JMU
Jurnal Medika Udayana
ISSN: 2597-8012 JURNAL MEDIKA UDAYANA, VOL. 14 NO.03, MARET, 2025
DOAJ DIRECTORY OF OPEN ACCESS JOURNALS
Accredited SINTA 3
Received: 2024-01-10 Revision: 2024-09-07 Accepted: 02-02-2025

RELATIONSHIP BETWEEN INTERNET ADDICTION LEVELS AND ANXIETY LEVELS IN FIRST YEAR UDAYANA UNIVERSITY MEDICAL STUDENTS

Ni Putu Cizya Naryati Pramudia[1], Cokorda Bagus Jaya Lesmana[2], Luh Nyoman Alit Aryani[2], Ida Aju Kusuma Wardani[2]

[1.] Undergraduate Medical Study Program, Faculty of Medicine, Udayana University
[2.] Department of Psychiatry, Faculty of Medicine, Udayana University
e-mail: cizyanaryati14@student.unud.ac.id, cokordabagus@unud.ac.id,
alitaryani24@gmail.com, kusuma_wardani@unud.ac.id

ABSTRACT

First year medical students have the potential to experience internet addiction because they experience a double transition process and face competitive lectures. One of the negative impacts of internet addiction is anxiety. Anxiety will get worse when people with internet addiction do not have access to the internet. The aim of this research was to determine whether there was a relationship between internet addiction levels and anxiety levels in first year medical students at Udayana University. This research used a cross sectional analytical design. The research subjects were 177 active medical students at Udayana University class of 2022, aged 18 – 21 years, and not currently receiving therapy for anxiety or anxiety disorders. Research data was collected online via Google Form. This research found that first year Udayana University medical students were not addicted to the internet (19.2%), mild (49.2%), moderate (30.5%), and severe (1.1%) internet addiction. Analysis of anxiety data found no anxiety (27.7%), mild anxiety (26.0%), moderate anxiety (19.8%), and severe anxiety (26.6%). The Spearman Rank correlative test between internet addiction levels and anxiety levels found p = 0.000. It can be concluded that the majority of students experienced mild internet addiction and severe anxiety. This research also concluded that there was a significant relationship between internet addiction levels and anxiety levels in first year medical students at Udayana University (p = 0.000; < 0.05).
Keywords : Internet addiction, Anxiety, Medical students

ABSTRAK

Mahasiswa pendidikan dokter tahun pertama berpotensi mengalami adiksi internet karena mengalami proses transisi ganda dan menghadapi perkuliahan kompetitif. Salah satu dampak negatif adiksi internet adalah kecemasan. Kecemasan akan semakin parah ketika orang yang adiksi internet tidak mendapat akses ke internet. Tujuan penelitian ini untuk mengetahui ada tidaknya hubungan tingkat adiksi internet dengan tingkat kecemasan pada mahasiswa pendidikan dokter Universitas Udayana tahun pertama. Penelitian ini menggunakan desain analitik *cross sectional*. Subjek penelitian adalah 177 mahasiswa aktif pendidikan dokter Universitas Udayana angkatan 2022, berusia 18 – 21 tahun, dan tidak sedang mendapatkan terapi kecemasan atau gangguan cemas. Data penelitian dikumpulkan secara daring melalui Google Form. Penelitian ini mendapatkan hasil bahwa mahasiswa pendidikan dokter Universitas Udayana tahun pertama tidak adiksi internet (19,2%), adiksi internet tingkat ringan (49,2%), sedang (30,5%), dan berat (1,1%). Analisis data kecemasan mendapatkan tidak cemas (27,7%), cemas ringan (26,0%), cemas sedang (19,8%), dan cemas berat (26,6%). Uji korelatif *Rank Spearman* antara tingkat adiksi internet dengan tingkat kecemasan mendapatkan *p* = 0,000. Dapat disimpulkan bahwa mayoritas mahasiswa mengalami adiksi internet ringan dan cemas berat. Penelitian ini juga menyimpulkan ada hubungan signifikan antara tingkat adiksi internet dengan tingkat kecemasan pada mahasiswa pendidikan dokter Universitas Udayana tahun pertama (*p* = 0,000; < 0,05).
Kata kunci : Adiksi internet, Kecemasan, Mahasiswa kedokteran

INTRODUCTION

The presence of the internet has had a major impact on various important aspects of life and has caused its use to increase rapidly globally.[1] The results of the eMarketer survey by the Ministry of Communication and Information of the Republic of Indonesia stated that internet users in the world reached around 3.6 billion in 2018. Indonesia was among the top ten countries with the most internet users in the world.[2] Survey results from the Indonesian Internet

Service Providers Association (APJII) in April 2019 showed that 64.8% of Indonesia's population were internet users.[3]

Adolescents were the largest number of internet users in the world.[4] This condition also occurs in Indonesia. The largest number of internet users in Indonesia were people aged 15 – 19 years, which were adolescents.[3] Apart from having a positive impact, internet use on adolescents also has a negative impact because of the nature of adolescents who are easily influenced by the surrounding environment.[2] The ease of obtaining pleasure via the internet without self control can lead to internet addiction. A previous study stated that the prevalence of internet addiction among Asian adolescents was higher than in western countries.[1] Around 80% of adolescents aged 10 – 19 years from 11 provinces in Indonesia experienced internet addiction.[5]

Adolescents and early adults, such as college students, have the potential to be more exposed to internet addiction.[6] First year college students use the internet more often to support the adaptation process. This can lead first year college students to dig up excessive information from the internet and consider online relationships more important than real life, which are two of the five types of internet addiction.[7] Furthermore, internet addiction can cause anxiety in college students. A study of first year college students in Bangladesh found the prevalence of moderate to very severe anxiety was 61%, with excessive internet use as the main risk factor.[8] This happens because internet addiction disrupts the maturation process of brain structures so that it can affect emotional function.[7]

First year medical students have to face more difficult conditions, namely adapting to competitive lectures. This makes first year medical students more susceptible to internet addiction. On the other hand, almost half of first year medical students experienced mental health problems, including anxiety.[9] The interesting thing is that the anxiety will get worse when someone who is addicted to the internet loses access to the internet and only decreases when accessing the internet.[10]

Based on the description above, first year medical students can experience internet addiction and anxiety. Therefore, research was needed to determine the relationship between internet addiction levels and anxiety levels of first year medical students. However, there was not much research on this matter, including at Udayana University. Based on the explanation above, the author wanted to know the relationship between internet addiction levels and anxiety levels in first year Udayana University medical students.

MATERIALS AND METHODS

This research used a cross sectional analytical design. This research was conducted on first year students of the Undergraduate Medical Study Program, Faculty of Medicine, Udayana University, class of 2022. The minimum sample size was calculated based on the proportion estimation formula for cross sectional research. Sample selection used total sampling technique. This research has received ethical clearance from the Research Ethics Commission of the Faculty of Medicine, Udayana University. Ethical clearance number was 60/UN14.2.2.VII.14/LT/2023.

Data collection was carried out for one month (March – April 2023) online via a questionnaire in Google Form. A total of 177 of the 193 respondents who filled out the questionnaire were selected as research subjects because they met the inclusion criteria and did not meet the exclusion criteria. The inclusion criteria for this research were active first year students of the Undergraduate Medical Study Program, Faculty of Medicine, Udayana University (class of 2022), aged 18 – 21 years, and agreed to informed consent for the research. The exclusion criteria for this study were currently receiving therapy for anxiety or anxiety disorders and respondents who did not fill out the Google Form questionnaire completely.

The Google Form questionnaire consisted of 3 parts. The first part was a respondent characteristics questionnaire which was used to collect data on respondent characteristics, namely age and gender. The second part was the Internet Addiction Test (IAT) questionnaire to determine the level of internet addiction. The third part was the Beck Anxiety Inventory (BAI) questionnaire to determine the level of anxiety.

Previous research found that the Indonesian version of the IAT questionnaire had good validity and reliability.[11] This questionnaire consists of 20 questions and adopts a Likert scale, namely 0 (never), 1 (rarely), 2 (sometimes), 3 (often), 4 (very often), and 5 (always). The interpretation of IAT questionnaire scores is 0 – 30 = normal, 31 – 49 = mild internet addiction, 50 – 79 = moderate internet addiction, and 80 – 100 = severe internet addiction.

The validity and reliability of the BAI questionnaire translated into Indonesian has been tested by previous research. The test results showed that all BAI scale items were valid and the Cronbach's Alpha value was 0.938.[12] This questionnaire consists of 21 statement items, each of which has a score of 0 – 3, namely 0 (not at all), 1 (mild, but not too bothersome), 2 (moderate, sometimes unpleasant), and 3 (severe, very annoying). The interpretation of the BAI questionnaire score is 0 – 7 = no anxiety, 8 – 15 = mild anxiety, 16 – 25 = moderate anxiety, and 26 – 63 = severe anxiety.[13]

Data analysis was carried out using SPSS software. The relationship between internet addiction levels and anxiety levels was analyzed using the Spearman Rank correlative test because both data were on an ordinal scale. Additional analysis was performed to calculate the prevalence ratio (PR). Additional tests using the Spearman Rank correlative test were carried out to determine the relationship between age and internet addiction levels and also age and anxiety levels because it looked for relationships between numerical and ordinal data. Additional tests using the Contingency Coefficient

correlative test were also carried out to determine the relationship between gender and internet addiction levels and also gender and anxiety levels because it looked for a relationship between categorical and ordinal data. The p value <0.05 indicates that there was a significant relationship between the two variables that have been tested.[14]

RESULTS

Characteristics of Research Subjects

All respondents came from the first year of the Undergraduate Medical Study Program at Udayana University (class of 2022). Analysis of research data showed that the majority of respondents were 18 years old (n = 93; 52.5%), followed by 19 years old (n = 73; 41.2%), 20 years old (n = 9; 5.1%), and 21 years old (n = 2; 1.1%). This research also found that there were more female research respondents (n = 118; 66.7%) than males (n = 59; 33.3%). The characteristics of the research subjects are presented in table 1.

Table 1. Characteristics of research subjects

Variable	Frequency (%)
Age	
18 years	93 (52.5)
19 years	73 (41.2)
20 years	9 (5.1)
21 years	2 (1.1)
Gender	
Male	59 (33.3)
Female	118 (66.7)

Overview of Internet Addiction Levels

Analysis of IAT questionnaire score data showed that the majority of research subjects experienced internet addiction (n = 143; 80.8%), while the rest were normal (n = 34; 19.2%). The majority of respondents experienced a mild level of internet addiction (n = 87; 49.2%). An overview of the internet addiction levels is presented in table 2.

Table 2. Overview of internet addiction levels

Internet addiction level	Frequency (%)
Normal	34 (19.2)
Mild	87 (49.2)
Moderate	54 (30.5)
Severe	2 (1.1)

Overview of Anxiety Levels

Analysis of BAI questionnaire scores showed that the majority of respondents experienced anxiety (n = 128; 72.3%) and the remainder were not anxious (n = 49; 27.7%). The highest level of anxiety was severe anxiety (n = 47; 26.6%). An overview of anxiety levels is presented in table 3.

Table 3. Overview of anxiety levels

Anxiety level	Frequency (%)
No anxiety	49 (27.7)
Mild anxiety	46 (26.0)
Moderate anxiety	35 (19.8)
Severe anxiety	47 (26.6)

Relationship between Internet Addiction Levels and Anxiety Levels

The results of the bivariate test with the Spearman Rank correlative test showed that there was a significant relationship between internet addiction levels and anxiety levels, with a value of p = 0.000. This p value is smaller than 0.05. The relationship between internet addiction levels and anxiety levels is presented in table 4.

Table 4. Relationship between internet addiction levels and anxiety levels

Internet addiction level		Anxiety level				Total	p value
		No anxiety	Mild anxiety	Moderate anxiety	Severe anxiety		
Normal	n	17	10	4	3	34	0.000*
	%	9.6	5.6	2.3	1.7	19.2	
Mild	n	25	21	21	20	87	
	%	14.1	11.9	11.9	11.3	49.2	
Moderate	n	7	15	10	22	54	
	%	4.0	8.5	5.6	12.4	30.5	
Severe	n	0	0	0	2	2	
	%	0.0	0.0	0.0	1.1	1.1	
Total	n	49	46	35	47	177	
	%	27.7	26.0	19.8	26.6	100.0	

*Statistical significance test was done by Spearman Rank correlative test.

Calculation of Prevalence Ratio (PR)

The PR calculation required a 2 x 2 cross tabulation table for the internet addiction and anxiety variables, which is presented in table 5. The PR and 95% Confidence Interval (CI) have been calculated using SPSS software. The PR calculation was carried out by dividing the prevalence of anxiety in the group of students who were addicted to the internet (77.6%) by the prevalence of anxiety in the group of students who were not addicted to the internet (50.0%). Based on these calculations, the PR was 1.552 (95% CI = 1.097 – 2.197).

Table 5. 2 x 2 cross tabulation of internet addiction and anxiety

Internet addiction		Anxiety		Total	PR
		Anxiety	No anxiety		
Internet addiction	n	111	32	143	1.552
	%	77.6	22.4	100.0	
No internet addiction	n	17	17	34	
	%	50.0	50.0	100.0	
Total	n	128	49	177	
	%	72.3	27.7	100.0	

Relationship between Age and Internet Addiction Levels

The results of data analysis showed that the highest percentage of mild (25.4%) and moderate (18.1%) internet addiction was found in research subject aged 18 years. Severe internet addiction occurred at the age of 19 and 20 years, each at 0.6%. There was no significant relationship between age and internet addiction levels (p = 0.481). That relationship is presented in table 6.

Tabel 6. Relationship between age and internet addiction levels

Age (years)		Internet addiction level				Total	p value
		Normal	Mild	Moderate	Severe		
18	n	16	45	32	0	93	0.481*
	%	9.0	25.4	18.1	0.0	52.5	
19	n	17	35	20	1	73	
	%	9.6	19.8	11.3	0.6	41.2	
20	n	0	6	2	1	9	
	%	0.0	3.4	1.1	0.6	5.1	
21	n	1	1	0	0	2	
	%	0.6	0.6	0.0	0.0	1.1	
Total	n	34	87	54	2	177	
	%	19.2	49.2	30.5	1.1	100.0	

*Statistical significance test was done by Spearman Rank correlative test.

Relationship between Gender and Internet Addiction Levels

The results of data analysis showed mild (14.1%), moderate (11.9%), and severe (0.0%) internet addiction in male students. Mild (35.0%), moderate (18.6%), and severe (1.1%) internet addiction were found in female students. There was no significant relationship between gender and internet addiction levels (p = 0.400). That relationship is presented in table 7.

Table 7. Relationship between gender and internet addiction levels

Gender		Internet addiction level				Total	p value
		Normal	Mild	Moderate	Severe		
Male	n	13	25	21	0	59	0.400*
	%	7.3	14.1	11.9	0.0	33.3	
Female	n	21	62	33	2	118	
	%	11.9	35.0	18.6	1.1	66.7	
Total	n	34	87	54	2	177	
	%	19.2	49.2	30.5	1.1	100.0	

*Statistical significance test was done by Contingency Coefficient correlative test.

Relationship between Age and Anxiety Levels

The results of data analysis showed that mild (14.1%) and moderate (11.3%) anxiety was highest at age 18 years. Severe anxiety was highest at age 19 years (13.6%). There was no significant relationship between age and anxiety levels (p = 0.578). That relationship is presented in table 8.

Table 8. Relationship between age and anxiety levels

Age (years)		Anxiety level				Total	p value
		No anxiety	Mild anxiety	Moderate anxiety	Severe anxiety		
18	n	27	25	20	21	93	0.578*
	%	15.3	14.1	11.3	11.9	52.5	
19	n	17	19	13	24	73	
	%	9.6	10.7	7.3	13.6	41.2	
20	n	3	2	2	2	9	
	%	1.7	1.1	1.1	1.1	5.1	
21	n	2	0	0	0	2	
	%	1.1	0.0	0.0	0.0	1.1	
Total	n	49	46	35	47	177	
	%	27.7	26.0	19.8	26.6	100.0	

*Statistical significance test was done by Spearman Rank correlative test.

Relationship between Gender and Anxiety Levels

The results of data analysis showed mild (7.9%), moderate (5.6%), and severe (8.5%) anxiety in male students. Mild (18.1%), moderate (14.1%), and severe (18.1%) anxiety were found in female students. There was no significant relationship between gender and anxiety levels (p value = 0.613) and that is presented in table 9.

Table 9. Relationship between gender and anxiety levels

Gender		Anxiety level				Total	p value
		No anxiety	Mild anxiety	Moderate anxiety	Severe anxiety		
Male	n	20	14	10	15	59	0.613*
	%	11.3	7.9	5.6	8.5	33.3	
Female	n	29	32	25	32	118	
	%	16.4	18.1	14.1	18.1	66.7	
Total	n	49	46	35	47	177	
	%	27.7	26.0	19.8	26.6	100.0	

*Statistical significance test was done by Contingency Coefficient correlative test.

DISCUSSION

Based on the research that has been conducted, the research subject characteristics data presented in table 1 shows that the majority of respondents were 18 years old (52.5%). This study limited the age of research respondents as an inclusion criterion, namely 18 – 21 years, which was considered late adolescence. This age range was chosen because most first year medical students are late adolescents. Previous research on first year medical students at Udayana University also applied inclusion criteria for late adolescents, namely 18 – 20 years and also found that the age of most research subjects was 18 years (63%).[15]

This research found that the majority of research subjects were female. One of the reasons for this finding is that the prevalence of female students was greater than male in this study. Another study on first and second year medical students from Andalas University also found that the majority of research subjects were female, namely 323 out of 470 research subjects.[16] Previous research conducted on first year Udayana University medical students also found that the majority of research subjects were female (62.5%).[15]

Analysis of IAT questionnaire scores showed that the majority of research subjects experienced internet addiction (80.8%) and the majority had mild internet addiction (49.2%). One of the reasons for the high percentage of internet addiction in first year medical students is the greater use of the internet to support the adaptation process. Greater internet use is aimed at finding information about lectures or establishing new relationships if it is awkward to communicate directly. Excessive use of the internet and without good self control can lead to internet addiction.

The results of this research are in line with research on medical students in other countries and Indonesia. Research conducted on medical students in Serbia found that the percentage of internet addiction was 57.2%.[17] Another study on medical students in India found that the percentage of internet addiction was 61.4% and the percentage of mild internet addiction was found to be the highest.[18] Research conducted in Indonesia on medical students at Mulawarman University found that the percentage of internet addiction was 81.9% and the majority experienced mild internet addiction.[19]

Furthermore, internet addiction among first year medical students at Andalas University (27.4% of 248 students) was higher than second year students (23.9% of

222 students). The reason that internet addiction was found to be higher in first year students compared to second year students is that first year students experienced a transition period from school to college so they began to lose the role of parents as self control as during school. This causes first year students to be able to use the internet more freely without good self control.[16]

Apart from the things above, it is thought that the long term impact of the Covid-19 pandemic that recently hit the world has also contributed to the increase in the prevalence of internet addiction. This has been proven by research conducted on medical students at a Malaysian public university. The research found that internet addiction was 83.5% during the pandemic, with the highest percentage reported at 37% during the pre-pandemic period.[20] Even though the pandemic is over, time and effort are still needed to return the condition of internet addiction to normal for people who already suffer from internet addiction.

Apart from internet addiction, mental health problems, such as anxiety, are also common among medical students who experience relatively heavy pressure in the competitive and difficult world of studying. Based on the analysis of BAI questionnaire scores, this study found that the majority of research subjects experienced anxiety (72.4%) and most were classified as severe anxiety (26.6%). The results of this study are in accordance with research on first year medical students at the University of Lampung, who had moderate – very severe anxiety levels of 39.6% of 240 students.[21] The results of this study are also supported by the results of a meta-analysis which examined the global prevalence of anxiety in medical students, namely the global prevalence of anxiety in medical students was 33.8% and was most common in medical students from the Middle East and Asia.[22]

Previous research conducted on medical students at Udayana University found data that moderate – severe anxiety was higher in first year students (47.3%) compared to other year classes. In the research mentioned, it was explained that the cause of the high prevalence of anxiety in first year students was the need for time to adapt to the world of college. Apart from that, the research mentioned above was carried out during the Covid-19 pandemic, so the pandemic situation made the learning system different from before and less effective.[23] If related to this research, adapting learning methods back to normal situations after the pandemic is considered to be one of the reasons for the high prevalence of anxiety in first year medical students.

In addition, another study that examined academic anxiety in first year Udayana University medical students found that 60 of the 80 research subjects experienced moderate to high academic anxiety.[15] This gives the imagination that academic learning in medical courses is tough and competitive. This also includes challenges for first year students to adapt, apart from adapting to non-academic things.

Based on the results of bivariate data analysis using the Spearman Rank correlative test, this research found that there was a significant relationship between internet addiction levels and anxiety levels in first year Udayana University medical students ($p = 0.000$). Research specifically examining the relationship between internet addiction and anxiety in first year medical students is limited. However, the results of previous research examining the relationship between internet addiction and anxiety in medical students, not specifically first year students, also support the findings of this study. A previous study at Warmadewa University on students from the Faculty of Medicine and Health Sciences found a significant relationship between internet addiction and anxiety.[24] However, previous research on students from the Faculty of Medicine at Tarumanegara University showed that there was no significant relationship between internet addiction and anxiety.[25] Research on medical students at Mulawarman University also found that there was no significant relationship between internet addiction and anxiety levels.[19] This shows the need for other research that examines the relationship between internet addiction and anxiety specifically in first year medical students at other institutions as reference material to obtain more definite conclusions.

Additional analysis in the form of PR calculations was carried out in this study to measure the comparison between the prevalence of anxiety in first year medical students who were addicted to the internet and the prevalence of anxiety in first year medical students who were not addicted to the internet. According to table 5, the PR calculation was carried out by dividing the prevalence of anxiety in the group of students who were addicted to the internet (77.6%) by the prevalence of anxiety in the group of students who were not addicted to the internet (50.0%). Based on calculations, PR = 1.552 was obtained. Based on SPSS analysis, the 95% CI value of PR 1.552 was 1.097 – 2.197. The interpretation of these results is that first year medical students who were addicted to the internet have a 1.552 times greater risk of experiencing anxiety than first year medical students who were not addicted to the internet in the research sample. This result also occurred in the population because the PR in the population was found to be in the range 1.097 – 2.197 with a confidence level of 95%. This PR was greater than 1 and the 95% CI did not involve 1, meaning that internet addiction was a risk factor for anxiety.

Several additional tests were also carried out in this study. Analysis of the relationship between age and internet addiction levels is presented in table 6 and found that there was no significant relationship ($p = 0.481$). The results of this study are in line with research conducted on medical students at a university in Korea, namely that there was no significant relationship between age and internet addiction ($p = 0.411$).[26] In table 6, it can be seen that the highest percentage of mild and moderate internet addiction occurred

in research subjects aged 18 years, while severe internet addiction occurred at the ages of 19 and 20 years. This shows that internet addiction that is not treated properly can develop to increasingly severe levels. This can happen because someone who is addicted to the internet can experience increasingly severe anxiety if they do not have access to the internet. The anxiety caused by internet addiction can only be reduced by getting access to the internet. This condition can encourage greater internet use and worsen the level of internet addiction if appropriate treatment is not provided immediately.

The next additional test was carried out to analyze the relationship between gender and internet addiction levels which is presented in table 7. Based on data analysis, no significant relationship was found (p = 0.400). However, the results of data analysis showed that the percentage of mild, moderate and severe levels of internet addiction was higher in female research subjects than in male research subjects. One of the reasons for these results is that the proportion of female research subjects was greater than male in this study. These results are in contrast to previous research in India, which found a significant relationship between gender and internet addiction. In the research conducted in India mentioned above, the percentage of internet addiction in male (74.8%) was greater than in female (56.2%) even though the number of female research subjects (71.9%) was greater than male (28.1%).[18] Another study on medical students in Pakistan also showed a significant relationship between gender and internet addiction, but more likely in female (12.5%) than male (2.9%). There were more female (51.4%) than male (48.6%) research subjects in the study in Pakistan mentioned above.[27]

Further analysis was carried out to find the relationship between age and anxiety levels which is presented in table 8 and found that there was no significant relationship (p = 0.578). Analysis of research data also showed that the percentage of mild and moderate anxiety was highest at the age of 18 years. The percentage of severe anxiety in this study was highest at the age of 19 years. Previous research also found that there was no significant relationship between age and anxiety levels in first year medical education students at Tadulako University.[28]

One of the interesting things about the results of this research is about age and anxiety levels because these results complement the unique, slightly ambiguous findings in previous research at Udayana University. That previous research examined anxiety in all classes of Udayana University medical students and found significant differences between class year and anxiety as well as age and anxiety. The research mentioned found that moderate – severe anxiety was found to be highest in first year students, while the level of severe anxiety was higher in the 19 – 22 year age group compared to the 16 – 18 year age group. The assumption written in the research mentioned was that the 19 – 22 year age group was generally in the second and third levels.[23] However, this research found that the research subjects aged 19 – 21 years were still first year students. Moreover, medical students aged 19 years ranked second for the highest age percentage. The highest percentage of severe anxiety was also found in research subjects aged 19 years, who were first year medical students in this study.

Finally, additional tests analyzing the relationship between gender and anxiety levels which is presented in table 9. The results of the analysis found that there was no significant relationship (p = 0.613). From the results of this data analysis, it can also be seen that female research subjects had a higher percentage of mild, moderate and severe anxiety. The results of this study are in line with research conducted on medical students at Sriwijaya University which found that there was no significant relationship between gender and anxiety and the percentage of female students who were anxious was higher than male students.[29] The results of this study are also supported by meta-analysis data regarding the global prevalence of anxiety in medical students. The results of the meta-analysis data analysis showed that there was no statistically significant difference between gender and anxiety. However, in the meta-analysis mentioned above, it was found that the prevalence of female experiencing anxiety (38.0%) was greater than male (27.6%).[22]

CONCLUSIONS AND SUGGESTIONS

Analysis of research data showed that the majority of first year Udayana University medical students experienced internet addiction (80.8%). The highest percentage of internet addiction was mild (49.2%), followed by moderate (30.5%), and severe (1.1%). The majority of first year Udayana University medical students also experienced anxiety (72.3%). The highest percentage of anxiety was severe anxiety (26.6%), followed by mild anxiety (26.0%), and moderate anxiety (19.8%). This research found a significant relationship between internet addiction levels and anxiety levels in first year medical students at Udayana University. The results of PR calculation showed that first year medical students who were addicted to the internet have a 1.552 times greater risk of experiencing anxiety than first year medical students who were not addicted to the internet.

Reflecting on the results of this research, first year medical students are advised to apply self control in internet use to prevent the worsening of internet addiction and anxiety. The role of parents is also very necessary to help first year medical students control themselves and facilitate treatment from experts in conditions of severe internet addiction and severe anxiety. This research has not looked for other factors that contribute to internet addiction and anxiety, such as internal, external, social or situational factors. Therefore, further research regarding these factors needs to be carried out. Similar research at other institutions also needs to be carried out because research examining the relationship between internet addiction and anxiety in first

year medical students is still limited. The government and clinicians also need to take early prevention, for example screening for internet addiction and anxiety. This is important to improve the mental health of medical students so that students can survive in the competitive world of medical education and can become qualified doctors in the future.

REFERENCES

1. Lin YJ, Hsiao RC, Liu TL, Yen CF. Bidirectional Relationships of Psychiatric Symptoms with Internet Addiction in College Students: A Prospective Study. J Formos Med Assoc [Internet]. 2020;119(6):1093–100. Available from: https://doi.org/10.1016/j.jfma.2019.10.006
2. Levani Y, Hakam MT, Utama MR. Potensi Adiksi Penggunaan Internet pada Remaja Indonesia di Periode Awal Pandemi Covid 19. Hang Tuah Med J. 2020;17(2):102.
3. Wahyudiyono W. The Implications of Using Internet for Social Participation in East Java. J Komunika J Komunikasi, Media dan Inform. 2019;8(2):63.
4. Hou J, Jiang Y, Chen S, Hou Y, Wu J, Fan N, et al. Cognitive Mechanism of Intimate Interpersonal Relationships and Loneliness in Internet-addicts: An ERP Study. Addict Behav Reports [Internet]. 2019;10(1):1–11. Available from: https://doi.org/10.1016/j.abrep.2019.100209
5. Chastanti I. Analisis Adiksi Internet terhadap Kemampuan Interpersonal Siswa SMA di Kabupaten Labuhan Batu Utara. Sos Horiz J Pendidik Sos. 2020;7(1):29–36.
6. Mahapatra A, Sharma P. Association of Internet Addiction and Alexithymia – A Scoping Review. Addict Behav [Internet]. 2018;81(1):175–82. Available from: http://dx.doi.org/10.1016/j.addbeh.2018.02.004
7. Kurniasanti KS, Assandi P, Ismail RI, Nasrun MWS, Wiguna T. Internet Addiction: A New Addiction? Med J Indones. 2019;28(1):82–91.
8. Islam S, Akter R, Sikder T, Griffiths MD. Prevalence and Factors Associated with Depression and Anxiety Among First-Year University Students in Bangladesh: A Cross-Sectional Study. Int J Ment Health Addict. 2022;20(1):1289–302.
9. Shah P, Sapkota A, Chhetri A. Depression, Anxiety and Stress among First-year Medical Students in a Tertiary Care Hospital : A Descriptive Cross-sectional Study. J Nepal Med Assoc. 2021;59(236):346–9.
10. Simanjuntak Y. Hubungan Adiksi Internet dengan Anxietas pada Mahasiswa Fakultas Kedokteran Universitas Sumatera Utara. Universitas Sumatera Utara; 2017.
11. Siste K, Suwartono C, Nasrun MW, Bardosono S, Sekartini R, Pandelaki J, et al. Validation Study of The Indonesian Internet Addiction Test Among Adolescents. PLoS One [Internet]. 2021;16(2):1–15. Available from: http://dx.doi.org/10.1371/journal.pone.0245833
12. Christianto LP, Kristiana R, Franztius DN, Santoso D, Winsen, Ardani A. Kecemasan Mahasiswa di Masa Pandemi Covid-19. J Selaras. 2020;3(1):67–82.
13. Sari NLGLP, Anom DG, Witarsa MS. Pengaruh Terapi Nyanyian (Chanting) Mantra OM Terhadap Tingkat Kecemasan Pasien Kanker yang Dilakukan Kemoterapi di Ruang Angsoka 2 RSUP Sanglah Denpasar. J Keperawatan Community Publ Nurs. 2016;4(1):1–8.
14. Suyanto, Amal AI, Noor A, Astutik IT. Analisis Data Penelitian Petunjuk Praktis Bagi Mahasiswa Kesehatan Menggunakan SPSS. Semarang: UNISSULA PRESS; 2018. 114 p.
15. Permata KA, Widiasavitri PN. Hubungan antara Kecemasan Akademik dan Sleep Paralysis pada Mahasiswa Fakultas Kedokteran Universitas Udayana Tahun Pertama. J Psikol Udayana. 2019;6(01):1–10.
16. Firdaus S, Asri A, Noverial N. Korelasi Kecanduan Internet dengan Kualitas Hidup Mahasiswa Kedokteran Tahun Pertama dan Kedua UNAND. J Ilmu Kesehat Indones. 2022;3(3):201–9.
17. Stanković M, Nešić M. Association of Internet Addiction with Depression, Anxiety, Stress, and the Quality of Sleep: Mediation Analysis Approach in Serbian Medical Students. Curr Res Behav Sci. 2022;3(100071):1–8.
18. Asokan DAG, Varghese VA, A R. Internet Addiction among Medical Students and Its Impact on Academic Performance: An Indian Study. J Med Sci Clin Res. 2019;7(3):670–6.
19. Meilinda M, Mualimin J, Fikriah I. The Correlation between Internet Addiction and Anxiety Level among Medical Students at Medicine Study Program of Medicine Faculty, Mulawarman University. J Kesehat Pasak Bumi Kalimantan [Internet]. 2022;5(1):109–20. Available from: http://e-journals.unmul.ac.id/index.php/JKPBK/article/view/7447%0Ahttps://e-journals.unmul.ac.id/index.php/JKPBK/article/download/7447/4855
20. Ismail N, Tajjudin AI, Jaafar H, Nik Jaafar NR, Baharudin A, Ibrahim N. The Relationship between Internet Addiction, Internet Gaming and Anxiety among Medical Students in A Malaysian Public University during Covid-19 Pandemic. Int J Environ Res Public Health. 2021;18(11870):1–12.
21. Elindra MZR, Oktaria D, Aries R. Hubungan Tingkat Kecemasan terhadap Hasil Ujian OSCE pada Mahasiswa Tingkat Pertama di Fakultas Kedokteran Universitas Lampung. Medula. 2019;9(1):123–8.
22. Quek TTC, Tam WWS, Tran BX, Zhang M, Zhang Z, Ho CSH, et al. The Global Prevalence of Anxiety among Medical Students: A Meta-Analysis. Int J

Environ Res Public Health. 2019;16(2735):1–18.
23. Sandra, Lesmana CBJ, Aryani LNA, Wardani IAK. Mekanisme Koping Maladaptif Berkaitan dengan Proporsi Kecemasan: Studi Potong Lintang pada Mahasiswa Pendidikan Dokter. J Med Udayana. 2022;11(4):79–87.
24. Devi KAT, Sumadewi KT, Arsana IWE. Hubungan Adiksi Internet dengan Depresi dan Kecemasan pada Mahasiswa Fakultas Kedokteran dan Ilmu Kesehatan Universitas Warmadewa Angkatan 2018 dan 2019. Aesculapius Med J. 2022;2(3):181–7.
25. Gisela E, Chris A. Hubungan Adiksi Internet dan Kecemasan pada Mahasiswa Fakultas Kedokteran Universitas Tarumanagara Angkatan 2017. Tarumanagara Med J. 2020;2(1):41–6.
26. Seo EH, Kim SG, Lee SK, Park SC, Yoon HJ. Internet Addiction and Its Associations with Clinical and Psychosocial Factors in Medical Students. Psychiatry Investig. 2021;18(5):408–16.
27. Haroon MZ, Zeb Z, Javed Z, Awan Z, Aftab Z, Talat W. Internet Addiction in Medical Students. J Ayub Med Coll Abbottabad. 2018;30(4):659–63.
28. Demak IPK, Suherman. Hubungan Umur, Jenis Kelamin Mahasiswa dan Pendapatan Orang Tua dengan Tingkat Kecemasan pada Mahasiswa Pendidikan Sarjana Program Studi Pendidikan Dokter FKIK Universitas Tadulako. Med TADULAKO, J Ilm Kedokt [Internet]. 2016;3(1):23–32. Available from: http://jurnal.untad.ac.id/jurnal/index.php/MedikaTadulako/article/view/8025
29. Wijaya AA, Sugiharto H, Zulkarnain M. Hubungan Kecemasan dengan Nyeri Kepala Tipe Tegang pada Mahasiswa Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Sriwijaya Angkatan 2013. Sriwij J Med. 2019;2(1):7–13.