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Prevalence of smart phone addiction and its impact on sleep quality and selected psychological problems among nursing students of selected nursing colleges, Rohtas, Bihar

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Abstract
Introduction: Smartphones have become an integral part of youth. But at the same time addiction towards its use have become a serious concern among them.
Objective: The main objective of the study is to determine the prevalence of smartphone addiction among the nursing students. Further the study was done to find out the association between the smartphone addiction with sleep quality and some selected psychological problems, along with its association with selected demographic variables.
Research Approach: A quantitative research approach was adopted in which cross sectional research design was used by the researcher and the samples were chosen by convenient sampling technique. The nursing underwent various scales to assess the relationship between smartphone addiction, sleep quality and psychological problems.
Result: The researcher reported that almost 77 students (36 male and 41 female) found to be addicted with smartphone usage. Further on, a fair positive significant association (0.226) was obtained between smartphone addiction and sleep quality. The researcher identified and mention that fair positive relationship found between smartphone addiction and psychological problems such as depression, anxiety and stress at the p level <0.001.
Conclusion: Thus, the analysis suggested that there is a need to develop counselling programs where experts can raise the awareness of university students, to understand the Pons and cons of smartphone usage.

Keywords: smart phone addiction, stress, sleeps quality, anxiety, depression

Introduction
Smartphone addiction, sometimes colloquially known as "nomophobia", is often fuelled by an internet overuse problem or internet addiction disorder [3]. Cell phone addiction consists of four main components: obsessive phone use, behaviours such as repetitive checking for messages or updates; tolerance or longer and more intense of use; withdrawal or feelings of agitation or suffering without the phone; and functional impairment or interference with other life activities and face to face social relationships [2]. Feeling of dread, anxiety, or panic if you leave your smartphone at home, the battery runs down or the operating system crashes. All these are very similar to the characteristics of internet addiction [6].

Background of study
With the fast development of mobile technology, many functions of desktop computers have been transferred to mobile devices like i-pad and smartphone, which is especially the case for game application [17]. With the fast development of mobile technology, many functions of desktop computers have been transferred to mobile devices like i-pad and smartphone, which is especially the case for game applications [1]. Various study reported that night time smartphone use, poor sleep behavior, and depressed mood, but in longitudinal analyses, changes in night time phone use was not directly associated with subsequent changes in depressed mood [4]. Besides sleep outcomes, "bedtime" mobile phone use was associated with reduced mental health, suicidal feelings and self-injury, depressive symptoms anxiety and stress, low self-esteem, and reduced cognitive performance in one study, but not in another [7].

Need of the study

Globally, studies state that compared to teens who only spend an hour on electronic devices daily, teens who spend five or more hours a day on electronic devices are 71% more likely to exhibit suicide risk factors. 47% of parents surveyed believe their child has a smartphone addiction[5]. In the 18 to 29 year old age category, 22% of smartphone using respondents admitted to checking their device every few minutes [8]. 41% of teenagers feel overwhelmed by the quantity of notifications they receive on a daily basis. Rather than in-person interaction, 33% of teens spend more time socializing with close friends' online [8]. Recent studies have observed that smart phone overuse has been associated with disturbances in sleep, daytime activity, and performance among students, which encompass the domains of biorhythms [9]. It has been estimated that smart phone addiction magnitude in India ranged from 39% to 44% as per fixed effects calculated ($P < 0.0001$) [11].

Objective

- To determine the prevalence of smart phone addiction in nursing students.
- To examine the association between the smart phone addiction and sleep quality among nursing students.
- To examine the association between the smart phone addiction and selected psychological problems among nursing students.
- To find out the association between the selected demographic variables with smart phone addictions, sleep quality and selected psychological problems among nursing students.

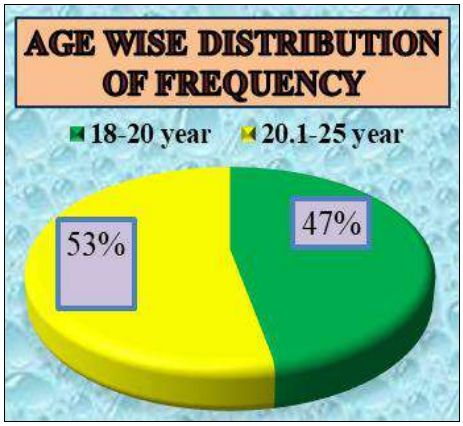
Research methodology

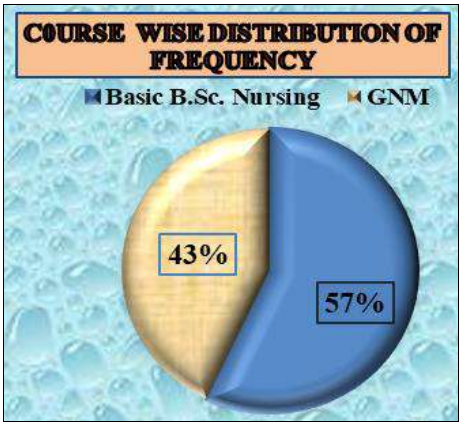
In this study a quantitative approach was used to the prevalence of smart phone addiction and its impact on sleep quality and selected psychological problems among nursing students. The investigator adopted a non-experimental cross sectional research design was applied was used to assess the prevalence of smart phone addiction & it's impact on sleep quality, selected psychological problem among nursing students [16]. The present study was conducted in 100 nursing students selected from the nursing college of Rohtas, Bihar.

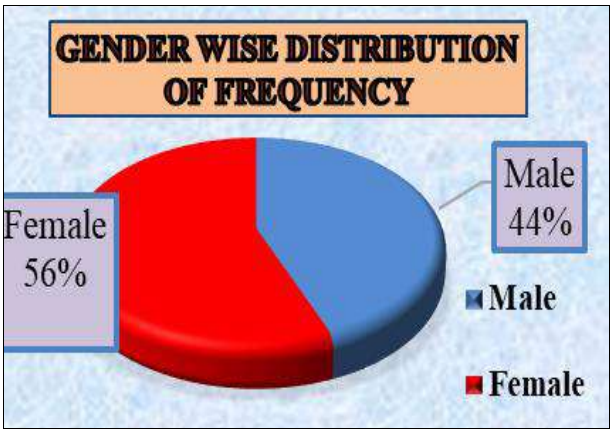
Tools

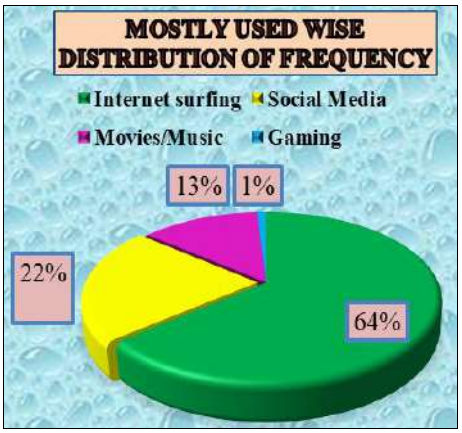
The samples underwent various scales such as smart phone addiction scale for assess the smartphone addiction, Pittsburgh Sleep quality scale was used to assess the sleeping quality and DASS -21 scale was used to assess the depression, anxiety and stress among the nursing students. Smartphone usage among the nursing students was assessed by Smart phone Addiction Scale- Short Version[15]. The PSQI includes a scoring key for calculating a patient's seven sub scores, each of which can range from 0 to 3.While, DASS21 -scale. Comprises three subscales that each has seven items: depression, anxiety, and stress [16].

Results









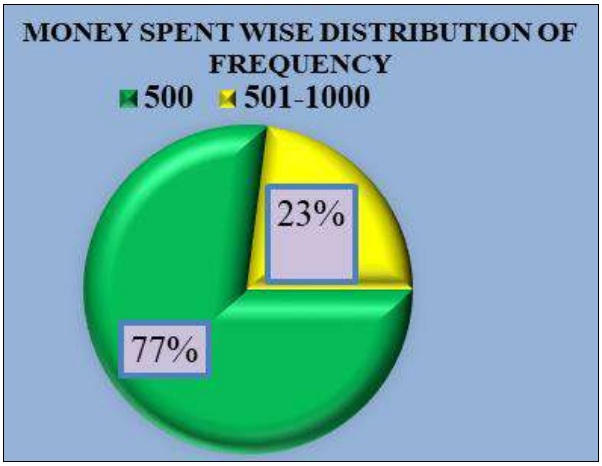


Fig 1: Frequency and percentage distribution of selected sample characteristics

Table 1: The prevalence of smart phone addiction in nursing students.

Level	Gender		Number of students	Percentage
	Male	Female		
Addiction (More than 31)	36	41	77	77%
Higher Level(22-31)	07	12	19	19%
Normal User(18-21)	01	03	04	04%

The present data stated that, categorizing the gender wise description regarding phone addiction, it has been noted that out of 77 students, 41 females were highly addicted to phone, followed by 12 girls were belongs to higher level and 3 found to be in normal user. Further, reporting about males 36 were strongly addicted, 7 found to just high level and 1 belong to normal user.

Table 2(A): Association of smart phone addiction and the sleeping quality

Sl no	Variables	Groups	Number	Percentage
01.	Sleep quality	Good Sleeper	46	45%
02.		Poor Sleeper	54	54%
	Component number	**Name of the Component**	**Average**	**Standard Deviation**
01	C1 (#9 Score)	Subjective Sleep Quality	0.677	0.78
02.	C2 (#2+#5a Score)	Sleep Latency	1.23	0.686
03.	C3 (#4 Score)	Sleep Duration	0.89	0.687
04.	C4 (Total sleep/Total time in Bed ×100)	Habitual Sleep Efficiency	0.291	0.69
05.	C5 (Sum of #5b to #5j)	Sleep Disturbances	0.52	0.522
06.	C6 (#6 Score)	Sleep Medication	.427	0.611
07.	C7 (#7+#8 Score)	Daytime Dysfunction	0.84	.075
	Sum of C1-C7	Global PSQI Score	0.69	0.675

Table 2(B): Pittsburgh sleep quality index for assessing the sleep quality

PSQI score range	Addicted	Higher	Normal	Total	r	P
Good Sleep	31	14	01	46	0.226	7.59(S) (p=0.2244)
Poor Sleep	46	05	03	54		
Total	77	19	04	100		

When analysis the correlation for determining the association between the smartphone addiction and sleep quality, it has been estimated that out of 77 addicted 31 were good sleeper and 46 had poor sleep, further 14 of higher level found to have god sleep and 05 had poor sleep, whereas the samples who were in normal 1 had good sleep but 03 other had poor sleep. When Karl Pearson coefficient formula was used, and it was reported that a fair positive relationship-.226 was observed. The probability was assessed, it was found to be 7.59 significant, and thus a significant association was obtained between phone addiction and sleep quality.

Table 3(A): Association between the smartphone addiction and selected psychological problems among nursing students.

Content	Normal	Mild	Moderate	Severe	Extremely	Mean & Standard Deviation
Depression	50	29	16	00	05	10.2 ± 7.03
Anxiety	25	19	41	09	07	10.78±6.437
Stress	73	09	09	08	01	12.8±6.8

The researcher further investigated the psychological problems among the nursing students, and it was highlighted that among 100 nursing students 50 does not show sign of depression, 29 had mild symptoms, 16 showed moderate sign, and 3 had extremely depressive state. When analysed for anxiety, 25 showed no symptoms, 19 had mild anxiety, 41 experience moderate anxiety, 9 had severe and 7 had extremely high level of anxiety. Lateron, there were also assessed for the stress level and it was presented that 73 showed no stress symptoms, 9 had mild, 9 had moderate, 8 showed severe symptoms and 1 had extreme stressed phenomenon.

Table 3(B): Association of smart phone addiction with depression, anxiety and stress (DASS21).

Parameters	Smart Phone Addiction r	p-value
Depression	0.027	<0.001
Anxiety	0.143	<0.001
Stress	0.018	<0.001

The next step of the researcher had to show the association between the phone addiction and selected psychiatric problems, the researcher identified and mention that fair positive relationship between the depression, anxiety and stress at the p level <0.001.

Section 1: Association between the Selected Demographic Variables with Smart Phone Addictions, Sleep Quality and Selected Psychological Problems among Nursing Students.

The further step of the researcher assessed the association between the socio demographic variable with phone addiction and it was focussed that age, gender, type of living and money spent variable found to be significant and rest found to be insignificant.

While describing the association between the demographic variable and sleep quality, mostly utilized, type of living and money spent found to be significant at 0.05 level of significant and rest found to be insignificant. Regardless of the association with demographic variable with depression on the psychological problem, it was identified that gender, most utilized, type of living and mostly used found to be significant and rest insignificant**.** Similarly, while finding out the relationship between the anxiety and variables gender, mostly spent and utilization of internet found to be significant. Lastly, the chi-square used for the association of demographic details with stress, it was observed that age, educational status and mostly used found to be significant.

Conclusion

The present study throws light to the need of awareness among the nursing students towards harmful effects of smartphone addiction. The study offered offer recommendations to develop counseling programs and symposia where experts can raise the awareness of university students, especially single and undergraduate programs students of how to use smartphones and avoid the negative effects resulting from addiction. The study provides a remedial program to help smart phone addicts overcome addiction as well as conduct research to predict factors affecting smart phone addiction among university and school students. Finally, it would be worthwhile investigating the factor structure of the smart phone addiction questionnaire used in the present study.

Nursing practice

Prevention is better than cure, thus smartphone addiction among nursing students is recommended for early detection so that appropriate interventions can be planned accordingly. We also have to take into account the high prevalence of male nursing students. Several approaches can be suggested to nursing students who require further help for smart phone addiction; namely cognitive-behavioral approach, motivational interviewing, and behavioural cognitive treatment.

Nursing education

Nursing students are under stressful nursing students training; therefore they are prone to being under stress which in turn lowers self-control which may increase their chances of smart phone addiction. The nurses works as front lines and are familiar with and educated to recognize warning signs such as changes in university study performance, mood changes, complaints of illness before or during the academic session, problems at home, self-harm, and suicidality. Smartphone addiction is influenced by self-control. The nurses identify behavioral health screening and basic behavioral health skills that include education about mental health and substance use disorders, psychotropic medication information, and cognitive behavioral skills.

Nursing administration

It raises a deep concern because academic performances may be affected by a large number of nursing students with smartphone addiction. As a consequence of smart phone addiction, individuals with smartphone addiction might meet with difficulties such as interpersonal adjustments, managing time, and academic performance. This might affect the performance of the nursing school as a whole in terms of academic results.

Nursing research

Depression, anxiety, stress and low sleep quality significantly predict smartphone addiction level, as in research hypothesis further broad-spectrum study is much needed to reveal the true cause(s) of such poor sleep quality among nursing students. Thus it has been seen that an increase in stress degree results in a lowered self-control ability, and reduction in self-control further increases the chances of smartphone addiction. Findings of this study will provide a baseline data for the future studies to build upon.

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