Overview of Smartphone Addiction Levels in Pre-Clinical Students of the 2021 and 2022 Batchs at the Faculty of Medicine, Alkhairaat University, Palu

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ARTICLE INFO	ABSTRACT
  	A smartphone is a device that enables communication and also functions as a Personal Digital Assistant (PDA), with capabilities similar to a computer. A mobile phone is used for making phone calls, while a PDA is used as a personal assistant and organizer (Muhammad Yakub, 2020). Students use smartphones to search for information, work on tasks, store study files, and communicate with many people. Currently, during class hours, from 08:00 to 17:00, students actively use smartphones to exchange information, and after class, students continue to use their smartphones to review or read the materials provided during class. Due to the extensive time spent using smartphones for various activities, it is inevitable that smartphone users experience negative effects, one of which is addiction. The aim of this research is to assess the level of smartphone addiction among students at the Faculty of Medicine, Alkhairat University, from the 2021 and 2022 Batchs. This study employs a descriptive research method. The results show the level of addiction in the 2021 Batch: no addiction 0, mild addiction 3 people, moderate addiction 9 people, severe addiction 31 people, and very severe addiction 3 people. The results for the 2022 Batch are: no addiction 0, mild addiction 3 people, moderate addiction 29 people, severe addiction 32 people, and very severe addiction 4 people. Based on gender, the results for the 2021 Batch are: for females, no addiction 0, mild addiction 2 people, moderate addiction 6 people, severe addiction 19 people, and very severe addiction 2 people; for males, no addiction 0, mild addiction 1 person, moderate addiction 3 people, severe addiction 12 people, and very severe addiction 1 person. The results for the 2021 Batch show that addiction is more common among male students. For the 2022 Batch, the results for females are: no addiction 0, mild addiction 3 people, moderate addiction 23 people, severe addiction 27 people, and very severe addiction 4 people; for males, no addiction 0, mild addiction 6 people, moderate addiction 5 people, severe addiction 0, and very severe addiction 11 people. The results for the 2022 Batch indicate that addiction is more common among female students.

INTRODUCTION

A smartphone is a device used for communication and also functions as a Personal Digital Assistant (PDA), which has functions similar to a computer. A smartphone is used for making phone calls, while a PDA is used as a personal assistant and organize.[5] Currently, students use smartphones to search for information, work on tasks, store study files, and communicate with many people. Class hours are from 08:00 to 17:00, during which students actively use their smartphones to exchange information, and after class, they continue to use their smartphones to review or read the materials provided during class. However, alongside the advantages of using smartphones, there are also several negative effects that can harm both the users and others, regardless of gender. One of these effects is that students often use smartphones for prolonged periods and cannot control their usage, making them procrastinate on completing or reviewing their assignments and study materials. This can also negatively affect students' mental well-being due to smartphone addiction.[2]

The most common negative impact is addiction, which refers to a condition where an individual becomes dependent on smartphone usage, leading to social changes, such as withdrawal and an inability to be away from their smartphone. Smartphone addiction also causes other issues, including anxiety and pessimism. The second impact is sleep disturbances, as the light from smartphone screens at night suppresses melatonin production, making it easier to experience insomnia. The final negative impact discussed in this study is Nomophobia, a contemporary digital disorder characterized by the fear of being out of touch. Nomophobia is a condition where individuals experience excessive anxiety, worry, or sadness when they do not have access to the latest information or news.

In the study *Gender Profiles of Internet and Mobile Phone Use among Norwegian Adolescents*, it was found that females more frequently use smartphones for internet browsing, social activities such as chatting and emailing, while males tend to use smartphones for gaming, online shopping, watching videos/movies, and other programs.[4] Some students reported experiencing anxiety, and to determine whether this anxiety was due to smartphone addiction or other factors, the research raised the question: What is the level of smartphone addiction among preclinical students in the 2021 and 2022 Batchs at the Faculty of Medicine, Alkhairat University, Palu, and what are the direct impacts of severe addiction on the educational process they are undergoing?

MATERIAL AND METHOD

This study uses the total sampling method, taking the entire population from the 2021 and 2022 Batchs. The data collected in this research are primary data, obtained directly from the research subjects or samples. This includes respondent identify data and a questionnaire to identify the Smarphone Addiction Level Profile among preclinical students at the Faculty of Medicine, Alkhairaat University, from the 2021 and 2022 Batchs.

Time and Place of the Study

This study was conducted at the Faculty of Medicine, Alkhairaat University, Palu, from March 2023 to January 2024.

Population and Sample

The population and sample in this study consist of all students from the 2021 and 2022 Batchs who meet the inclusion criteria.

Data Presentation

The statistical analysis for this study was conducted using Statistical Product for Social Science (SPSS 26). Data management was performed after entering the questionnaire data into tables using the IBM Statistical Product for Social Science (SPSS 26) program.

RESULTS AND DISCUSSIONS

Table 1. Profile of Smarphone Addiction Levels Among Preclinical Students in the 2021 and 2022 Batchs at the Faculty of Medicine, Alkhairaat University

Description	Frequency	Percentage
No Addiction	0	0
Mild Addiction	3	6.5
Moderate Addiction	9	19.6
Severe Addiction	31	67.4
Very Severe Addiction	3	6.5
Total	46	100%

From Table 1, it shows that the distribution of smartphone addiction levels among preclinical students in the 2021 Batch indicates that most students fall into the severe addiction category, with 31 students (67.4%), followed by moderate addiction with 9 students (19.6%), mild addiction with 3 students (6.5%), and very severe addiction with 3 students (6.5%).

Description	Frequency	Percentage
No Addiction	0	0
Mild Addiction	3	4.4
Moderate Addiction	29	42.6
Severe Addiction	32	47.1
Very Severe Addiction	4	5.9
Total	68	100%

For the 2022 Batch, the majority of students fall under the severe addiction category, with 32 students (47.1%), followed by moderate addiction with 29 students (42.6%), mild addiction with 3 students (4.4%), and very severe addiction with 4 students (5.9%).

Table 2. Smartphone Addiction Levels Among Preclinical Students in the 2021 and 2022 Batchs Based on Gender

For the 2021 Batch (Female)

Description	Frequency	Percentage
No Addiction	0	0
Mild Addiction	2	6.9
Moderate Addiction	6	20.7
Severe Addiction	19	65.5
Very Severe Addiction	2	6.9
Total	29	100%

For the 2021 Batch (female), most students fall under the severe addiction category, with 19 students (65.5%), followed by moderate addiction with 6 students (20.7%), mild addiction with 2 students (6.9%), and very severe addiction with 2 students (6.9%).

For the 2021 Batch (Male):

Description	Frequency	Percentage
No Addiction	0	0
Mild Addiction	1	6.5
Moderate Addiction	3	19.6
Severe Addiction	12	67.4
Very Severe Addiction	1	6.5
Total	17	100%

For the 2021 Batch (male), the majority of students fall under the severe addiction category, with 12 students (67.4%), followed by moderate addiction with 3 students (19.6%), mild addiction with 1 student (6.5%), and very severe addiction with 1 student (6.5%).

For the 2022 Batch (Female)

Description	Frequency	Percentage
No Addiction	0	0
Mild Addiction	3	5.3
Moderate Addiction	23	40.4
Severe Addiction	27	47.4
Very Severe Addiction	4	7.0
Total	57	100%

For the 2022 Batch (female), 27 students (47.4%) are in the severe addiction category, 23 students (40.4%) in moderate addiction, 4 students (7.0%) in very severe addiction, and 3 students (5.3%) in mild addiction.

For the 2022 Batch (Male)

Description	Frequency	Percentage
No Addiction	0	0
Mild Addiction	0	0
Moderate Addiction	6	54.5
Severe Addiction	5	45.5
Very Severe Addiction	0	0
Total	11	100%

For the 2022 Batch (male), 6 students (54.5%) fall under moderate addiction, while 5 students (45.5%) fall under severe addiction.

Table 3. Most frequently Used Applications Among Preclinical Students in the 2021 and 2022 Batchs

For the 2021 Batch:

Descritption	Frequency (n)	Percentage %
Instagram	4	5.8
Tiktok	11	15.9
Whatsapp	16	23.2
Twitter	1	1.4
Entertainment	6	8.7
Internet	8	11.6
Total	46	100

For the 2021 Batch, WhatsApp is the most used application by 16 students (23.2%), followed by TikTok with 11 students (15.9%), Internet with 8 students (11.6%), Entertainment with 6 students (8.7%), Instagram with 4 students (5.8%), and Twitter with 1 student (1.4%).

For the 2022 Batch:

Descritption	Frequency (n)	Percentage %
Instagram	6	8.7
Tiktok	6	8.7
Whatsapp	23	33.3
Twitter	1	1.4
Entertainment	1	1.4
Internet	31	44.9
Total	68	100

For the 2022 Batch, the most used application is Internet, with 31 students (44.9%), followed by WhatsApp with 23 students (33.3%), Instagram and TikTok with 6 students each (8.7%), and Twitter and Entertainment with 1 student each (1.4%).

DISCUSSION

Based on the results from Table 2, it was found that in the 2021 cohort, the level of smartphone addiction is dominated by the male group, with 12 males (67.4%) experiencing severe addiction, compared to 19 females (65.5%). The moderate addiction level was more commonly experienced by females, with 6 females (20.7%) and 3 males (19.6%). For mild addiction, 2 females (6.9%) and 1 male (6.5%) were affected. In the severe addiction category, 2 females (6.9%) and 1 male (6.5%) were reported.

In the 2022 cohort, the majority of males experienced moderate addiction, with 6 males (54.5%) and 5 males (45.5%) experiencing severe addiction. For females, there was a variation in the level of smartphone addiction, with 27 females (47.4%) experiencing severe addiction, 23 females (40.4%) experiencing moderate addiction, and 4 females (7.0%) experiencing very severe addiction. Mild addiction was experienced by 3 females (5.3%). The results of this study are consistent with the findings from the study titled *Gender Profiles of Internet and Mobile Phone Use among Norwegian Adolescents* by Reidulf G. Watten (2008), which found that females are more likely to use smartphones for internet browsing and social activities such as chatting and emailing, whereas males tend to use their smartphones for gaming, online shopping, watching videos/movies, and using other programs.

CONCLUSION AND RECOMMENDATION

The results show that severe addiction is the most common among preclinical students, with 31 students (67.4%) in the 2021 cohort and 32 students (47.1%) in the 2022 cohort experiencing this level of addiction. Based on gender, in the 2021 cohort, severe addiction was predominantly experienced by male students (45.5%), while in the 2022 cohort, it was more common among female students (47.4%). The results of the study indicate that there was no significant difference between male and female students in terms of smartphone addiction. However, on average, female students tend to use smartphones more intensively, especially due to their preference for using applications like Instagram, WhatsApp, and others, compared to male students.

This finding is consistent with the research by Lee, Chang, Ling, and Cheng, which showed that compared to males, females are more socially oriented. For example, females tend to spend more time on phone calls than males.

In this study, the most frequently used application by students was WhatsApp, with 23.2% of students in the 2021 cohort and 33.3% of students in the 2022 cohort using it. WhatsApp is primarily used for communication, exchanging information, and sending and receiving soft files, making it a commonly used application in the daily lives of students.

AUTHOR CONTRIBUTIONS

Conceptualization, A.N.A.S, M.M., A.S.T.U; Methodology, A.N.A.S.,; Validation, M.M., A.S.T.U.; Formal Analysis, A.N.A.S.; Investigation, A.N.A.S., Resources, A.N.A.S.; Data Curation, A.N.A.S.; Writing-Original Draft Preparation, A.N.A.S., M.M., and A.S.T.U.; Visualization, A.N.A.S. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declares that there is no conflict of interest.

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