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The pattern of internet use and the incidence of internet addiction in Al-Kindy college medical students

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَقُل رَّبِّ زِدْنِي عِلْمًا

صدق الله العظيم

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Contents:

List of Tables:

Title	Page No.
Table 1: Internet use habit	22
Table 2: Relationship with Internet	25
Table 3: Impact of Internet use on daily life	29
Table 4: Psychological effect of internet use	33
Table 5: Gender and internet use category	36

Abstract

Background: The current global Internet usage provides a striking picture of the extent of the phenomenon. Because the majority of online users have become members of chats, forums, and social networks, the rise and popularity of the Internet is strongly linked to its use in communication and socialization processes. For this, the medium has become an ever-increasing part of many people's day-to-day lives, changing the way to communicate. Internet addiction is generally categorized under the label of "technological addiction" and is defined as a "psychological dependence on the Internet regardless of the type of activity once logged on" .Enough agreement exists on the association between Internet addiction and material and psychological consequences, such as the neglect of academic, work, and domestic responsibilities, disruption of relationships, social isolation, and financial problems . The Internet Addiction Test designed by Kimberly Young is one of the most utilized diagnostic instruments for Internet addiction usage and addiction.

Objectives: to highlight the pattern of internet use and the incidences of internet addiction in Al-Kindy college medical students.

Subjects and Methods: The study is cross sectional study conducted at Al-Kindy College of Medicine -University of Baghdad through the period from November 2022 to April 2023The participants are 200 medical students in Al-Kindy college of medicine. Sampling method randomly selected medical students from different stages in Al-Kindy college of Medicine. Method of data collection was online and face to face. Information was collected on a specially questionnaire designed by Kimberly Young. Data were analyzed by SPSS version 23.

Results: Data analyses were conducted on a sample of 200 students (49%, 98/200 males and 51%, 102/200 females) with a mean age of 20.85 years (18-25) .Results showed 30/200 (15 %) participants with IAT score from 80 to 100 revealing internet addiction suggesting significant problems because of Internet use. , and 137/200 (68.5%) participants with IAT score from 40 to 79, suggesting frequent or moderate Internet use while 33/200(16.5 %) where average or mild internet users.

The results showed that among the 98 male participants, 9 (9.2%) met criteria for addiction, 13 (13.3%) fell into the average category, and 76 (77.6%) fell into the frequent category. Among the 102 female participants, 21 (20.6%) met criteria for addiction, 20 (19.6%) fell into the average category, and 61 (59.8%) fell into the frequent category. addiction were significantly higher in female.

Conclusion: Most of the medical students are shows average (or moderate) internet users pattern. There is a significant association between Internet addiction and gender. It was found that the majority of participants often stayed online longer than they intended. Majority of the participants mentioned that Internet usage occasionally made them neglect their duties and hampered their academic performance or productivity. There is significant association between internet addiction and academic performance of students.

Key words: Internet use , internet addiction , medical students , academic performance.

Introduction

Overview of internet use:

The internet is a remarkable tool for social interactions, information, and entertainment. The internet has enabled countless users to take advantage of its benefits. Today, internet use includes personal, social, clerical, and academic tasks without seeming impossible. One of the most significant privillage of the internet is providing unlimited temporal and regional access to various sources of information for various sects of people. Students across many nations are using the internet excessively, depending on their educational or occupational situation.(1-5)

The high potential of the internet for rapid search for social and mental needs, its limitlessness in terms of time, and its engagement with engaging content are all factors contributing to internet overuse by students, which could lead to internet addiction (6-8).

The Internet is currently a critical component of telecommunications, business, education, and entertainment. It is available worldwide and is used to search for information, online communication, financial transactions, retail sales, sexual services and games, among many other uses. With its growing popularity, overuse soon appeared and thus a new disorder, Internet Addiction (IA) emerged (8).

History of Internet:

The Internet emerged in the United States in the 1970s but did not become visible to the general public until the early 1990s. By 2020, approximately 4.5 billion people, or more than half of the world's population, were estimated to have access to the Internet(9).

Introduction

Internet use among medical students is quite common, as it offers a wealth of information and resources that can be used to aid in their education and training. Some studies have reported that up to 95% of medical students use the internet for educational purposes.

One study conducted in 2020 found that medical students primarily use the internet for searching for medical information (94.4%), followed by communicating with colleagues and instructors (66.9%), and accessing e-books and journals (65.4%). Another study published in 2021 reported that medical students use the internet to prepare for exams (91.1%), to learn about new medical treatments and procedures (90.6%), and to access medical journals (82.2%) (9,10).

Internet addiction

Internet addiction is one of the fast-growing addictive behaviors and is a significant public health problem, affecting a large number of people worldwide. Repeated use of the internet leads to excessive use, usually termed as internet addiction or problematic internet use.

Internet addiction is a psychological dependence on the internet characterized by salience/excessive use, withdrawal, tolerance, negative repercussions/conflict, craving, and mood modification. Young classified it into 5 types:

(1) cybersexual addiction to adult chat rooms or pornography

(2) addiction to online friendships or situations that replace real-life relationships

(3) web compulsion to gamble, auction, or obsessively trade

(4) the compulsive search for information on the web,

(5) addiction to computer games and programming.

Goldberg prefers to replace the term IA with pathological computer use(11-13).Hong et al found a reduction in thickness of the right orbitofrontal cortex in adolescents with Internet addiction. This reflects a common neurobiological mechanism between IA and other addictive disorders.

Effects of Internet addiction

While the internet has been a force for good, excessive consumption of online activity can result in negative side effects. These effects can include physical problems such as weakening of eyesight, backaches and headaches, and social issues such as internet addiction and social anxiety(14).

1.Physical health problems:

Spending prolonged periods of time on the internet can cause various physical health problems such as back pain, headaches, neck pain, carpal tunnel syndrome, and eye strain.

2.Mental health problems:

Internet addiction can lead to mental health issues such as depression, anxiety, stress, and sleep disorders.

3.Social isolation: **People addicted to the internet may neglect their social life and withdraw from real-life relationships, leading to social isolation and loneliness.**

4.Poor academic or professional performance: **Spending excessive time on the internet can impact academic or professional performance by reducing productivity, decreasing motivation, and affecting concentration.**

Prevalence of internet addiction

Human society has experienced some of the most substantial historical changes in the last century. During this period, the society moved from the industrial era to the information age. In the present century, internet connectivity is very much a part of our daily lives. The range of online

activities includes virtually everything from education to commerce. The number of internet users worldwide is more than 4 billion which means that 51% of the world's population uses the internet (17). Of this cohort, students are relatively more likely to use the internet than other groups of people. The use of internet has been rapidly increasing worldwide, and In Iraq, the number of internet users increased from 12500 (0.1% of total population) at 2000 to 14000000 (37.3% of total population) at 2016(18). Approximately 93% of adolescents in the USA have been reported to use the internet and approximately 70% of the adolescent population in Europe surf the internet online for 2–4 h each day (17-19).

Assessment of internet addiction

Griffiths proposed assessing seven specific areas for Internet addiction:

(a) tolerance, (b) spending more time than planned on the Internet,

(c) spending most of their time in activities that allow them to be online,

(d) spending more time online than in social or recreational activities,

(e) continuing use despite work, academic, economic or family concerns,

(f) failed attempts to stop or reduce use of the Internet and (g) withdrawal. According to this author, the diagnosis should be made in the presence of three or more of the areas described (20).

Assessment of internet addiction can be done through various tools and scales, such as the Internet Addiction Test , the Compulsive Internet Use Scale (CIUS), and the Problematic Internet Use Questionnaire (PIUQ). These measures assess the degree of an individual's problematic use of the internet and its impact on their daily life. Some of the common features measured by these tools include preoccupation with the internet, withdrawal symptoms, tolerance, loss of control, and negative consequences.

The Internet Addiction Test (IAT):

is a widely used tool developed by Kimberly Young in 1998. It consists of 20 items that assess an individual's level of internet use and the extent to which it impacts their daily life. The test has good psychometric properties and has been used in various studies to assess internet addiction. It comprises 20 items rated in a five-point Likert scale (from 1 - not at all, to 5 - always).

 it measures the extent of individual's problems due to the Internet use in daily routine, social life, productivity, sleeping patterns, and feelings(20).On the basis of the total score obtained on the test, the individual is placed into one of three categories: average online user (from 20 to 39) who has a full control of his or her usage; experiences frequent problems because of excessive Internet use (from 40 to 69); or has significant problems because of Internet use (from 70 to 100) .

The Compulsive Internet Use Scale (CIUS) was developed by Meerkerk et al. in 2009. It consists of 14 items that assess an individual's level of compulsive internet use and the extent to which it impacts their daily life. The scale has good psychometric properties and has been used in various studies to assess internet addiction.

The Problematic Internet Use Questionnaire (PIUQ) was developed by Demetrovics et al. in 2008. It consists of 18 items that assess an individual's level of problematic internet use and the extent to which it impacts their daily life. The scale has good psychometric properties and has been used in various studies to assess internet addiction.

These tools are helpful in identifying individuals who may be at risk of developing internet addiction and can be used in clinical and research settings to assess the prevalence and impact of this condition(20-23).

Internet addiction among medical student

Some studies have highlighted the importance of studying internet addiction among university students because students are more vulnerable to internet addiction than the general population(24).According to some studies, medical students are approximately five times more likely to be addicted to the internet than the general public (25). Social media addiction has both positive and negative effects on academic, social, and health outcomes. Although some studies showed a negative and significant relationship between internet addiction and academic performance(25-30) a study found no significant association between internet addiction and academic performance(31). Studies have shown that excessive internet usage may interfere with students' ability to complete homework assignments, study, and get enough sleep to meet their academic responsibilities (32). Virtual education as a result of the COVID-19 pandemic led to the excessive use of the internet by students for a variety of reasons.

There have been several studies to measure the prevalence of internet overuse among medical students and its effects on their academic performance and general health. In Nepal, a questionnaire-based study was conducted by Young et al. among 130 medical students to assess the degree of internet addiction. This study discovered that 40% of these medical students were mildly addicted while 41.5% and 3.07% of the students were moderately and severely addicted to the internet, respectively33. Similarly, in northern India, a cross-sectional study discovered that 44.8% of medical students were at risk of internet addiction(34). Internet usage can vary according to the purpose for which it is being used. This, in turn, can affect the academic performance of students. For instance, a study involving Korean students showed that the effects of internet use on academic performance differ with respect to the purpose of use. Thus, students who use the internet for study purposes had high academic performances while those who used it for general purposes had a relatively poorer academic performance (35). Overuse of internet can also adversely affect the quality of life among students. For instance, an internet addiction study conducted in Tehran university of Medical Sciences found that the mean quality of life of medical students was lower in physical, psychological, and social-relationship subdomains while there was no significant difference in the environmental domain(36).The quality of life of these students will affect their future performance as doctors which, in turn, might have adverse consequences for their patients. Moreover, medical sciences is perceived to be a stressful and demanding field of study, internet addiction could be one of the ways that the students try to cope with the psychological pressures. The results of this study can help us better understand if this is true. Consequently, policies can be developed that help alleviates the stressful condition of medical students in a way that does not affect their performance.

Aim of the Study:

The aim of this study is to:

- **Highlight the internet use pattern and internet addiction in the students in Al-kindy college of Medicine using the internet addiction test.**

Subjects and Methods:

The study is cross sectional study conducted at Al-Kindy College of Medicine -University of Baghdad through the period from November 2022 to April 2023. The participants are 200 medical students (102 female and 98 male) in Al-Kindy college of medicine.

randomly selected medical students from different stages in Al-Kindy college of Medicine. Method of data collection was online and face to face. Information was collected on a specially questionnaire designed by Kimberly Young(20).

The research team send specific self-completed online questionnaire through Google Forms. The data collected by sharing The link of questionnaire to the students through social media groups of medical students.

The Internet Addiction Test (IAT): is a widely used tool developed by Kimberly Young in 1998. It consists of 20 items that assess an individual's level of internet use and the extent to which it impacts their daily life. It comprises 20 items rated in a five-point Likert scale (from 1 - not at all, to 5 - always). On the basis of the total score obtained on the test, the individual is placed into one of three categories:

- Average online user (from 20 to 39) who has a full control of his or her usage.

- Frequent problems because of excessive Internet use (from 40 to 69)

- Addicted to Internet use (from 70 to 100).

This questionnaire consists of 20 statements. After reading each statement carefully, based upon the 5-point Likert scale, the participant selects the response (0, 1, 2, 3, 4 or 5). If two choices seem to apply equally well, circle the choice that best represents how he is most of them during the past month

0 = Not Applicable or never

1 = Rarely around 10%

2 = Occasionally around 25%

3 = Frequently around 50 %

4 = Often around 70%

5 = Always around 90 %

Questions:

1. How often do you find that you stay online longer than you intended?

2. How often do you neglect household chores to spend more time online?

3. How often do you prefer the excitement of the Internet to intimacy with your partner?

4. How often do you form new relationships with fellow online users?

5. How often do others in your life complain to you about the amount of time you spend online?

6. How often do your grades or school work suffer because of the amount of time you spend online?

7. How often do you check your email before something else that you need to do? 8. How often does your job performance or productivity suffer because of the Internet?

9. How often do you become defensive or secretive when anyone asks you what you do online?

10. How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?

11. How often do you find yourself anticipating when you will go online again?

12. How often do you fear that life without the Internet would be boring, empty, and joyless?

13. How often do you snap, yell, or act annoyed if someone bothers you while you are online?

14. How often do you lose sleep due to being online?

15. How often do you feel preoccupied with the Internet when off-line, or fantasize about being online? 16. How often do you find yourself saying "just a few more minutes" when online?

17. How often do you try to cut down the amount of time you spend online and fail?

18. How often do you try to hide how long you've been online?

19. How often do you choose to spend more time online over going out with others?

20. How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back online?

Scoring :

Summative scores ranging from 20 to 49 are considered ''average'' online users. Scores ranging from 50 to 79 are considered to be Internet users experiencing occasional to frequent problems due to the Internet. Scores ranging from 80 to 100 are considered to be users suffering from significant problems due to their Internet usage.

Statistical Analysis:

We used Microsoft Excel to make spreadsheets, tables, graphs, and figures. we used SPSS statistics 26 to perform data analysis. For categorical variables, we used Chi square. The pie and bar charts is also used to visualize the results.

Results:

 A total of 200 participants completed the study, including 98 (49%) male and 102 (51%) female participants.

The gender distribution of participants was relatively even, with slightly more female participants than male participants.

The majority of participants (68.5%) fell into the frequent internet use category, while a smaller percentage (15%) fell into the addiction category, and a similar percentage (16.5%) fell into the average category. These findings suggest that a significant proportion of medical students may have problematic internet use patterns, with a notable proportion meeting criteria for addiction.

Table 1: Classification of Gender and internet use category

Questions	Answers	Frequency	Percentage
Gender	Male	98	49%
	Female	102	51%
	Total	200	100%
Internet use category	Addiction	30	15%
	Average	33	16.5%
	Frequent	137	68.5%
	Total	200	100%

Table 2: internet use habit

Questions	Answers	Frequency	Percentage
Q1/ How often do you find that you stay on-line longer than you intended?	Rarely	21	10.5%
	Occasionally	31	15.5%
	Frequently	34	17%
	Often	72	36%
	Always	42	21%
	Total	200	100%
Q2/ how often do you neglect household chores to spend more time online?	Rarely	58	29%
	Occasionally	66	33%
	Frequently	16	8%
	Often	36	18%
	Always	24	12%
	Total	200	100%
Q3/ How often do you check your email before something else that you need to do?	Rarely	30	15%
	Occasionally	44	22%
	Frequently	29	14.5%
	Often	55	27.5%
	Always	42	21%
	Total	200	100%
Q4/ how often does your job performance or productivity suffer because of the Internet?	Rarely	22	11%
	Occasionally	33	16.5%
	Frequently	37	18.5%
	Often	65	32.5%
	Always	43	21.5%
	Total	200	100%

Question 1: A total of 200 medical students participated in the study. When asked the question (how often do you find you stay online longer than you intended?) , 21 (10.5%) reported rarely staying online longer than intended, 31 (15.5%) reported occasionally, 34 (17%) reported frequently, 72 (36%) reported often, and 42 (21%) reported always staying online longer than intended.These findings suggest a high prevalence of problematic internet use among medical students.These results also showed in figure 1.

How often do you find that you stay on-line longer than you intended?
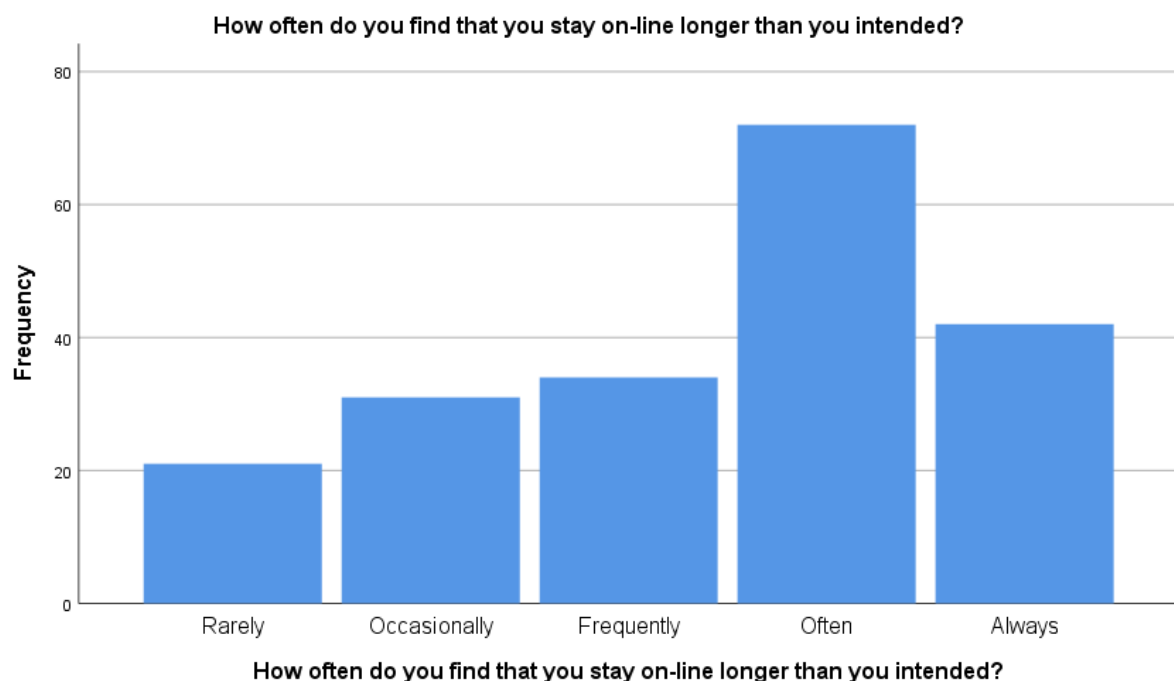
Figure 1: how often do you find that you stay online longer than you intended.

Question 2: When asked about (neglecting household chores to spend more time online?), 58 (29%) reported rarely doing so, 66 (33%) reported occasionally, 16 (8%) reported frequently, 36 (18%) reported often, and 24 (12%) reported always neglecting household chores to spend more time online.

These findings suggest that a significant number of medical students may be experiencing difficulties balancing their online activities with their daily responsibilities. Such behaviours may have negative consequences on their overall well-being and academic performance. These results also showed in figure 2.
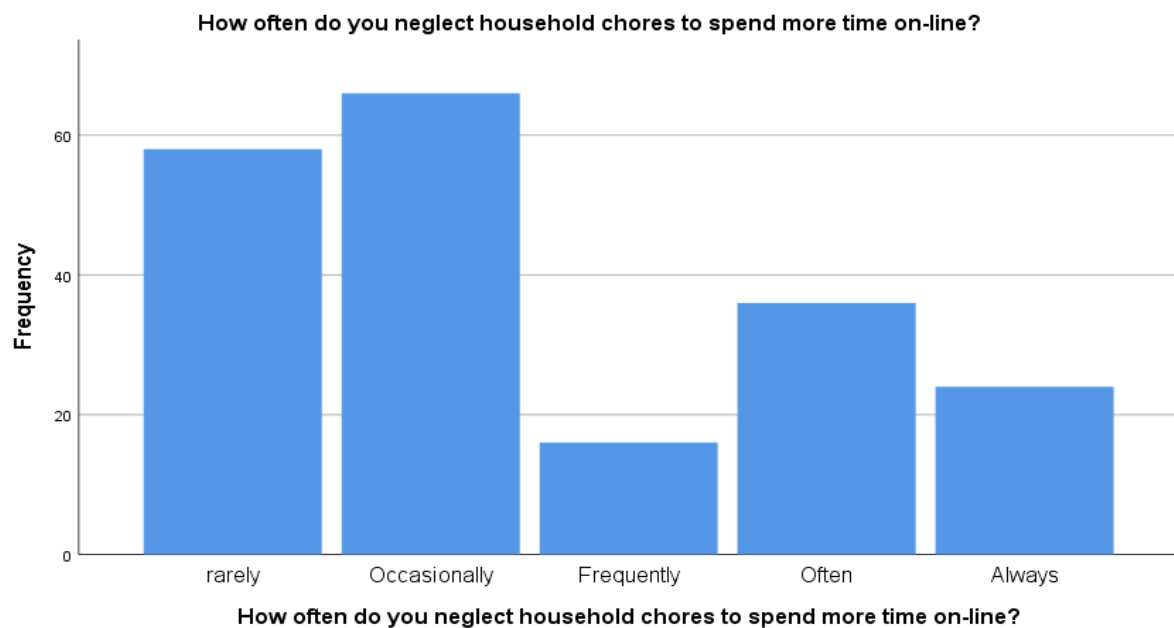

How often do you neglect household chores to spend more time on-line?

Figure 2: how often that you neglect household chores to spend more time online?

Question 3: When asked about their email checking behaviour, 30 (15%) reported rarely checking their email before something else they need to do, 44 (22%) reported occasionally, 29 (14.5%) reported frequently, 55 (27.5%)

reported often, and 42 (21%) reported always checking their email before

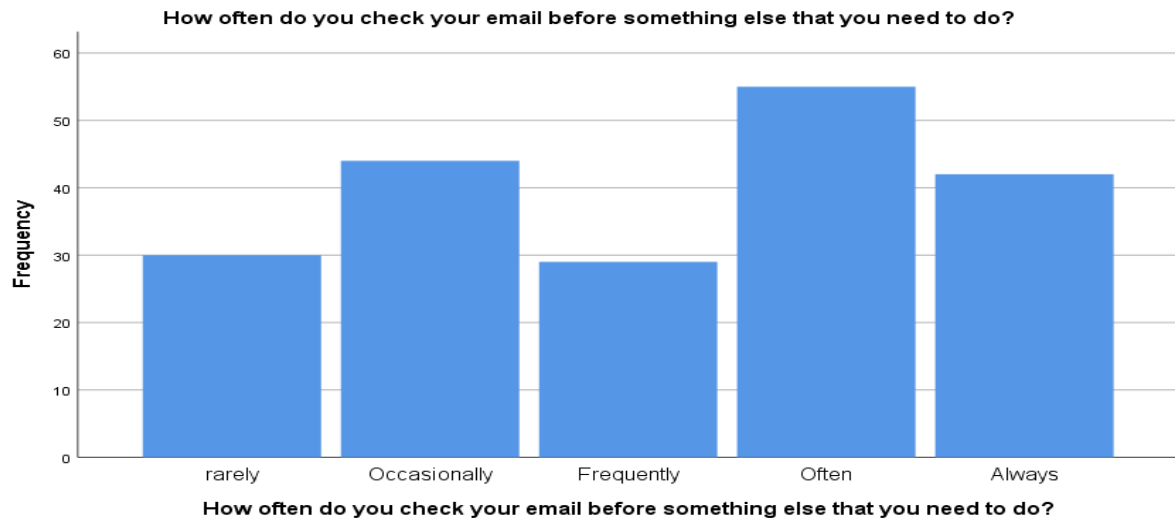How often do you check your email before something else that you need to do?

Figure 3: how often do you check your email before something else you need to do?

something else they need to do. These results also showed in figure 3.

Question 4: When asked about the impact of internet use on their job performance or productivity, 22 (11%) reported rarely experiencing negative effects, 33 (16.5%) reported occasionally, 37 (18.5%) reported frequently, 65 (32.5%) reported often, and 43 (21.5%) reported always experiencing negative
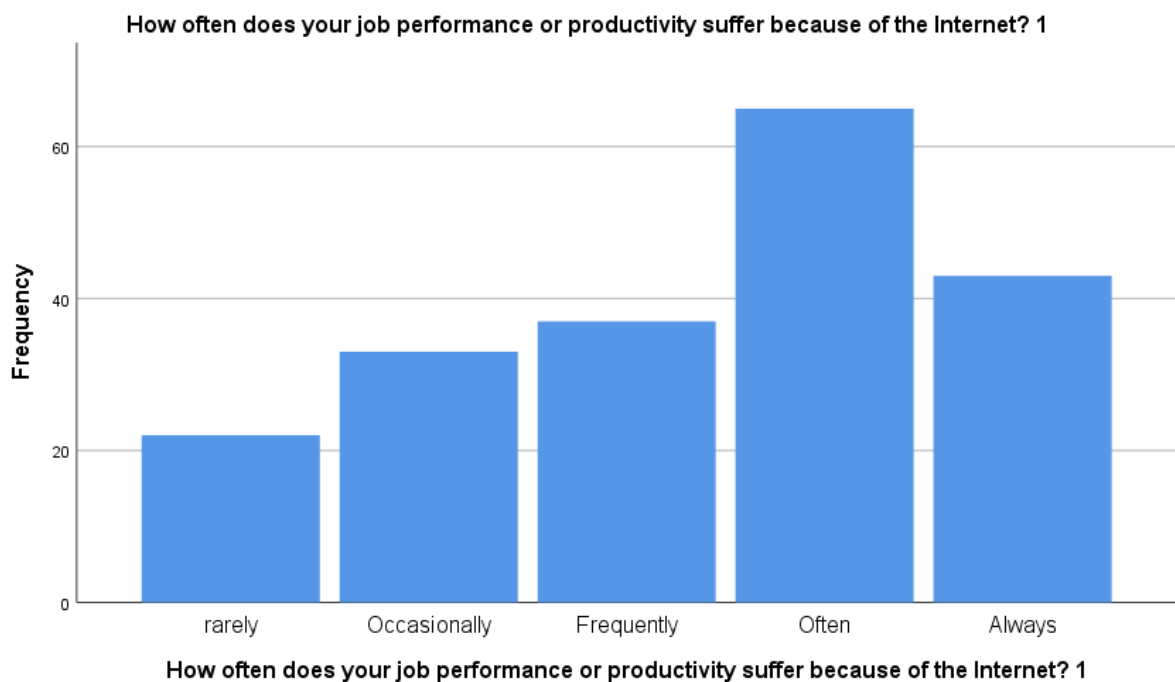
How often does your job performance or productivity suffer because of the Internet? 1

How often does your job performance or productivity suffer because of the Internet? 1

Table 3: relationship with Internet

Questions	Answers	Frequency	Percentage
Q5/ How often do others in your life complain to you about the amount of time you spend online ?	Rarely	20	10%
	Occasionally	29	14.5%
	Frequently	33	16%
	Often	70	35%
	Always	48	24%
	Total	200	100%
Q6/ How often do you become defensive or secretive when anyone asks you what you do online?	Rarely	42	21%
	Occasionally	62	31%
	Frequently	24	12%
	Often	38	19%
	Always	34	17%
	Total	200	100%
Q7/ How often do you fear that life without the Internet would be boring, empty, and joyless?	Rarely	18	9%
	Occasionally	28	14%
	Frequently	28	14%
	Often	72	36%
	Always	54	27%
	Total	200	100%
Q8/ How often do you prefer the excitement of the Internet to intimacy with your family?	Rarely	20	10%
	Occasionally	31	15.5%
	Frequently	47	23.5%
	Often	68	34.0%
	Always	34	17%
	Total	200	100%
	Rarely	40	20%

Q9/ How often do you snap, yell, or act annoyed if someone bothers you while you are on-line?	Occasionally	42	21%
	Frequently	14	7%
	Often	66	33%
	Always	38	19%
	Total	200	100%

Question 5: A total of 200 medical students participated in the study. When asked

Figure 5: how often does others in your life complain to you about the amount of time you spend online?

about the complaints they receive from others regarding their online behavior, 20 (10%) reported rarely receiving complaints, 29 (14.5%) reported occasionally, 33 (16.5%) reported frequently, 70 (35%) reported often, and 48 (24%) reported always receiving complaints.These results also showed in figure 5.

Question 6: When asked about their defensiveness or secrecy regarding their online behavior, 42 (21%) reported rarely becoming defensive or secretive, 62 (31%) reported occasionally, 24 (12%) reported frequently, 38 (19%) reported

often, and 34 (17%) reported always becoming defensive or secretive when asked about their online behavior.These results also showed in figure 6.
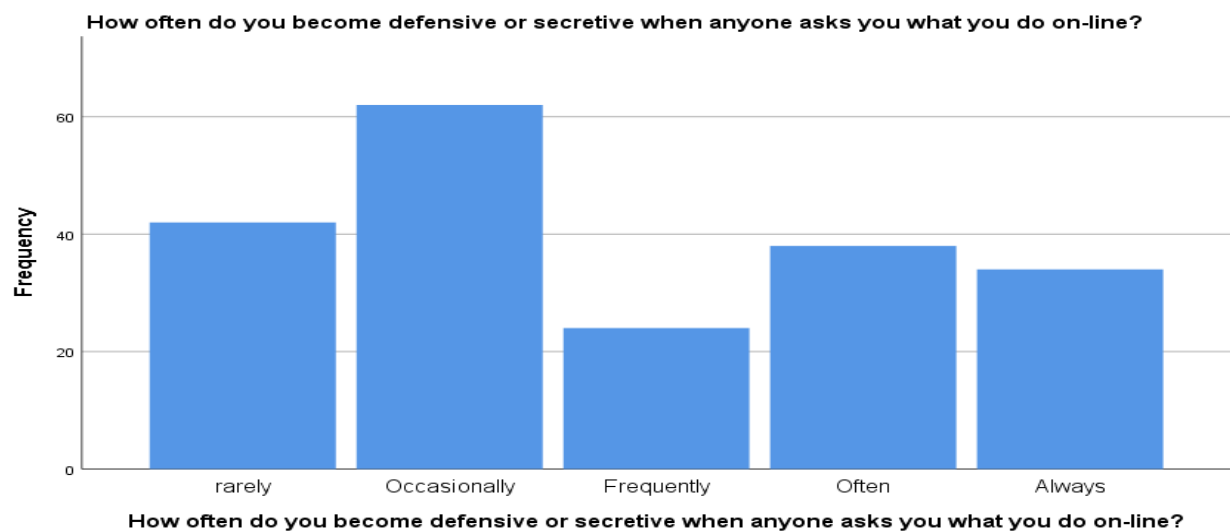

Figure 6: how often do you become defensive or secretive with anyone asks you what you do online?

Question 7: When asked about their feelings regarding life without the internet, 18 (9%) reported rarely fearing that life without the internet would be boring, empty, and joyless, 28 (14%) reported occasionally, 28 (14%) reported frequently, 72 (36%) reported often, and 54 (27%) reported always fearing that life without the internet would be boring, empty, and joyless.These results also showed in figure 7.

How often do you fear that life without the Internet would be boring, empty, and joyless?
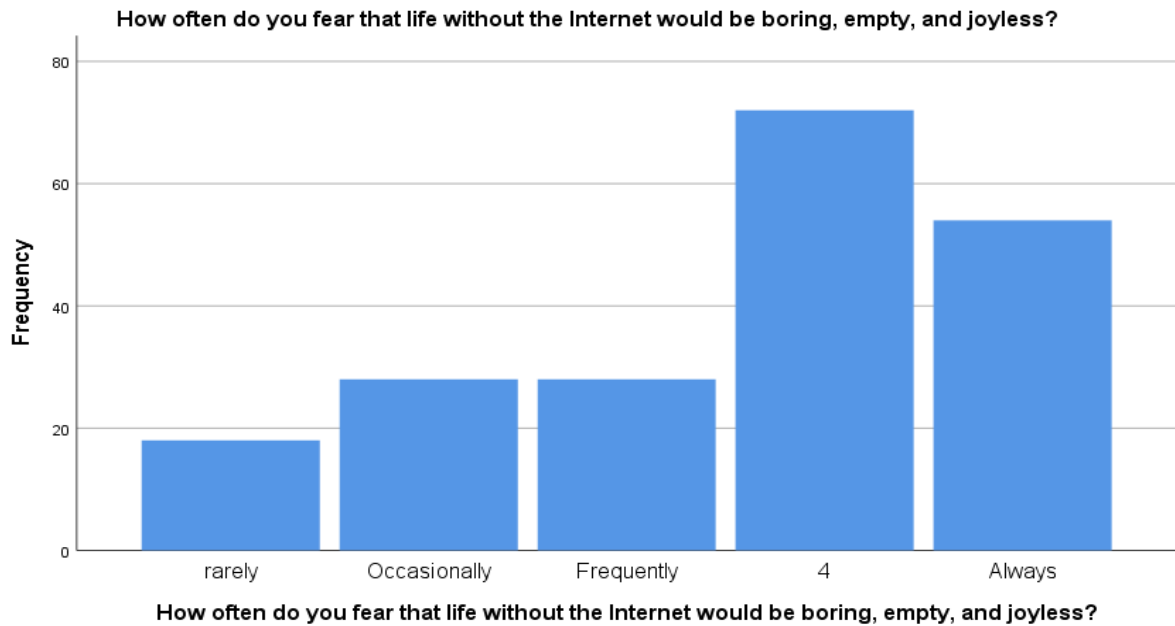
Question 8: When asked about their preference between the excitement of the

Figure 7: how often do you fear that life without the Internet would be boring, empty and joyless?

internet and intimacy with their family, 20 (10%) reported rarely preferring the excitement of the internet to intimacy with their family, 31 (16%) reported occasionally, 47 (24%) reported frequently, 68 (34%) reported often, and 34 (17%) reported always preferring the excitement of the internet to intimacy with their family.These results also shown in figure 8
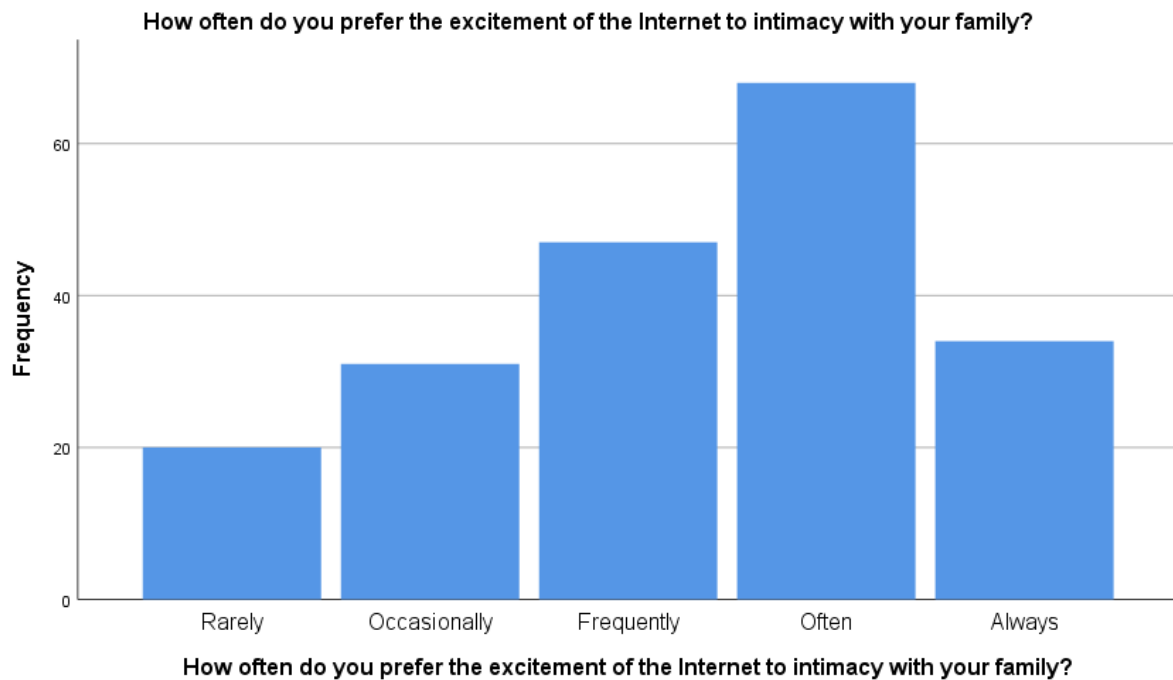
How often do you prefer the excitement of the Internet to intimacy with your family?

Figure 8: how often do you prefer the excitement of the Internet to intimacy with your family?

Question 9: When asked about their behavior when interrupted while online, 40 (20%) reported rarely snapping, yelling, or acting annoyed, 42 (21%) reported occasionally, 14 (7%) reported frequently, 66 (33%) reported often, and 38 (19%) reported always snapping, yelling, or acting annoyed.These results also showed in figure 9.
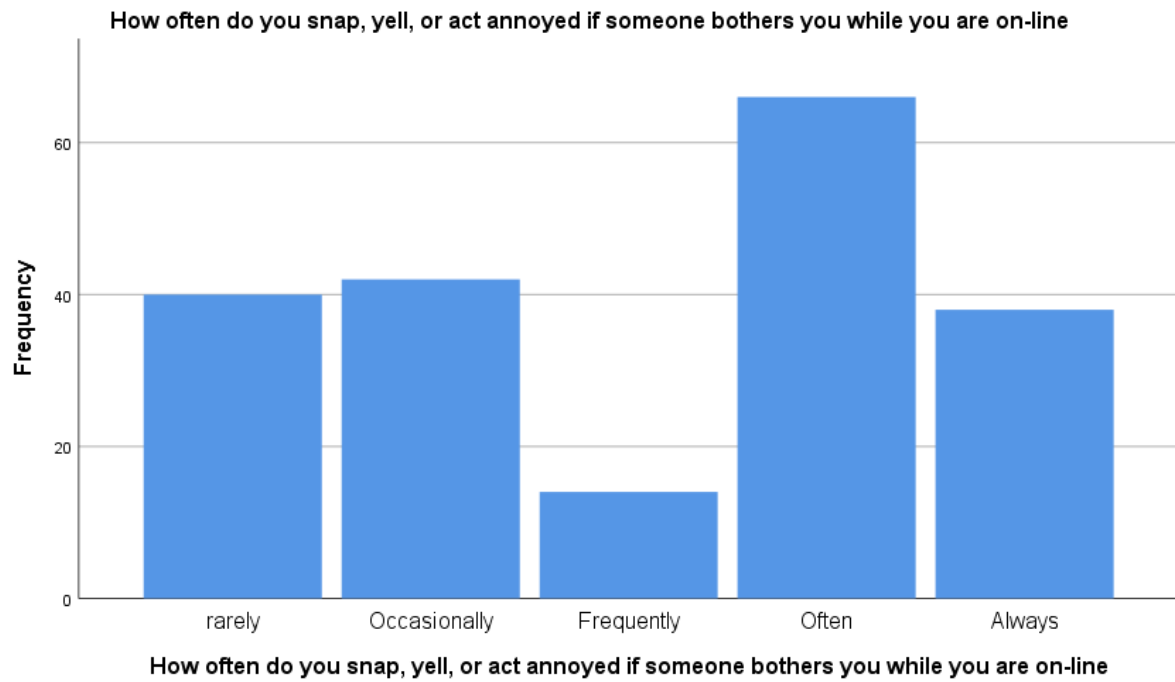
How often do you snap, yell, or act annoyed if someone bothers you while you are on-line

How often do you snap, yell, or act annoyed if someone bothers you while you are on-line

Figure 9: how often do you snap you or act annoyed if someone bothering you while you are online?

Table 4: Impact of internet use on daily life

Questions	Answers	Frequency	Percentage
Q10/ How often do you neglect your duties to spend more time on-line?	Rarely	58	29%
	Occasionally	66	33%
	Frequently	16	8%
	Often	36	18%
	Always	24	12%
	Total	200	100%
Q11/ How often do your grades suffer because of the amount of time you spend online?	Rarely	20	10%
	Occasionally	32	16%
	Frequently	36	18%
	Often	67	33.5%
	Always	45	22.5%
	Total	200	100%
Q12/ How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?	Rarely	40	20%
	Occasionally	42	21%
	Frequently	14	7%
	Often	66	33%
	Always	38	19%
	Total	200	100%
Q13/ How often do you lose sleep due to being online?	Rarely	19	9.5%
	Occasionally	30	15%
	Frequently	58	29%
	Often	64	32%
	Always	29	14.5%
	Total	200	100%
	Rarely	22	11%

	Occasionally	31	15.5%
Q14/ How often do you try to cut down the amount of time you spend online and fail?	Frequently	34	17%
	Often	71	35.5%
	Always	42	21%
	Total	200	100%
	Rarely	28	14%
Q15/ How often do you choose to spend more time online over going out with others?	Occasionally	26	13%
	Frequently	38	19%
	Often	66	33%
	Always	42	21%
	Total	200	100%

Question 10: Out of the total participants, 58 (29%) reported neglecting their duties to spend more time online rarely, 66 (33%) reported occasionally, 16 (8%) reported frequently, 36 (18%) reported often, and 24 (12%) reported always.
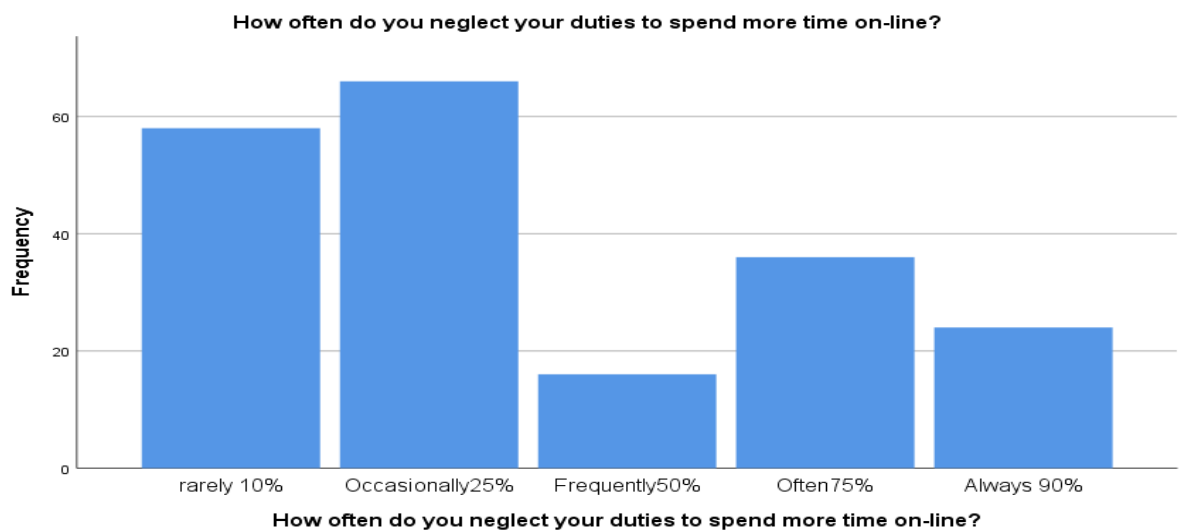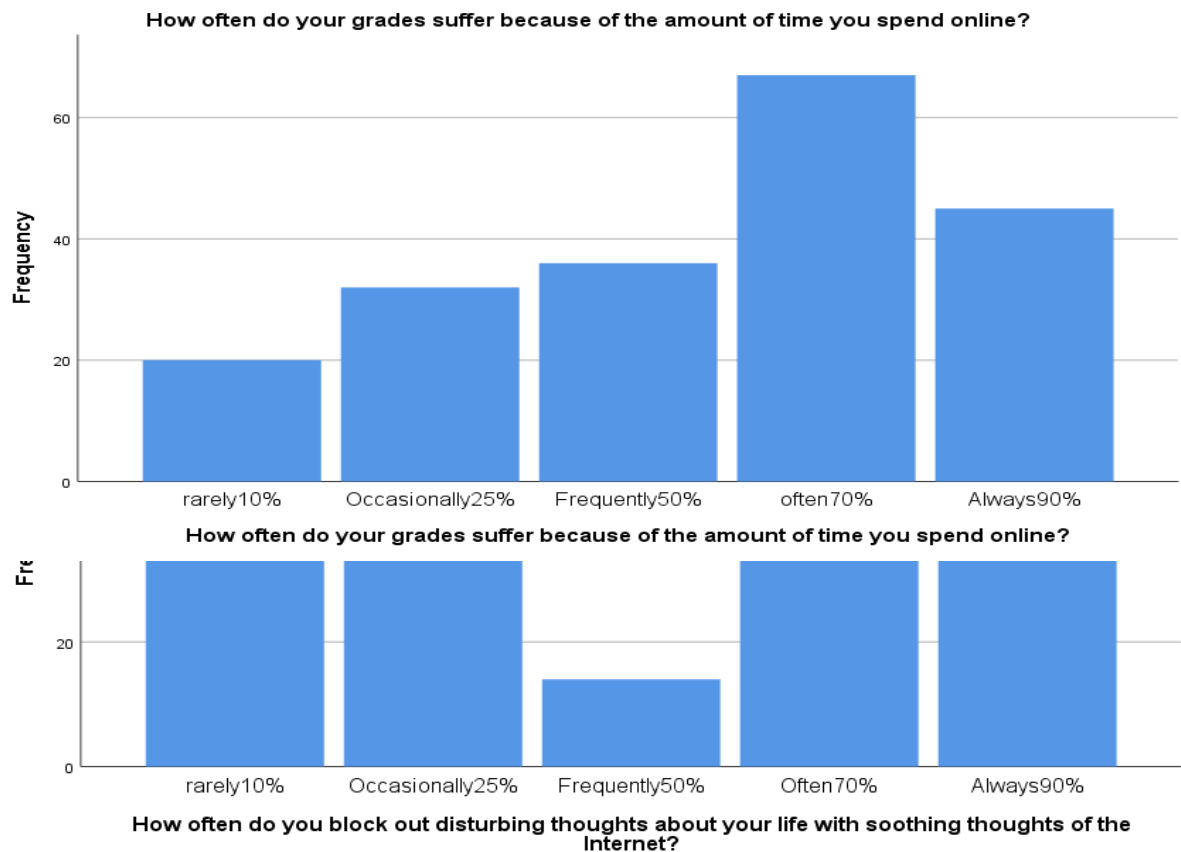

Figure 10: how often do you neglect your duties to spend more time online?

Question 11: Out of the total participants, 20 (10%) reported their grades suffering rarely, 32 (16%) reported occasionally, 36 (18%) reported frequently, 67 (33.5%) reported often, and 45 (22.5%) reported

always.

Figure ?

Figure 12: how often do you block out disrupting thoughts about your life, with soothing thoughts of the Internet?

Question 12: Out of the total participants, 40 (12.5%) reported rarely blocking out disruptive thoughts with the internet, 42 (13.2%) reported occasionally, 14 (4.4%) reported frequently, 66 (20.7%) reported often, and 38 (11.9%) reported always.

Question 13: Out of the total participants, 19 (9.5%) reported rarely losing sleep due to being online, 30 (15%) reported occasionally, 58 (29%) reported frequently, 64 (32%) reported often, and 29 (14.5%) reported always.
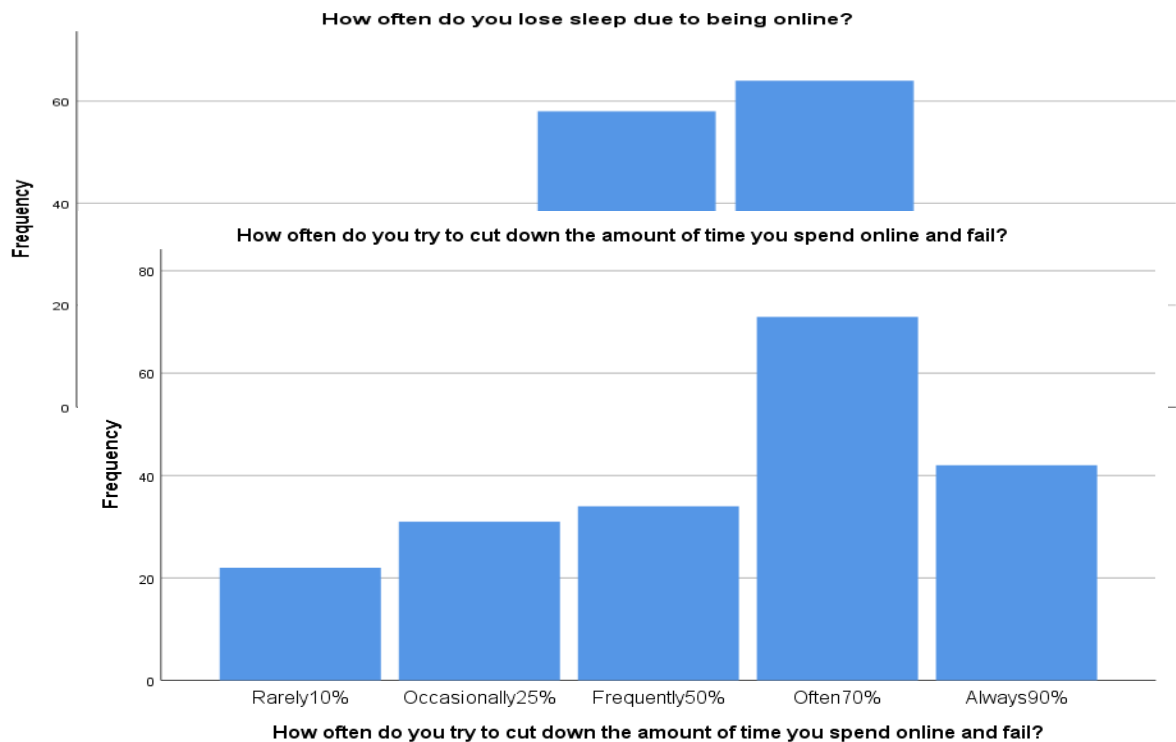
Question 14: Out of the total participants, 22 (11%) reported rarely trying and failing to cut down their online time, 31 (15.5%) reported occasionally, 34 (17%) reported frequently, 71 (35.5%) reported often, and 42 (21%) reported always.

Figure 13: how often do you lose sleep due to being online?

Question 15: Out of the total participants, 28 (14%) reported rarely choosing to spend more time online over going out with others, 26 (13%) reported occasionally, 38 (19%) reported frequently, 66 (33%) reported often, and 42

Figure 15: how often do you choose to spend more time online over going out with others?

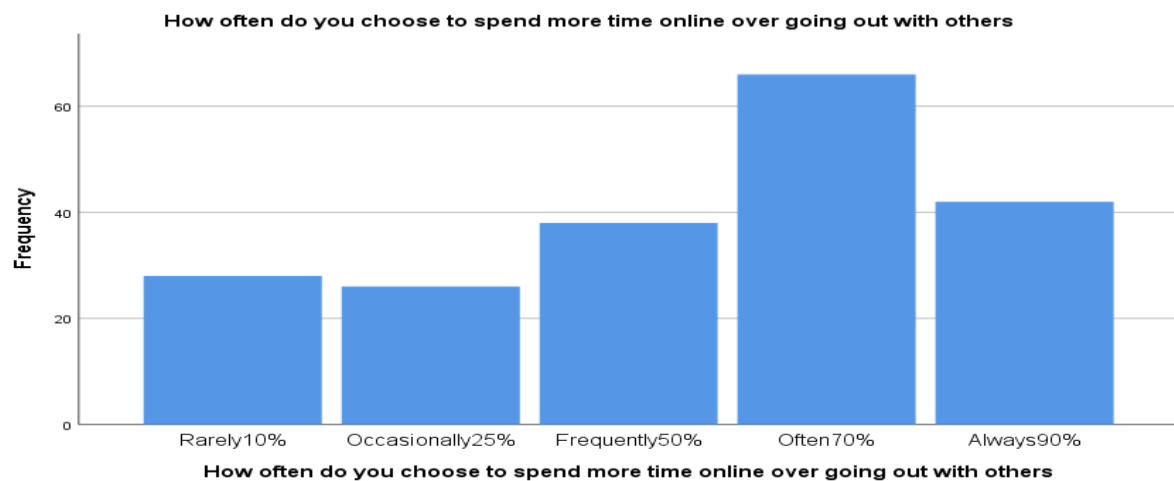(21%)   reported   always.

How often do you choose to spend more time online over going out with others

Table 5: psychological effect of Internet use

Questions	Answers	Frequency	Percentage
Q16/ How often do you form new relationships with fellow online users?	Rarely	18	9%
	Occasionally	29	14.5%
	Frequently	45	22.5%
	Often	69	34.5%
	Always	39	19.5%
	Total	200	100%
Q17/ How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back online?	Rarely	28	14%
	Occasionally	45	22.5%
	Frequently	24	12%
	Often	59	29.5%
	Always	44	22%
	Total	200	100%
Q18/ How often do you feel preoccupied with the Internet	Rarely	21	10.5%
	Occasionally	30	15%
	Frequently	35	17.5%

when off-line, or fantasize about being online?	Often	72	36%
	Always	42	21%
	Total	200	100%
Q19/ How often do you find yourself saying "just a few more minutes" when online?	Rarely	19	9.5%
	Occasionally	36	18%
	Frequently	22	11%
	Often	72	36%
	Always	51	25.5%
	Total	200	100%
Q20/ How often do you try to hide how long you've been online?	Rarely	29	14.5%
	Occasionally	26	13%
	Frequently	34	17%
	Often	70	35%
	Always	41	20.5%
	Total	200	100%

Question 16: Out of the total participants, 18 (9%) reported rarely forming relationships with fellow online users, 29 (14.5%) reported occasionally, 45
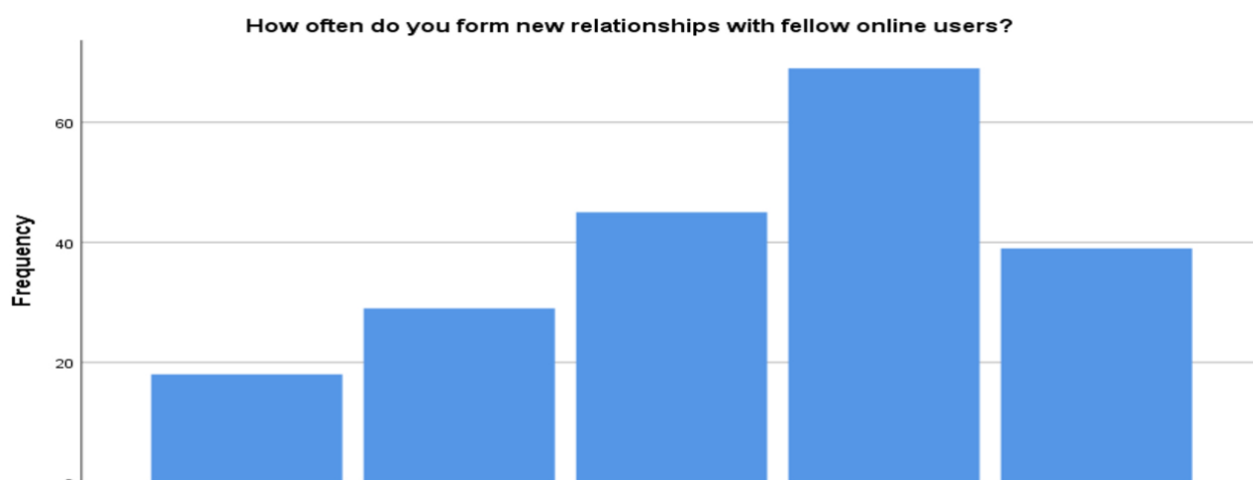

Figure 16: how often do you form a new relationships with flew online users?

(22.5%) reported frequently, 69 (34.5%) reported often, and 39 (19.5%) reported always.

Question 17: Out of the total participants, 28 (14%) reported rarely feeling depressed, moody or nervous when offline, 45 (22.5%) reported occasionally, 24 (12%) reported frequently, 59 (29.5%) reported often, and 44 (22%) reported
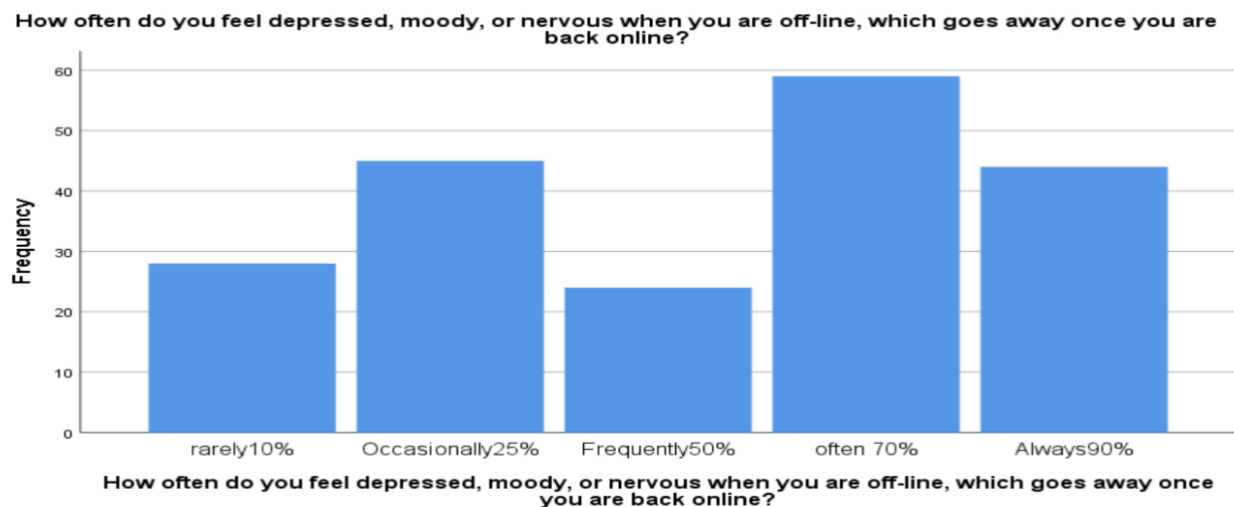

Figure 17: how often do you feel depressed, moody or nervous when you're off-line which goes away when you're back online

always.

Question 18: Out of the total participants, 21 (10.5%) reported rarely feeling preoccupied or fantasizing about being online, 30 (15%) reported occasionally, 35 (17.5%) reported frequently, 72 (36%) reported often, and 42 (21%) reported always.
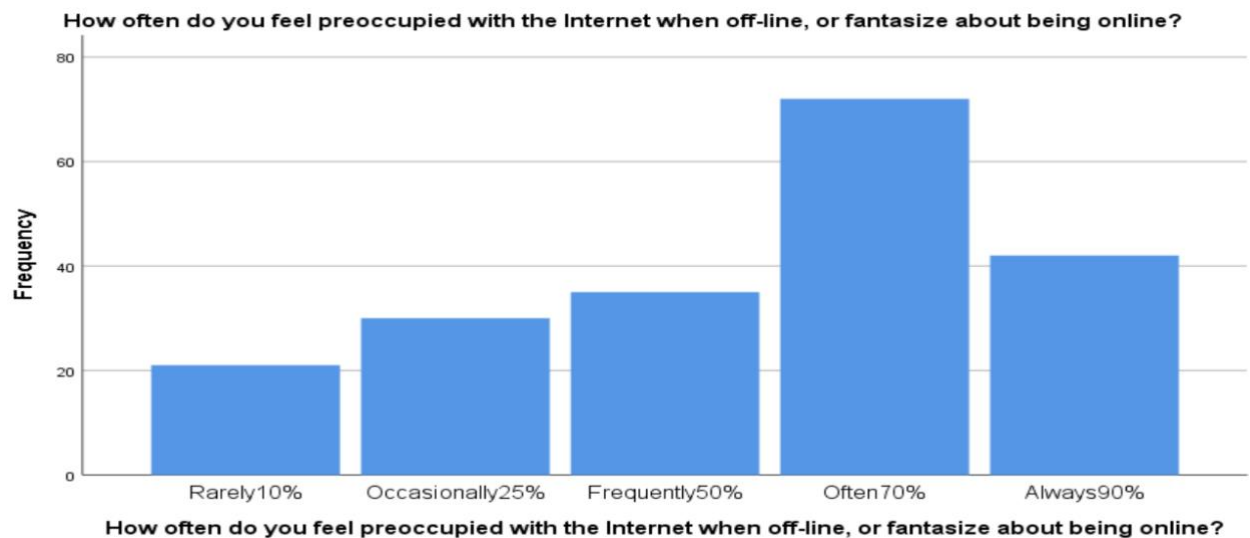

Figure18: how often do you feel preoccupied with the Internet when off-line or fantasise about being online?

Question 19: Out of the total participants, 19 (9.5%) reported rarely saying just a few more minutes online, 36 (18%) reported occasionally, 22 (11%) reported frequently, 72 (36%) reported often, and 51 (25.5%) reported always.
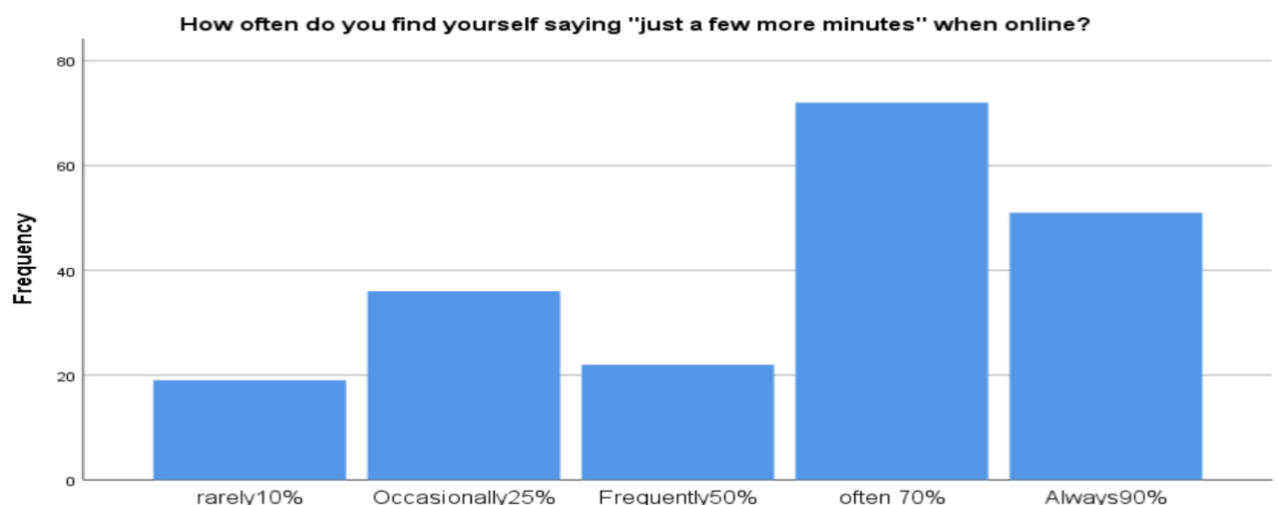

Figure 19: how often do you find yourself saying just a few more minutes with online?

Question 20: Out of the total participants, 29 (14.5%) reported rarely trying to hide their online time, 26 (13%) reported occasionally, 34 (17%) reported frequently, 70 (25%) reported often, and 41 (20.5%) reported always.
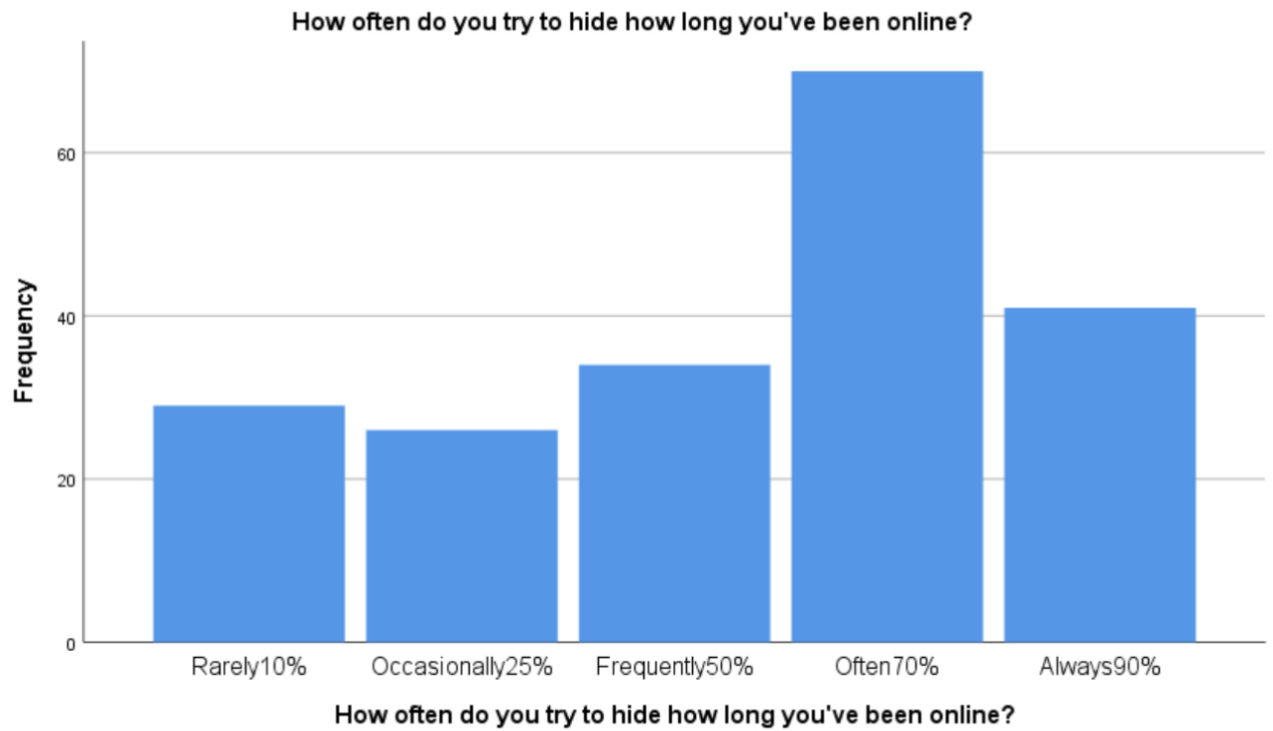

Figure 20: how often do you try to hide how long you have been online?

Table 6: Gender and internet use category

		Internet use category				P-value
		Addiction	Average	Frequent	Total	
Gender	Male	9	13	76	98	0.020
	Female	21	20	61	102	
	Total	30	33	137	200	

A total of 200 participants completed the study, including 98 (49%) male and 102 (51%) female participants.

The gender distribution of participants was relatively even, with slightly more female participants than male participants.

The majority of participants (68.5%) fell into the frequent internet use category, while a smaller percentage (15%) fell into the addiction category, and a similar percentage (16.5%) fell into the average category. These findings suggest that a significant proportion of medical students may have problematic internet use patterns, with a notable proportion meeting criteria for addiction.

A **cross-tabulation** was performed to explore the relationship between gender and internet use category. The results showed that among the 98 male participants, 9 (9.2%) met criteria for addiction, 13 (13.3%) fell into the average category, and 76 (77.6%) fell into the frequent category. Among the 102 female participants, 21 (20.6%) met criteria for addiction, 20 (19.6%) fell into the average category, and 61 (59.8%) fell into the frequent category.

A chi-square test was conducted to determine if there was a significant association between gender and internet use category. The results revealed a statistically significant association (p-value = 0.020), suggesting a significant association between Internet addiction and gender.

Discussion

The present study aims to assess the prevalence of internet addiction among medical student in AL-kindy medical college and its effect on their mental and behavioral health .

There were 200 participants(49% male and 51% female).most of student are in the 18-25 age group. A sum total of 20 different internet addiction questionnaires have been identified in this review.

the prevalence of internet addiction was 15%, in contract to studies in the USA reported that 5-12% of university students in different colleges suffered from Internet addiction in [57]

In Asia, the prevalence was 3.7% in India [58] and increased to 37% in Iraq and Malaysia[59]. In African countries, the range of prevalence was found from 5.1% in Mauritius and reach to 16.8% in Kenya [60].

1. internet use habit:

In this study found a high rate of medical student stay online longer than they intended which is consistent with other stuies, a study by [38] found that 21% of university students reported problematic internet use, with symptoms such as preoccupation with the internet, withdrawal symptoms, and difficulty controlling use. Another study by [39] found that 60% of university students in Hong Kong reported problematic internet use, with similar symptoms as reported in the study by [38]

In this study also found 60.6% of medical student neglect household chores to spend more time online which is consistent with other study, a study by [40] examined the relationship between internet addiction and personal and social responsibilities among university students in Hong Kong. The authors found that students who reported higher levels of internet addiction were more likely to report neglecting their personal and social responsibilities.

In this study showed that a majority of medical students frequently or often check their email before other tasks. This finding is consistent with a study conducted by [41] which examined the pattern of internet and mobile phone use among medical students in Iran. The study found that 86% of medical students reported checking their email frequently or very frequently.

In this study results found a significant number of medical students report that their job performance or productivity suffers due to internet use. In comparison to another study, the findings are consistent with a study by,[42] who found that internet multitasking negatively impacted academic performance. The study surveyed 219 undergraduate students and found that those who frequently used the internet while studying had lower GPAs (GPA stands for Grade Point Average, which is a numerical representation of a student's academic performance in a particular course or over a specific period of time) than those who did not.

2. Relationship with internet:

Based on this results we found a relatively high percentage of medical students reported that others in their lives frequently or often complain about the amount of time they spend online. This finding suggests that internet use among medical students may be a topic of concern for those around them.

In this study is consistent with a study by [43] investigated the link between problematic internet use and social relationships among adults in the United Kingdom. The authors found that individuals who reported higher levels of problematic internet use also reported lower levels of satisfaction with their social relationships and higher levels of loneliness.

We found a significant number of medical students become defensive or secretive when asked about their online activity which is consistent with

other study, a study published in the Journal of Medical Internet Research [44], which investigated the internet use patterns and associated psychological outcomes among medical students. The study found that many medical students reported feeling guilt, shame, or embarrassment about their internet use and were hesitant to disclose their online activities to others, including their peers and faculty members. This behavior was attributed to the stigmatization of certain online activities, such as social media use, by the medical community.

A large proportion of medical students (72% frequently, 54% often) fear that life without the internet would be boring, empty, and joyless. This is consistent with findings from other studies that have investigated the impact of the internet on individuals' lives, a study by [45] found that heavy internet users reported higher levels of depression, loneliness, and stress, as well as lower levels of life satisfaction and self-esteem.

3. Impact of internet use on daily life:
Based on this results we found a significant proportion of medical students may be at risk of neglecting their duties due to excessive internet use. This finding is consistent with the results of previous research study on internet use among medical students.
A study by [46] reported that 33.7% of medical students spent more than 3 hours per day on the internet, and that internet addiction was associated with lower academic performance.

In this results showed that a significant proportion of medical students report that their grades suffer due to their internet usage. Also the study by [46] reported that 33.7% of medical students spent more than 3 hours per

day on the internet, and that internet addiction was associated with lower academic performance.

The results appears that a significant number of medical students use the internet frequently or often as a means of blocking out disturbing thoughts about their lives. This finding is consistent with previous research that has explored the relationship between internet use and mental health.

A study published in the Journal of Medical Internet Research in 2018 found that medical students who reported higher levels of internet addiction also had higher levels of stress, anxiety, and depression [47] This suggests that internet use may serve as a coping mechanism for some individuals who are experiencing mental health difficulties.

The results appears that a significant proportion of medical students experience sleep loss due to their online activities, with the majority reporting occasional to frequent instances of sleep deprivation. These findings are consistent with the results of previous studies that have examined the relationship between Internet use and sleep quality among college students.

A study by [48] surveyed a sample of Norwegian college students and found that frequent Internet use was associated with sleep problems, such as difficulty falling asleep and waking up too early. Similarly, a study by [49] found that excessive Internet use was linked to poorer sleep quality and increased daytime sleepiness among Israeli college students.

The results appears that a majority of medical students (71) frequently try to cut down their online time and fail. This finding is in line with the results

of a study by [50] examined the effectiveness of a brief internet-based intervention for reducing problematic internet use among young adults. The authors found that while the intervention was effective in reducing problematic internet use, many participants struggled to maintain the gains they had made after the intervention ended. In particular, participants reported difficulty resisting the urge to return to their previous patterns of problematic internet use.

These studies suggest that reducing problematic internet use can be challenging, and individuals may require ongoing support and intervention to maintain gains in reducing their internet use.

The indicate that a majority of medical students (66%) frequently choose to spend more time online over going out with others. This finding is consistent with a study by [51] examined the effects of social media use on subjective well-being and social behavior among young adults in the United States. The authors found that increased social media use was associated with decreased face-to-face social interaction, lower life satisfaction, and higher levels of loneliness and depression.

4. psychological effect of internet use:

The results suggest that a majority of medical students frequently or occasionally form new relationships with fellow online users. This finding is consistent with a study conducted by[52] , which examined the use of social media by medical students in Saudi Arabia. The researchers found that a majority of the participants reported using social media to connect with other medical students and healthcare professionals, and that social media played an important role in building relationships and fostering collaboration among students.

The results suggest that a significant proportion of medical students experience frequent to constant preoccupation with the internet even when they are not online. This could be indicative of problematic internet use or internet addiction.

This finding is consistent with the results of a study conducted by [38] which investigated the prevalence of problematic internet use among university students. The study found that a significant proportion of participants reported symptoms of problematic internet use, including preoccupation with the internet and withdrawal symptoms when offline.

Based on the results a significant proportion of medical students frequently or often find themselves saying "just a few more minutes" when using the Internet. This suggests that there may be a tendency towards excessive Internet use among this population, which could have implications for their academic performance, mental health, and overall well-being.which is consistent with other study , fore example , study that is relevant to Internet Addiction and its Predictors in Medical Students: A Cross-sectional Study from Lahore, Pakistan" by[52]. This study surveyed 500 medical students in Pakistan and found that 36% of them were addicted to the Internet, with higher rates of addiction among males and those who spent more time on the Internet. The study also found that Internet addiction was associated with lower academic performance and higher levels of anxiety and depression.

Based on the results , a significant proportion of medical students (70 out of 200 respondents) frequently try to hide how long they have been online, while 41 respondents reported doing so "often." This could suggest that these students may be experiencing internet addiction or may be aware of spending too much time online and feel the need to conceal it from others.

Research [44], which investigated the internet use patterns and associated psychological outcomes among medical students. The study found that many medical students reported feeling guilt, shame, or embarrassment about their internet use and were hesitant to disclose their online activities to others, including their peers and faculty members. This behavior was attributed to the stigmatization of certain online activities, such as social media use, by the medical community.

5. Internet addiction and gender:

In this study the female participants (51%) were equal to male (49%) It is possible because that the sample of participants was randomly selected and the number of males and females happened to be equal by chance.

The finding that a significant proportion of medical students have internet addiction is consistent with previous research on the prevalence of problematic internet use among young adults.

For example, a study by [53] examined the prevalence of internet addiction among Chinese college students and found that 12.2% of participants met the criteria for internet addiction. Another study by [54] investigated the prevalence of internet addiction among Iranian medical students and found that 22.6% of participants had moderate to severe internet addiction.

The finding that female medical students had a higher prevalence of internet addiction compared to male medical students is consistent with some previous studies on gender differences in problematic internet use.

A study by [55] examined gender differences in internet addiction among Turkish college students and found that female students had significantly higher levels of internet addiction compared to male students. Similarly, a study by [56] investigated gender differences in internet addiction among Taiwanese adolescents and found that females had higher levels of internet addiction compared to males.

Conclusion:

1. fifteen percent of medical students were addicted to the internet while the majority of users experiencing frequent problems due to the internet use

2.The majority of participants often stayed online longer than they intended.

3.Majority of the participants mentioned that Internet usage occasionally made them neglect their duties and hampered their academic performance or productivity.

4. Internet addiction is significantly more in female.

Recommendation:

1. **Raise awareness: Increase awareness among medical students about the potential risks and consequences of internet addiction. Conduct workshops, seminars, or awareness campaigns to educate students about healthy internet use and the importance of maintaining a balance between online and offline activities.**

2. **Promote time management skills: Encourage medical students to develop effective time management skills. Provide guidance on prioritizing academic tasks, setting specific time limits for internet use, and creating schedules that allow for regular breaks and offline activities.**

3. **Establish internet use guidelines: Develop clear guidelines and rules regarding internet use within educational settings. Collaborate with educational institutions to create policies that promote responsible and productive internet use among medical students. This can include limitations on personal internet use during study hours or implementing internet use monitoring tools.**

4. **Encourage healthy coping mechanisms: Teach medical students healthy coping mechanisms and stress management techniques that don't involve excessive internet use. Encourage them to engage in physical exercise, mindfulness practices, hobbies, or other activities that promote relaxation and well-being.**

5. **Provide support and counseling services: Establish support systems within educational institutions, such as counseling services, where**

medical students can seek help if they experience signs of internet addiction or related issues. Ensure that students have access to mental health professionals who can provide guidance and support.

6. **Foster a supportive environment: Create an environment that promotes healthy internet habits and provides social support. Encourage peer-to-peer discussions and support groups where medical students can share their experiences and support each other in maintaining a balanced internet use.**

7. **Research and interventions: Encourage further research on internet addiction among medical students and the effectiveness of interventions. Explore the development and implementation of targeted interventions specifically designed for medical students, considering their unique challenges and demands.**

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