that every individual is not affected the same way and neither is every individual using the internet. In this context, the situation of students in Indian academia is a specimen as the conventional face-to-face teaching environment suddenly changed to online, thus resulting in high dependency on the internet. Given the changed socio-eco and educational system, it would be appropriate to examine internet usage among postgraduate students as they are the ones who have the compulsion to use the internet for academic purposes. As the prior research indicates a negative association between internet usage and mental health, the present study is intended to identify whether the mental status of the individuals moderates internet usage. This gives rise to the question, is the internet a boon to those with distorted cognitive thinking and helping them to get through life? A brief review of the literature in this regard is presented in this article.

2. REVIEW OF LITERATURE

2.1. Studies on Internet Usage among Postgraduate Students

Postgraduate students use social networking sites on the internet for many reasons and among them, the prominent one is to make new friends besides getting in touch with past friends [20] for academic purposes [21]. For this, they mainly use the internet. It has been reported in the literature review that women engaged in this more than men [22]. Moreover, they further use it to take help in homework, expand the horizons of research, and promote self-learning [23]. Meerah [24] emphasized that becoming well acquainted with technology and improving one's skill and knowledge in this field is very important for researchers as the internet and technology are being upgraded and updated at an exceedingly fast pace. Students, if aware of only a few methods and ways to access the internet, would not be able to use the internet to the fullest in accessing all the information that is made available to them.

The internet has not been used uniformly among students. It has been found that students belonging to the Department of Business Administration used the internet most compared to the Department of Library and Information Science and the Department of Mass Communication [20]. Similarly, doctoral students use the internet more than the masters' level students [22].

The period for which they used the internet was found to be an average of 1-2 hours before the COVID-19 pandemic [21]. For the reasons best known during and post-pandemic, the time spent must have been more. The post-pandemic effects on internet usage were found to be both positive and negative. The positive consequences were that the students learned new

technical skills, did courses online, and gathered a wealth of information. Along with academic improvement, there was also career advancement through internet usage. The primary negative consequence was that the students wasted a large amount of time just scrolling aimlessly.

The pandemic brought about a huge change in the education system in the form of online teaching, e-libraries, and e-classrooms. This change was assumed to break down barriers and be of advantage to all students, including those with mental health problems. However, research has made it evident that this is not the case, and e-learning has not addressed the problems of those with mental health disabilities [25].

From the above studies, it can be inferred that internet usage among postgraduate students is quite prevalent. The internet among this particular population is used primarily for research and academic purposes. Furthermore, the usage of the internet also varies with discipline as well as gender.

2.2. Studies on Mental Health among Postgraduate Students

Almost half of the students were found with emotional or stress-related problems and more than half of the respondents reported knowing someone having an emotional or stress-related problem in a study in the USA. These problems were largely due to financial status, interpersonal relationships with academic advisors or fellow students and marriage [26], changes in the social environment and health policies [27], academic culture, and structural inequalities [28].

A review of literature on the mental health of college students reported four primary topics viz., the current state of mental health issues among students, risk factors, worsening of mental health in recent years, and nicotine as a substance of abuse. Furthermore, males suffered from suicidal tendencies and suicidal ideation, whereas females suffered from depression and anxiety [29].

Among the Danish young people aged 16-29 years, 24% out of the sample of 3146 presented with poor mental health. The risk of poor mental health differed between the genders, with females having a higher adjusted risk of poor mental health [30]. Though the incidences of suicide due to depression and other mental health issues are increasing with time, young individuals with mental health are not reaching out for help in the conventional way of approaching mental health counsellors or psychologists rather, they are using mobile app-based help to address their problems. However, these applications are not used to their fullest extent as the most affected individuals look for personalization, information availability, and ease of use on the application [31].

In an Indian sample of 300 postgraduate students, mental health discrepancies among the genders, especially in the humour component were found, and there was a significant relationship between mental health and success [32]. In a longitudinal study in China, 28% of postgraduate students were found to have been affected by mental distress, and there was an increase of 16% in this distress between 2000-2019 [27].

The above studies reflect that there are mental health issues that are very prevalent among young students. The extent of the mental health issues varies with gender and other socio-cultural factors, academic culture, substance abuse, *etc*. It was also found that the type of mental health problems differs with gender and other socio-demographic variables.

2.2.1. Research Question

The findings of the literature indicate that the postgraduate population has more need and use for the internet. The means and motivation for use may vary depending upon various socio-demographic variables as well as the mental health conditions of the individuals. The literature also points out that there are increased problems pertaining to mental health among the youth; most of which are not addressed due to various reasons. The relationship between increased internet use and mental health problems has been affirmed by many studies but the present study aims to find out if the opposite also is well grounded. Hence, the research questions are as follows:

1. Are post-graduate students with poor mental health using the internet more?

2. Can one's mental health be predicted by knowing the extent of their internet use?

2.2.2. Research Objective

The following are the objectives of this study:

1. To identify the relationship between mental health and internet usage in terms of gender. In other words, whether mental health and internet usage vary with gender.

2. To find out the association between mental health and internet usage.

3. To discern if internet usage may be predicted through mental health.

3. MATERIALS AND METHODS

3.1. Research Design

The research design adapted for the present study was a descriptive correlational study. The study intended was not experimental, it required a large sample for discerning the variability in internet usage and mental health. Therefore, a survey was organized wherein the self-reporting of participants was adopted.

The study seeks to describe mental health issues and internet usage as well as to examine the relationship among these variables. Understanding the relationship between the two is mandatory as the virtual world is penetrating the physical world to such an extent that both have become indistinguishable. The population chosen are the postgraduate students of Andhra Pradesh and Telangana. The particular population chosen as the young adults are those being impacted most by society, internet, and subject to mental health issues. The study is not associated with any funding and has been approved by the Research and Development cell of Sri Venkateswara University, Tirupati, India, as part of Ph.D. research work (Reference number for ethics committee approval: 2462023001).

Table 1. Gender distribution of the sample.

S.No.	University	Male	Female	Third Gender	Total
1	SKU	75 (43.1%)	99 (56.89%)	-	174
2	YVU	108 (50.46%)	106 (49.53%)	-	214
3	AU	115 (58.7%)	81 (41.32%)	-	196
4	Sub-Total	298 (50.42%)	286 (49.57%)	-	584
5	HCU	105 (46.3%)	119 (52.4%)	3 (1.3%)	227
6	OU	104 (45.4%)	125 (54.6%)	-	229
7	Sub-Total	209 (45.8%)	244 (53.5%)	3 (0.7%)	456
8	Grand Total	507 (48.8%)	530 (51.0%)	3 (0.2%)	1,040

Note: SKU – Sri Krishna Devaraya University, Anantapur; Yogi Vemana University, Kadapa; Andhra University, Visakhapatnam; University of Hyderabad, Hyderabad and Osmania University, Hyderabad.

3.2. Data

The sample (N = 1040) was randomly drawn from the postgraduate students pursuing master's programmes in Sciences, Social Sciences, Humanities, Commerce, Business Administration, and others in six universities located in Andhra Pradesh and Telangana states in India. The total 1040 comprised of N = 507 males (48.8%), a total of N = 530 females (51%), and N = 3 of the third gender. The sampling method adopted is proportion to the population in terms of gender, that is, the male and female students pursuing postgraduate studies in the university.

The gender distribution of the sample matches with the data provided by the Government of India [33] All India Survey on Higher Education 2020- 2021, Ministry of Education, Department of Higher Education, New Delhi, for universities in Andhra Pradesh and Telangana, reported male 49.35% and female 50.64%.

Furthermore, since the socio and economic variations in Indian society are significant, the sample of students drawn for the study represents the proportion of the socio-economic groups. According to the 2011 Census of India, the state of Andhra Pradesh before its bifurcation into two states: Andhra Pradesh and Telangana, had the scheduled caste and scheduled tribe population proportion of 16.4% and 5.6%, respectively, as the total population. In the present sample of students, the proportion of scheduled caste and scheduled tribes is 17.0% and 6.1%, respectively.

The details of the sample are mentioned below in Table **1**.

The students were briefed about the survey and those who were willing to take part in the survey were administered the tools for obtaining data. The tool consisted of a consent form that each participant had to sign before responding to the tool. It was followed by a section containing details about the socio-demographic variables, such as age, gender, religion, social status, discipline of study, *etc*. The Mental Health Inventory (MHI 5) was used to collect data about mental health, and the Internet Addiction Test (IAT) was used to collect data about internet usage.

3.3. Mental Health Inventory (MHI 5)

Mental health was measured using the Mental Health Inventory (MHI-5). It is a brief five-item questionnaire to measure general mental health. It can be used to screen depressive symptoms as well as anxiety. Each of the five questions has six options from which the respondent can choose one and for which a score is given between 1 to 6. The total raw score ranges from 6 to 30 and is transformed into a variable score ranging from 0-100 using a linear transformation, with higher scores indicating poorer mental health.

Positive scoring is done for questions a, b, and d.

Negative scoring is done for c and e.

3.4. Internet Usage and Internet Addiction Test (IAT)

Internet usage was calculated using a checklist citing the various reasons for using the internet along with the time spent in hours using the internet. This checklist was in addition to the Internet Addiction Test, which is a 20-item inventory developed by Dr. Kimberly Young. The IAT is a self-reported measure for experienced internet users, which can estimate the amount of addiction, dependency, and social functioning.

The score ranges for the IAT are as follows:

Normal Level of Internet Usage: 0-30 points.

Mild Addiction: 31-49 points.

Moderate Addiction: 51-79 points.

Severe Addiction: 80-100 points.

The IAT also has a score for a pattern of symptoms which are:

Items 10, 12, 13, 15, and 19 reflect salience.

Individuals who score high on salience are preoccupied with the virtual world and use it to escape from the real world.

Items 1, 2, 14, 18, and 20 correspond to excessive internet use.

High scores on this indicate that the individual would be subject to mental health issues, such as aggression and depression if internet usage is restricted or withdrawn.

Items 6, 8, and 9 are regarding neglect of work.

Scores on this are indicative of neglecting work that the individual is supposed to do in favour of the internet.

Items 7 and 11 reflect anticipation.

Anticipation indicates the individual thinking about online

activities through offline and the individual is eager for online activity.

Items 5, 16, and 17 are on lack of control.

A high score on this indicates that the individual is unable to control the time spent on the internet.

Items 3 and 4 indicate neglect of social life.

Higher scores on these items indicate the individual preference for online social connections compared to the real ones.

3.5. Hypothesis

H1: There is a significant difference in mental health among the genders.

H2: There is a significant difference in internet usage among genders.

H3: There is a significant relationship between mental health and internet usage among postgraduate students.

H4: Internet usage can be significantly predicted by mental health.

4. RESULTS AND DISCUSSION

It was found that males (N = 507) had better mental health (M = 43.09, SD = 12.74) compared to females (N = 530) with poorer mental health (M = 45.78, SD = 12.46). To identify whether the difference in the means though small, is statistically significant, a t-test was performed. Table **3** shows the results of the t-test.

Table 2. Differences in mental health among the genders.

Dependent Variable	Independent Variable		*N*	Mean	*SD*	*T*	*Df*	Sig. (two-tailed)
Wellbeing	Gender	Male	507	43.09	12.74	-3.43	1035	.001
		Female	530	45.78	12.46			

Note: Significant at p < .001

According to the t-test, a statistically significant difference with t (1035) = -3.43 and p = 0.001 was reported. This indicated that the difference in the scores obtained for mental health was due to gender. Hence, H1 could be accepted.

The difference in mental health between the genders has been widely researched, and it was found that the difference was statistically significant. For example, Droogenbroek [34], Nogueira-Martins [35], and Hunt and Eisenberg [29] found a difference in mental health among the genders. The difference could be the way that men and women process various problems. Malhotra and Shah [36] stated that women tend to internalize disorders, whereas men tend to externalize them. In Indian society, it was found that there is not only male bias but also the differential treatment and expectations of male and female children; a girl child is seen as a burden (Wadley [37], Ghadially and Kumar) [38]. This, along with domestic abuse, could be a factor in more mental health issues among women.

In terms of internet usage, it was found that the internet addiction of the sample was mild (M = 38.16, SD = 18.38). The difference in internet usage among the genders is shown in Table **3**.

Internet usage by males (M = 42.57, SD = 18.46) was found to be greater than that by females (M = 33.96, SD = 17.32). To understand whether this difference is due to gender, a student's t-test was done. According to the results of the t-test, as mentioned in Table **3**, a significant statistical difference was found in internet usage with t (1031) = 7.72 and $p < 0.001$ between the genders. Hence, H2 could be accepted. This means that the difference in internet usage is because of gender differences. This finding is in line with the findings of other researchers, such as Teo and Lim [39] and Eduljee and Kumar [40]. The difference in usage could be explained by the motives for using the internet as well as the knowledge of using the internet. While female students spent time in the order of WhatsApp and Messenger (2.38), academic surfing (2.18), social media, Facebook, *etc*. (1.88), chat room (1.72), academic mail (1.60), discussion lists (1.41), news sites (1.31), entertainment sites (1.15), online gambling (0.34), and online auctions (0.65), and in case of male students, it was in the order of WhatsApp and Messenger (2.47), social media, Facebook *etc*. (2.35), academic surfing (2.15), news sites (1.85), academic emails (1.81), chat rooms (1.78), discussion lists (1.61), entertainment sites (1.41), online auctions (0.92), and online gambling (0.41). As academic surfing took second priority in the case of females, it was taken third priority in the case of males and while news sites took 7th place among females, it took third place in males.

Table 3. Internet usage among the genders.

Dependent Variable	Independent Variable		N	Mean	SD	T	Df	Sig. (two-tailed)
Internet usage	Gender	Male	507	42.57	18.46	7.72	1031	<.001*
		Female	530	33.96	17.32			

Note: p <0.001*

In regards to internet usage and mental health, a Pearson's correlation analysis was carried out to determine whether there exists any correlation between mental health and internet usage. As shown in the results of the analysis in Table **4**, a statistically significant negative correlation with r = -.212 (p <0.01) was found between mental health and internet use.

Table 4. Correlation between mental health and internet usage.

Variable	1	2	
Internet Usage	-	-	-
Mental Health	-.212**	-	-

Note: * Significant at p <0.05, ** Significant at p<0.01

This indicated that mental health was inversely related to internet use. Students with sound mental health were found to use the internet to a lesser extent compared to higher use by those with poorer mental health. Therefore, H3 could be accepted. This finding corresponded to the findings of researchers like Caplan [41], Choi [42], *etc*.

This finding supports the notion that individuals with poor mental health tend to spend more time on the internet. The explanation as to why those with poor mental health tend to spend more time on the internet has to be further analysed. However, according to the theories of problematic internet

usage, it could well be assumed that individuals seek comfort in internet usage by escaping the anxiety of the real world.

To find out whether internet usage may be predicted by knowing the mental health scores, linear regression analysis using SPSS was carried out. The results of the analysis are presented in Table **5**.

Table 5. Regression analysis.

Model	-	Unstandardized Coefficients		-		Standardized Coefficients	
		B	Std.error	T	Sig	B	Std.error
1	(Constant)	24.44	2.04	11.96	<.001	-	11.96
	Mental Health	.30	.04	6.97	-	0.212	6.97

Note: Dependent Variable: Internet Usage

The results showed that internet usage can be predicted through mental health by 4%. This means that a decrease in mental health by one point/score would result in increased internet usage by four points. Though the percentage value is small, it is statistically significant at t (1035) = 11.96, F = 48.71, and p <0.001. So, H4 could be accepted.

CONCLUSION

Applying the ACE model, *i.e.*, Anonymity, Convenience, and Escape, the present study focusing on postgraduate students examined internet usage considering the behavioural features, which promote internet use, especially among mentally unstable people as these individuals find it difficult to deal with the real world and stressors. This study is unique as it looks into the cause of mental health instead of others, like Karim [18], whose review of the literature demonstrated that mental health problems are a result of problematic internet usage. This finding was also supported by Kwak [43], Bessière [44], Darshini [45], *etc*. All these studies focused on the internet usage behaviour of individuals and the effect it has on them but there is a lack of understanding as to why the internet usage behaviour is more in only certain individuals.

The present study sought to identify if mental health would effectively predict internet usage in postgraduate students. It was found that mental health would significantly predict internet usage, which is an important finding of the study. There is a significant negative correlation between internet usage and mental health, supporting the problematic internet usage models. This would help in finding intervention strategies for mental health problems that are effective instead of relying on the internet to escape the pressure and anxiety of life as it becomes a vicious cycle of addiction, further affecting mental health. It can be safely said that yes, the internet is indeed a crutch for mentally ill students. However, this crutch is a faulty one, which leads to further loss of mental health, and hence, better strategies to tackle mental health problems are to be identified and applied.

According to the present study, there is a significant difference in mental health as well as internet usage between the genders among Indian postgraduate students. This difference could be attributed to the pressure among female students regarding marriage and the successful completion of their studies. This is reflected in their priority given to academic surfing. It is a well-known fact that the parents of the girl child would not want to spend much on her education in the Indian scenario. This would result in depression and anxiety among the female students. The male students would also be under pressure to secure a job and settle down; however, in the patriarchal society, the males experience less societal pressure. Internet usage also differs between the genders significantly and this is due to the motivation to use the internet according to many studies. Using the internet for entertainment and social connections would activate the dopamine system, which is the reward-seeking system, and hence, the behaviour is reinforced due to the reward and thus being addicted to the internet.

LIMITATIONS OF THE STUDY

Since the coverage of the study is limited to postgraduate students, the findings may not be generalised to children and the elderly. Also, the findings are based on the data obtained from only two states in India and hence, they may not be generalized to either India or populations around the world.

The motivation behind the use of the internet has not been examined, which proves to be a limitation as a deeper understanding of the dynamics between mental health and internet usage would have been assessed with that knowledge. Personality traits influence the coping strategy that one would adopt in the face of stress and adverse situations. The lack of data pertaining to personality traits also does prove to be a limitation of the study.

FUTURE SCOPE

Based on the present findings, the study can be extended, including motivation for use and personality for enhanced lucidity on the concept that the internet is acting as a crutch for those with mental health issues and the extent of use might differ among the different personalities. In essence, the growing virtual world is impacting young adults much more than the observed façade.

LIST OF ABBREVIATIONS

ACE = Anonymity, Convenience, and Escape (ACE) Model

APA = American Psychological Association

DSM = Diagnostic and Statistical Manual

IAT = Internet Addiction Test

I-PAC = Interaction of Person-Affect-Cognition

MHI-5 = Mental Health Inventory

WHO = World Health Organization

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was approved by the Research and Development Cell of Sri Venkateswara University, Tirupati, India, as a part of Ph.D. research work (Reference number for ethics committee approval 2462023001).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Their consent has been made evident in signing the consent form.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data that support the findings of this study are available from the corresponding author, [N.S.S.G], on special request.

FUNDING

There is no funding source associated with this research.

CONFLICT OF INTEREST

There is no conflict of interest pertaining to this study.

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Declared none.

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