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Original Article

Influence of Smartphone Usage on Health Causing Insomnia and Binge Eating

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ABSTRACT

Smart phone is an electrical device and its use is increasing day by day even in the growing countries like Pakistan. Difficulty in sleeping and disturbed sleep quality is termed as insomnia and binge eating is a psychological disorder characterized by overeating **Objective:** To assess the influence of excessive use of smart phone on health causing insomnia and binge eating **Method:** A Cross Sectional Study was conducted on 100 university students in Lahore to assess the influence of smart phone usage on health causing binge eating and insomnia. A self-formulated questionnaire was used including questions like (age, sex, weight, height, snacking while using smart phone and sleep quality). Purposive Sampling technique was used to collect data. Adolescent's aging 20-25 years were participants of the study. Data was analyzed through latest version of SPSS **Result: O**ut of total 100 participants, 69 were females and 31 were males. Majority (61%) of the participants were having disturbed sleep quality due to smart phone usage and 64% were binging while on their smart phones using social media **Conclusions:** Percentage of smart phone usage is contributing to sleep disturbances and high calorie intake in university students. The results suggest that students who were addicted to smartphones were having sleep disturbances and were also binging. In addition, it was also affecting their weight as their BMI were increased.

INTRODUCTION

Smart phone usage has become an essential part of life. Smartphone is an electrical device that provides access to additional soft wares, internet and social sites, chatting, watching videos and playing games [1]. The use of this device is increasing day by day even in the growing countries like Pakistan has 32.5 million users of smartphone [2]. In this modern era of advancement smart phones has become an integral part specially for young generation and students. According to a survey, the frequency of mobile phone users has increased from 12.4 million to 7 billion from year 1990 to 2014 worldwide. There are significant benefits of smart phones which cannot be neglected but at the same time its excessive use has number of harms on health and education [3]. There are other terms which can be used for the common smart phone usage as "smart phone addiction" or mobile phone addiction [2] which is defined as a form of technological addiction and addiction is defined as a too much use despite of the harmful consequences [4]. Studies revealed that the excess smart phone usage is linked with negative health and psychological consequences like disturbed sleep and binge eating [2]. According to study sleep is the altered state of consciousness that includes unresponsiveness to the environment. The recommended sleep hours are 7 to 9 hours and sleeping less than this will lead to harmful health effects [5]. Difficulty in falling asleep and disturbed sleep quality is termed as insomnia [6]. Binge eating is an eating disorder characterized by excessive eating until the person feels uncomfortably full [7]. A study revealed that the distraction can lead to

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overeating and the distraction provided by smart phone during meals increases both calories intake and also effect the types of calories ingested and eating with distractions like smartphones leads to 15% increase in calories through lipids [8]. The sleep quality has been negatively affected by the use of smartphone and similarly it reduces the sleep time and leads towards an unhealthy lifestyle. In a study of university students, it was revealed that students with poor sleep quality were having high calorie intakes [9]. There is an association between smart phone usage in bed and depression leading to sleep disturbance. The excessive screen time can cause difficulty in the onset of sleep, less physical activity, lower muscle mass and high fat mass [10]. The study describes exercise as an intervention for the smart phone addiction, according to the study results it was evident that exercise can reduce the usage of smart phone. Smart phones addiction can lead to the increased risk of psychological disorders. Psychological interventions can be used in treating smart phone addiction, insomnia and also binge eating [11,12].

Alshobaili and Alyousafi,2019 conducted a cross-sectional study design on a sample of 435 Saudi grown-adult aged 21 years about sleep time utilization of cell phone and rest quality. Result showedover 98% of the respondents possessed a cell phone, and the vast majority was using their cell phones at sleep time [13]. Rafique *et al.*, 2020 conducted a cross-sectional study on 1925 students (adult 17-23yrs) from different Colleges of Saudi Arabia through convenient sampling using online questioner's form. This study presumes that utilizing mobile screen 8 hours/24 hours, using the mobile for somewhere around 30 minutes prior to sleep after the lights have been turned off and keeping the mobile close to the bed are decidedly connected with poor sleep quality [14]. Nowreen and Ahad, in 2018 conducted a survey on 236-college student of Jammu and Kashmir and revealed that the prevalence of cell phone obsession was found among 34.4% respondents whereas 62.7% were poor sleepers [15]. Krishnan *et al.*, 2020 conducted a observational study among 450 medical students to find out association between demographic details and cell phone variables. Results revealed that respondents had huge drawn-out sleep inactivity, diminished sleep span, sleep shortcoming and daytime rest aggravations. Absence of mindfulness about night shift mode, lying posture use while utilizing telephone during sleep time associated with low quality sleep [16].

Xie X *et al.*, 2018 conducted research on 686 middle and secondary school students about sleep and rest quality. The outcomes showed that young people went through 1.24- 1.68 hr. each day utilizing cell phones [17]. Yu wang etal.,2019 conducted an exploratory study on 409 students to find relationship between rest quality and cell phone reliance. The results revealed that student's level of cell phone reliance was better than their rest quality [18]. Goncalves *et al.*, 2019 revealed in cross-sectional study that eating while cell phone usage is linked with obesity patternsas 46% of men and 30% ladies were overweight or hefty who eat wild while utilizing telephone [19]. Kartal and Ayhan, 2020 in a cross-sectional study on 437 students about eating conduct problems, internet addiction, and cell phone compulsion. According to results12.6% of the students participating in the study were at risk of dietary problems. Female students had higher scores than male students [20].

METHODS:

A Cross-sectional study was conducted at The University of Lahore involving 100 university students. Convenient sampling technique was used to collect data fromadults of both genders ranging from age 20-25 years respectively. Adults with any disability were excluded from study.

RESULTS:

Analysis showed that out of 100 participants 31 were male and 69 were female. According to Body Mass Index out of which 16 have BMI of less than 18 kg/m, 57 were between 18-24.9kg/m, 22 were between 25-29.9kg/m and 5 were between 30-34.9kg/m(Figure 1).

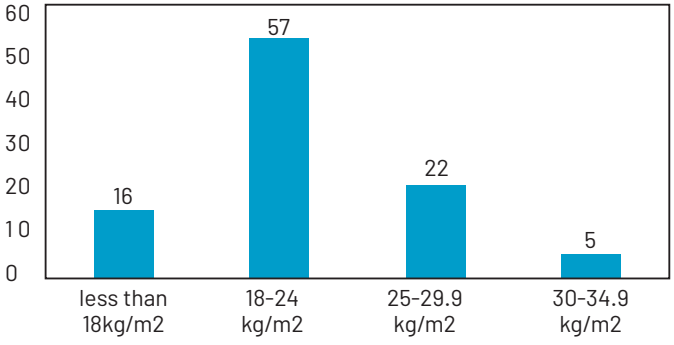

Figure 1: Body Mass Index of Participants

INFLUENCE OF SOCIAL MEDIA		FREQUENCY
Social Sites Preferences	Instagram	34
	Snapchat	9
	WhatsApp	26
	Facebook	8
	Others	5
	All of these	18
Accounts on more than 5 social sites	Yes	48
	No	51

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Satisfaction level while Social Media Usage	3-4	4
	5-6	10
	7-8	45
	9-10	31
Feeling Calm and satisfied	Agree	40
	To Some Extent	50
	Disagree	10
Excess Time Spent on Social Media	Yes	65
	No	35
Anxiousness when not using Social Media	Yes	53
	No	47
Attempt to Quit	Yes	54
	No	46
Checking Social Media before going to bed	Yes	87
	No	13

Table 1: Influence of Social media on Adolescents

According to analysis out of 100 participants,34 was preferring Instagram, 48 individuals have access to more than five social apps. According to Likert scale, 31 participants had 9-10 satisfaction level while using social media.Analysis showed that out of 100 participants 39 are agreed that they feel calm and satisfied while using social media, 64participants were spending more time on social media to get the same satisfaction.According to analysis out of 100 participants 53 felt anxious when not using social media and 54 failed while attempting to quit social media,87 were checking on social media before going to bed(Table 1).

Influence of Social Media on Sleep Pattern		Frequency
Sleep Quality	Poor	19
	Average	42
	Good	21
	Very Good	18
Sleep Hours	2-3 hours	7
	4-5 hours	30
	6-7 hours	34
	8-9 hours	28
Wake up Time	4:00-8:00am	75
	8:00-10:00am	13
	10:00-12:00am	8
	12:00-3:00pm	4
Sleep Time	9:00-11:00pm	8
	11:00-1:00am	48
	1:00-3:00 am	32
	3:00-5:00am	6
	5:00-8:00am	6
Time spent on social media while in bed before sleeping	1-2 hours	50
	2-3 hours	30
	3-4 hours	20
Disturbed sleep quality	Yes	61
	No	39

Table 2: Influence of social media on sleep patterns of Participants

Analysis showed that out of 100 participants only18 were having very good sleep quality, only 28% were sleeping for good 8-9 hours. Out of 100 participants 75 woke up between 4:00 am to 8:00am whereas 48 were sleeping at 11:00 pm to 1:00 pm. According to results 50 participants on an average spent 50 1 to 2 hours on social media while in bed and 61participants agreed that smart phone usage disturbed their sleep quality(Table 2).

Influence of Social Media on Eating Patterns		Frequency
Snacking while Social Network Usage	Yes	64
	No	36
Food Cravings	Yes	41
	Sometimes	46
	No	13
Food control your life	Agree	39
	Slightly Agree	25
	Strongly Agree	28
	Disagree	8
Aware of caloric content	Yes	70
	No	30
Concerned about weight	Never	28
	Sometime	54
	Most of the time	18
Disturbed Eating Pattern	Yes	49
	No	51
Ignore sleep and use social media	Yes	52
	No	48
Change in Weight in recent months	Yes	66
	No	34

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Table 3: Influence of Social media on Eating Pattern of Participants

Analysis showed that out of 100 participants 64 were snacking,41 had food cravingswhile using social mediaand 49 respondents considered thatsmart phone usage was disturbing their eating pattern. According to analysis out of 100 participants 39 were agreed that food control their life, 52 were ignoring their sleep while using social media and 66 noticed changes in weight in recent months(Table 3).

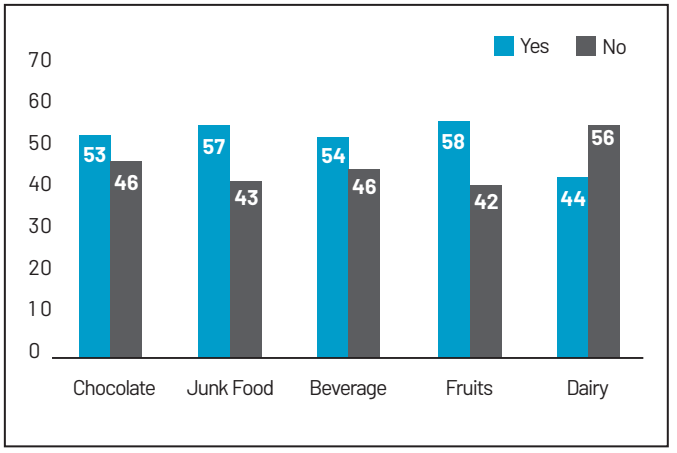

Figure 2: Food Items most preferred while smart phone usage

Analysis showed that out of 100 participants 53 were eating chocolates, 57 were eating junk food 54 were having beverages,58 were eating fruits 44 participants were having dairy while using smart phones(Figure 2).

DISCUSSION:

Results of current study revealed that the prevalence of cell phone use at sleep time is 87% among the students of university which were slightly lower than a study conducts in Saudi Arabia Alshobaili and Alyousafi, 2019 which showed that 98% were utilizing cell phone at sleep time [1]. The results show that people who are overweight and eat more often while using smartphone were 57%, same as a study conducted at University of Lavras by Goncalves *et al.*, 2019 which states that considering about BMI, 46% of men (and 30% women were overweight who overeat while using phone [7]. This analysis supports the theory that smartphone usage is disturbing sleep quality of 61% participants that is higher than Jammu and Kashmir by Nowreen and Ahad, 2018 which states that 62.7% were poor sleepers with disturbed sleep quality [2]. According to results of current study 49% respondent has a bad eating pattern, that possess health risk in contrast to a study conducted on college students in Switzerland by Kartal and Ayhan, 2020 which showed 12.6% of the respondents were in danger of dietary issues due to poor eating habits[8].

CONCLUSION:

More than half of the participants were overweight due to excessive usage of mobile phone and it has association with disturbed sleeping and eating patterns as well.

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