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THE RELATIONSHIP BETWEEN COLLEGE STUDENTS' SMARTPHONE ADDICTION AND DAS

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ABSTRACT

Many researchers have concentrated on Smartphone usage and addiction as a result of the rise in Smartphone's and technological improvements. Nonetheless, the goal of the current study is to provide some insight into how young adult Smartphone users in India relate to depression, anxiety, stress, and Smartphone addiction. To comprehend this association, purposive sample methods were combined with Spearman rho Correlation. The Depression, Anxiety, and Stress Scale (DASS-21) by Lovibond & Lovibond (1995) and the Smartphone Addiction Scale (SAS) by Known et al. (2013) were among the scales used. The sample was made up of 101 Jammu, UT, residents (52 men and 49 women) who were under the age range of 18-24 and had been frequent Smartphone users for at least the previous six months. The study& conclusions supported the hypothesis, which found a strong positive correlation between the variables.

Keywords: Anxiety, Addiction, Depression, Stress, Smartphone

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1. INTRODUCTION

"The world is changing more quickly than ever thanks to technology. The Smartphone is the current catalyst". - Larry Rosen, author of idisorder.

The average Smartphone penetration rate in 47 nations was 44.6%, according to a recent market study, and this number is projected to rise quickly. Smartphone's are now considered necessity in people's life rather than cutting-edge communication devices. For people who use Smartphone, their phone is the last thing they glance at before going to sleep and the first thing they look at in the morning (Oulasvirta et al., 2012)actually discovered that their subjects checked their phones 34 times each day not necessarily out of a sense of necessity, but more out of habit. For Smartphone users, excessive usage and repetitive checking of missed calls or texts can lead to compulsive use of the device or even mobile phone addiction(Bianchi & Phillips, 2005; Oulasvirta et al., 2012; Takao et al., 2009).

Smartphone's are used by people for amusement or stress relief. Such usage can produce instant gratification, but it can also result in persistent behavior and be accompanied by a decreased sense of volitional control (Thomée et al., 2011). Depression and sleep disturbance are two indications of compulsive use of substances (Thomée et al., 2011).Regular technology use is associated with increased psychological suffering(Couples & Study, 2005). According to medical literature, electromagnetic radiation from cell phones may have an impact on biological systems by altering the antioxidant defense mechanisms in human tissues, which can result in oxidative stress (Ozguner et al., 2005). Therefore, due to both psychological and biological factors, obsessive Smartphone use increases user stress(Ambica, 2023).

This study incorporates techno stress, which is defined as "a modern sickness of adaptation caused by an incapacity to cope with the latest computer technology in a healthy manner," to identify the stress associated with Smartphone use. End users who experience stress as a result of information and communication overload are said to be experiencing techno stress(Ragu-Nathan et al., 2008).The intensity of techno stress is made worse by the rapid development of networking and end-user computing technology. As a result, we anticipate that the Smartphone user would experience more techno stress and hence feel more stressed. (Charles et al., 2013) found that everyday stressor exposure had detrimental long-term consequences on consumers' mental health. Overdependence on cell phones may result in compulsive usage and increase user techno stress because they are a key information technology device and individuals feel the need to adapt to them in order to "keep up with the times."

Recent research revealed the significance of psychological and personality traits in compulsive technology consumption(Roberts & Pirog, 2013; Takao et al., 2009).

Previous studies have also discovered that some psychological characteristics may affect a person's capacity to handle stress or render them prone to it (Ebstrup et al., 2011).Additionally, psychological characteristics (Feingold, 1994), cell phone use (Leung & Wei, 2000), and obsessive behavior (O'Guinn & Faber, 1989) are all observed to differ by gender. Considering gender differences in the relationships between psychological traits and compulsive Smartphone usage, this article adds to these developing streams of research by examining whether and how psychological traits contribute to compulsive Smartphone use as well as whether this compulsive usage affects a user's techno stress level. Following a thorough analysis of pertinent research in the areas of psychology, psychiatry, sociology, consumer behavior, and mobile commerce, a number of ideas are put forth(Ambica, 2023).

Addiction: The term addiction is tough to outline, and therefore the conception of addiction has been mirrored as debatable; but, the foremost necessary definition of addiction is that dependence on a substance or activity.

Behavioral addiction and Substance addiction: There are two styles of addiction, one is dependence like alcohol; caffeine; cannabis; hallucinogens; inhalants; opioids; sedatives, hypnotics, and anxiolytics; stimulants; and tobacco and therefore the difference is action behaviors like games, internet, even Smartphone. Current criteria for designation area unit enclosed within the Diagnostic and applied mathematics Manual of Mental Disorders (DSM-V)

The risk of anxiety and depression may be increased by excessive Smartphone use combined with a negative outlook, sensation of anxiousness, and dependence on technology (Rosen et al., 2013; Thomée et al., 2011). (Gutiérrez et al., 2016) found that sleep deficit, depression, anxiety, and stress had all been correlated with problematic cell phone use. Nevertheless, it had been over that excessive Smartphone use had a negative psychological impact. Another empiric study reports that sleep quality might result in depression. Li et al. (2016) did a prospective cohort and projected that sleep quality and risk of depression square measure associate(Shoukat, 2019).

Users of Smartphone are drawn to them because they are accessible and informative. Previous studies revealed a connection between depression and excessive Smartphone use, including messaging, social networking, gaming, watching videos, emailing, and listening to music. These findings demonstrated a considerable rise in both users' stress levels and their excessive and obsessive use of Smartphone. Smartphone users' increased "techno stress" and compulsive use are positively connected with social anxiety, locus of control anxiety, materialism, and a need for touch and communication.(Y. K. Lee et al., 2014).

The final category (criterion C): Was the exclusion criteria to rule out manic episodes or by bipolar disorder and obsessive-compulsive disorder (OCD)(Lin et al., 2016).

Addiction of Smartphone: Smartphone addiction has become a growing concern due to the explosive growth in Smartphone use and the abundance of functions these devices offer(M. Kwon, Kim, et al., 2013). Internet addiction and Smartphone addiction share many similarities. However, there are certain distinctions as well, such as cell phones' portability, real-time Internet access, and simple and direct communication features(M. Kwon, Lee, et al., 2013). Behavior

addictions, such as Smartphone addiction, are typically challenging to identify since they are influenced by social and psychological as well as physical elements(H. Lee et al., 2014).

There are no official diagnostic standards for Smartphone addiction. However, based on how Internet addiction is defined, Smartphone addiction is the excessive usage of cell phones to the point where it interferes with users' daily life. According to research by (Roberts et al., 2014), college students use their phones for about nine hours every day. According to the experts, as cell phone capabilities increases, it seems impossible to escape becoming addicted to this almost inevitable piece of technology. In a 2012 study carried out in South Korea, it was found that Smartphone addiction was more common (8.4%) than internet addiction (7.7%). The same survey found that Smartphone addiction affects 10.4% of those in their 20s and 10.4% of people in their 10s (South Korea National Information Society Agency, 2011)

Depression: It is referred to as major Effective disorder or emotional disturbance may be a common and high mood disorder. People who suffer from depression experience persistent feelings of disappointment and despair and lose interest in activities they once enjoyed. Aside from the emotional problems caused by depression, individuals can also gift with physical symptoms like chronic pain or process issues. To be diagnosed with depression, symptoms ought to be present for a minimum amount of your time. Symptoms of depression vary between males and females. Depressed men show behaviors like irritability, restlessness, issue in concentrating, rather than the standard behaviors. Sleep disturbance could be a common symptom in depressed men. Men are less doubtless to travel to doctors and unconsciously show alternative behaviors like anger rather than disappointment. It appears that considering depression as “feminine” could be a nice injustice toward male patients whose sickness won't be diagnosed nor treated(Chowdhury & Chakraborty, 2017).

Anxiety: The Latin term "anxiety," which means "to choke, throttle, trouble, or upset," is the source of the word. It refers to behavioral, affective, and cognitive reactions to the impression of risk. A typical human feeling is anxiety. An anticipatory and adaptive reaction to difficult or stressful events is stimulated when anxiety is present, but only in moderation. When anxiety is excessive, it destabilizes the person, which leads to a dysfunctional state. When anxiety develops in the absence of a challenge or stressful situation, when it lasts longer than expected or is more severe than expected, when it causes great distress, and when it impairs one's ability to function in social, occupational, biological, or other ways, it is deemed excessive or pathological.

Stress: The DSM-5 describes acute stress disorder because of the development of specific worry behaviors that last from three days to one month once a traumatic event. These symptoms forever occur once the patient has intimate with or witnessed death or threat of death, serious injury, or sex crime. Samples of traumatic events from the DSM-5 embrace physical attack, physical abuse, mugging, active combat, sexual violence, natural disaster, and high accidents. Acute stress disorder can even result from hearing concerning the violent or accidental trauma of a lover, or continual exposure to traumatic events (American Psychiatric Association, 2013). Outcomes of acute stress disorder area unit best once the victim has access to immediate crisis management medical care. Once psychotherapy is untouchable, acceptance and commitment medical care is an efficient therapeutic intervention(Ambica, 2023).

2. REVIEW OF LITERATURE

Since long ago, communication has had a significant impact on our civilization. Over time, its tools and apparatus have been developed, enabling us to communicate with people more quickly and easily. A Smartphone has recently taken the top spot among communication devices in people's daily lives (Suparp 2006). Since the introduction of the first mobile phone in 1983, the Smartphone has evolved. Digital technology was integrated with Smartphone technology between 1993 and 2003, resulting in a variety of functionalities. (Palachaipiromsil, 2011) The Smartphone might offer a variety of capabilities like a camera, games, and a multitude of applications when it could connect to the internet. Most critically, Smartphone are becoming much more affordable. These contributed to the recent rise in popularity of Smartphone.(Boonuyang et al. 2015) People can use Smartphone to connect with pals online so they can control and lead more convenient lifestyles, including for business and personal amusement in addition to communication (Wacks & Weinstein, 2021).

By employing the terms "Smartphone addiction & Disorders," (Sinsomsack & Kulachai, 2018) performed a study to examine Smartphone addiction among high school students and its impact. 341 high school students from Thailand's Eastern province made up the study's sample, which was selected using stratified random selection. The data was gathered via the questionnaire. After that, correlation statistics were used to assess the data. The findings suggested that

Smartphone addiction was beneficial for mood disorders. Additionally, it had a detrimental effect on the academic performance, family relationships, social relationships, and health of high school kids. (Y. S. Kwon & Paek, 2016) The National Information Society Agency (NISA) developed an instrument for the study the Influence of Smartphone addiction on depression and communication competence among college students to evaluate Smartphone addiction. The study's goal was to investigate the relationships between depression, communication competence, and level of Smartphone addiction as well as to identify factors related to Smartphone addiction of college students. The association between Smartphone addiction and social-environmental and psychological aspects is only partially explored in this study, and more research is needed. According to a large UK cross-sectional observational study, the association between Smartphone addiction and sleep of young adults (Sohn et al., 2021) examined the relationship between Smartphone addiction and sleep quality in a young adult population and found that Smartphone addiction was associated with poor sleep, independent of usage duration, suggesting that usage duration should not be used as a proxy for harmful use.(Sangam et al., 2015) researchers looked into the relationship between Smartphone addiction, anxiety and depression among undergraduate students in Malaysia to determine the connection between Smartphone addiction and anxiety and depression among Malaysian undergraduate students. Data were gathered using the Beck Anxiety Inventory (BAI-M), Beck Depression Inventory (BDI-M), and Smartphone Addiction Scale (SAS-M). IBM SPSS software version 21.0 was used to analyze the data. The results of this study revealed that university students in Malaysia had a propensity for Smartphone addiction and were exposed to anxiety and depression. (Pandemic & Limone, 2021) studied the psychological and emotional effects of digital technology on children with the goal of examining the impact of digital technology on kids during a pandemic, as well as the psychological and emotional effects of “COVID” and "Neurological Effects of Lockdown." They discovered that increased technological use during the pandemic has both positive and negative effects, depending on usage. As much as Smartphone can help people who are lonely or in a locked room, they are also to blame for major mental diseases like sadness, anxiety, irritation during sleep, and cognitive decline. It is advised that parents integrate educational and imaginative games into their homes and should inspire their kids.

(Li et al., 2021) researchers looked into the relationship between loneliness and problematic mobile phone use while taking the effects of escape motivation and self-control into account. By using cluster sampling and distributing a number of self-reported questionnaires, they discovered that loneliness was positively correlated with both problematic mobile phone use and escape motivation. (Elhai et al., 2020) investigated the relationships between depression and anxiety as well as the intensity of problematic Smartphone use (PSU). Through a web-based survey that examined Smartphone use frequency, PSU, depression, anxiety, and FOMO, they recruited 1034 Chinese undergraduate students in order to analyze the fear of missing out (FOMO) as a potential mediator in these interactions. They discovered according to structural equation modeling, the frequency of Smartphone use and the severity of PSU were both substantially correlated with FOMO. Significantly mediating the relationships between anxiety, Smartphone use frequency, and PSU intensity is FOMO. The correlations between depression and Smartphone use/PSU were not taken into account by FOMO(Ambica, 2023).

Alhassan et al.(2018) investigated adults all around the world struggle with Smartphone addiction, which has the potential to be harmful to their welfare. This study looked into the incidence of the risk factors for depression and Smartphone addiction in a Middle Eastern population. A web-based questionnaire that was disseminated via social media was used to conduct this cross-sectional study in 2017. The percentage means score (PMS) of the responses to the Smartphone Addiction Scale - Short version's (10-items) questions was computed using a 6-point Likert scale. Responses to the 20 items of the Beck Depression Inventory were summed (interval 0–60); their mean score (MS) was computed and classified. Higher scores showed higher degrees of despair and addiction. Descriptive and regression analysis were used to find the factors that were related to these results. The cutoff for statistical significance was P 0.05. According to the findings, there is a highly significant positive linear link between Smartphone addiction and depression ($y = 39.2 + 0.8$; $P = 0.001$). Younger Smartphone users had significantly higher scores for Smartphone addiction ($\beta = 0.203$, adj. $P = 0.004$). Users who had less formal education than the university-educated group ($\beta = 2.034$, adj. $P = 0.010$) and those who scored higher on Smartphone addiction ($\beta = 0.194$, adj. $P < 0.001$) were factors linked to higher depression ratings. It is concerning that a researcher discovered a link between depression and Smartphone addiction. Smartphone use should be moderate, especially among younger folks and less educated users who may be more susceptible to depression.

According to a study by Yehuda Wacks and Aviv M. Weinstein published in 2021, excessive Smartphone use is linked to health issues in adolescents and young adults. Reviewing the research that has been done on the negative effects of excessive Smartphone use on both physical and mental health. Up until February 2021, searches on Pub Med Central and Web of Science produced 84 English-language research studies using the terms "excessive Smartphone use" and "Smartphone addiction." Their research reveals co morbidity with alcohol use disorder, OCD, ADHD, OCD, and

depression. The use of Smartphone excessively is linked to cognitive-emotion control issues, impulsivity, and cognitive impairment, addiction to social media, shyness, and low self-esteem. Medical issues can include sleep issues, decreased physical activity, unhealthful eating patterns, pain and headaches, impaired cognitive function, and alterations in the grey matter volume of the brain. In summary, excessive Smartphone use is linked to psychiatric, cognitive, emotional, and neurological alterations that health and education experts should take into account(Wacks & Weinstein, 2021)(Ambica, 2023).

Objectives

1) To examine the relationship between smart phone addiction and depression.
2) To examine the relationship between smart phone addiction and anxiety.
3) To examine the relationship between smart phone addiction and stress.

Hypothesis

H_1. There will be significant relationship between smart phone addiction and depression.

H_2. There will be significant relationship between smart phone addiction and anxiety.

H_3. There will be significant relationship between smart phone addiction and stress.

3. RESEARCH METHODOLOGY

Sample: The sample for the present study consisted of 101 adults of government colleges of Jammu (52 males & 49 females), age ranging between 18 to 24 selected with the help of convenience and purposive sampling technique. Spearman's rho correlation statistical test was used.

Tools:

1) Smartphone Addiction Scale (SAS): SAS is developed by Known et al. (2013). The scale was produced in South Korea and the creators utilized 197 South Korean volunteers in the development and validation of the SAS, with ages ranging from 18 to 53. The researcher retained all 33 items from the Smartphone Addiction Scale (SAS). The investigator divided the level of Smartphone use into categories based on administration and scoring simplicity. The test-retest methodology was used to evaluate the tool's dependability. It was discovered that the dependability coefficient was validity .70. A total SAS score was generated by adding the respondents' scores.

2) Depression Anxiety Stress Scale – 21 Items (DASS-21): DASS-21 is developed by Lovibond & Lovibond (1995). Seven questions were included to gauge depression. A score of more than 27 was deemed to indicate an exceedingly severe case of depression. This scale's anxiety section assesses situational anxiety, skeletal muscle effects, autonomic arousal, and the individual's perception of anxious affect. Seven questions were included to gauge anxiety. A score of 20 or higher was regarded to indicate an exceptionally severe case of anxiety. Seven questions were used to assess stress. A score of more than 34 was regarded as indicating an exceedingly severe stress condition. The sum of the scores for each component was multiplied by 2 because this was the condensed version. The entire DASS-21 Cronbach's alpha was 0.74. The DASS-D subscale, DASS-A subscale, and DASS-S subscale all have Cronbach's alpha values of 0.66, 0.29, and 0.52 respectively. The ordinal alphas were 0.83, 0.74, and 0.87 for the DASS-D, DASS-A, and DASS-S subscales, respectively.

4. RESULTS & DISCUSSION

On the basis of objectives and hypotheses following results are described in tables.

Table 1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SAS	101	44	198	1.12E+02	29.3079
Depression	101	0	40	16.7723	10.22534
Anxiety	101	0	42	16.5248	10.42554
Stress	101	0	42	17.2079	10.29982
Valid N (listwise)	101				

Table 1.1 showing Descriptive statistics of the sample

As shown in table-1 the sample population for the entire variable was 101. The mean score of Smartphone addiction scale was 1.117 and SD was 29.30. The mean score of depression, anxiety and, stress scale was 16.77, 16.52 and 17.20 and SD was 10.22, 1042 and 10.29.

Table 2: Correlations

			SAS	Depression	Anxiety	Stress
Spearman's rho	SAS	Correlation Coefficient	1.000	.687**	.720**	.720**
		Sig. (2-tailed)	.	.000	.000	.000
		N	101	101	101	101
	Depression	Correlation Coefficient	.687**	1.000	.763**	.819**
		Sig. (2-tailed)	.000	.	.000	.000
		N	101	101	101	101
	Anxiety	Correlation Coefficient	.720**	.763**	1.000	.855**
		Sig. (2-tailed)	.000	.000	.	.000
		N	101	101	101	101
	Stress	Correlation Coefficient	.720**	.819**	.855**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	101	101	101	101

**. Correlation is significant at the 0.01 level (2-tailed).

Spearman's rho correlation was used to see the correlation between the Smartphone addiction (SA), Depression, Anxiety and, Stress (DAS). Table 2 represents the correlational analysis among the variables of the study. As can be seen, all the variables were shown to have a positive correlation between them. Correlation between depression and Smartphone addiction (.687), which shows that our first hypothesis stands accepted. Correlation between anxiety and Smartphone addiction (.720), so our second hypothesis is also accepted. Correlation between stress and Smartphone addiction (.720), this again shows that our third hypothesis also accepted. Findings of the present study revealed that there is a significant correlation between Smartphone addiction, depression, anxiety and stress at 0.01 level. Supporting evidence and research of (Elhai et al., 2017) shows that there is a correlation between Smartphone addiction and anxiety, also revealed the correlation between Smartphone addiction and stress. Another supporting research (Alhassan et al., 2018)investigated adults all around the world struggle with Smartphone addiction, which has the potential to be harmful to their welfare. According to the findings, there is a highly significant positive link between Smartphone addiction and depression.(Gutiérrez et al., 2016) found that sleep deficit, depression, anxiety, and stress had all been correlated with problematic cell phone use.(Sangam et al., 2015) the results of this study revealed that university students in Malaysia had a propensity for Smartphone addiction and were exposed to anxiety and depression. Additionally, there were significant connections between the stress, anxiety, and depression subscales of the DASS-21 and PSU and their findings imply that general signs of depression, anxiety, and stress may contribute to problematic Smartphone use among Iranians(Pourafshari et al., 2022)(Ambica, 2023).Table-2 also shown there is a positive correlation between Depression and Anxiety (.763), Depression and Stress (.819), Anxiety and Depression (.763), Anxiety and Stress (.855), Stress and Depression (.819), Stress and Anxiety (.855). One reasonable explanation for this could be that adults prefer using their Smartphone for emotional expression over face-to-face contact since they are far more accessible, practical, and easy to use.

5. CONCLUSION

Young adults are using Smartphone more and more carelessly, which can have a variety of negative effects on them. The current study demonstrates the positive correlation between Smartphone addiction, stress, anxiety, and depression. The findings of the study can be used to comprehend the intricate relationships between the three variables and their psychological associations with one another.

CONFLICT OF INTERESTS

None.

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