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# A Cross-Sectional Study on Internet Addiction and Social Connectedness Among Medical Undergraduate Students at University of Cyberjaya.

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**ABSTRACT**

In 1995, Dr. Ivan Goldberg proposed the term "internet addiction" and it was defined as pathological compulsive use of internet. Internet addiction affects the quality of relationships in students' lives. Students tend to lose their interest in socializing and interacting with people when they are addicted to the internet. According to a descriptive study, restriction of the relationship of students with their friends and family members is the main factor of social connectedness weakening. The objective of this study was to determine the association between internet addiction and social connectedness among medical students aged 18 years and above in the University of Cyberjaya (UOC). A cross-sectional online survey was conducted by delivering a google form to medical students of University of Cyberjaya (UOC) through multiple electronic platform. Majority of the respondents (77%) were not internet addicted where most of them are from Year 3 to Year 5 medical students (42.8%). About 68.4% of socially connected respondents were not internet addicted with a significant p value of 0.011 ($p<0.05$). Furthermore, 45.4% of respondents without social anxiety were not addicted to the internet. Overall, our research shows there is no significant number of medical undergraduates from the University of Cyberjaya addicted to the internet, and there is no significant impact on social connectedness and social anxiety.

**Keywords**: Internet addiction, Medical Undergraduates, Social connectedness, Social anxiety, University of Cyberjaya.

## INTRODUCTION

The internet is known as the largest communication network that connects computers worldwide. It allows people, especially students, to share a variety of data from anywhere when connected to the internet. Before the invention of the internet, access to study materials was found to be limited in those days where the students could only rely on textbooks and face-to-face learning by physically present to the institutions. In those days, the education system has transformed a lot of students into successful people. Nowadays, the internet plays a major role in students' lives where it is easier for their growth and

development. However, there are advantages and disadvantages when it comes to internet use. One of the common negative effects of internet use is internet addiction. In 1995, Dr. Ivan Goldberg proposed the term "internet addiction" and it was defined as pathological compulsive use of internet.

Unfortunately, internet addiction affects the quality of relationships in students' lives. Students tend to lose their interest in socializing and interacting with people when they are addicted to the internet. According to a descriptive study, restriction of the relationship of students with their friends and family members is the main factor of social connectedness weakening.

Moreover, the outbreak of Coronavirus Disease 2019 (COVID-19) has significantly deranged normal activities of people including students. It can be clearly seen that during the current COVID-19 pandemic, many institutions including private and government universities have deferred the regular face-to-face classes and replaced them with online classes and video lectures in which health education is one of them that are very difficult and challenging. Medical school is demanding and in addition to anxiety and depression associated with these significant changes, the loneliness associated with limited social interaction can negatively impact medical students' cognitive function and learning. This leads the medical students to exceed the screen time and duration of internet use and eventually get addicted to the internet. Moreover, the poor academic performance of medical students resulting from internet addiction is a true fact that cannot be denied. Studies in Hong Kong and China have shown that during the COVID 19 pandemic, uncertainties in various academic activities such as exams, exchange programs, and graduations have increased students' stress and anxiety. [29] Hence, our research helps us to determine the association between internet addiction and social connectedness among medical students at University of Cyberjaya. It is particularly significant because the quality of medical students' lives seems to be affected because of internet addiction.

Therefore, this is a cross-sectional study that is aimed to evaluate the prevalence of internet addiction and its association with social connectedness, to relate the sociodemographic factors with the level of internet addiction and to evaluate the association between internet addiction and social anxiety among medical students at University of Cyberjaya.

## METHODOLOGIES

This is a cross-sectional study to measure the prevalence of internet addiction and its association between social connectedness and social anxiety respectively among medical undergraduates at University of Cyberjaya, Malaysia. Local and international medical undergraduate students at University of Cyberjaya (aged 18 and older) who could read and understand the English questionnaire considered eligible to take part in this online survey.This questionnaire had three (4) sections that asked about sociodemographic characteristics, measure level of internet addiction, evaluate social connectedness and access severity of social anxiety among medical undergraduates. Sampling method used is convenience sampling by recruiting responses via an online questionnaire. Instrument used is a validated questionnaire where respondents are required to fill in the sociodemographic data, Internet Addiction Test consists of 20 questions, Revised-Social Connectedness Scale (R-SCS) comprised of 20 items and DSM-5 Social Anxiety Disorder Severity Scale (SAD-D consists of 10-item scale. The questionnaire was divided into three(4) sections:

**Section 1: Sociodemographic characteristics**

This section consists of 8 items of sociodemographic variables which include age, gender, ethnicity, marital status, financial status, living situation, academic year and academic sponsorship.

**Section 2: Internet Addiction**

Internet Addiction Test consists of 20 questions to measure the level of internet addiction in medical students of the University of Cyberjaya. The answers will be recorded using a 5-point Likert scale: 1 (rarely), 2 (occasionally), 3 (frequently), 4 (often), and 5 (always). reflecting the frequency of the symptoms. The possible total score of the IAT ranges from 20 to 100.

**Section 3: Social Connectedness**

Revised-Social Connectedness Scale (R-SCS) was used which comprised of 20 items to evaluate the social connectedness of the medical students in the University of Cyberjaya. Ten items are negatively worded while the remaining are positively worded. Sample items include "I don't feel I participate with anyone or any group" and "I am in tune with the world." Negatively worded items are reverse scored so that a higher score indicates a greater degree of social connectedness. The SCS-R uses a 6-point rating scale (1 = strongly disagree to 6 = strongly agree).

**Section 4: Social Anxiety**

DSM-5 Social Anxiety Disorder Severity Scale (SAD-D) was used which consists of 10-item scale assesses severity of social anxiety of the medical students in the University of Cyberjaya. Respondents rate how frequently they have experienced each symptom in social situations over the past week on a 5-point scale on which a rating of 0 indicates 'Never' and a rating of 4 indicates 'All of the time'. Scores range from 0 to 40, with higher scores indicating greater severity (Rice et al., 2021). The average total score reduces the overall score to a 5-point scale, which allows to measure the severity of the individual's social anxiety disorder (social phobia) in terms of none (0), mild (1), moderate (2), severe (3), or extreme (4).

**Statistical Analysis**

To determine the prevalence of internet addiction among medical students in University of Cyberjaya, the association between internet addiction and social connectedness, the relationship between sociodemographic factors and internet addiction and its association with social anxiety among medical students at University of Cyberjaya was analyzed using Jeffrey's Amazing Statistics Program (JASP) software. Chi-square test was used to relate the sociodemographic variables such as age, gender, ethnicity, marital status, financial status, living situation, academic year and academic sponsorship with internet addiction. Chi Square test was also used to determine the association of internet addiction with social connectedness and social anxiety separately. A correlation analysis was used to determine the strength, direction and significance of relations between variables. A p-value of 0.05 or lower was considered statistically significant. The factors that were significant in the data were shown as crude and adjusted odd ratios (OR), along with their respective p values, 95% confidence intervals (CI), and 95% confidence limit (CI).

**Ethic Approval**

Ethical approval for this study was obtained from the University of Cyberjaya Research Ethics Review Committee (CRERC). (Ref No: UOC/CRERC/AL-ER (46/2022)). Data privacy and confidentiality was maintained, and the data collected were analyzed by the researchers purely for the purpose of the study.

**RESULTS AND DISCUSSION**

**Table 4.1 Social demographic factors**

| Sociodemographic Variables | n | % |
|---|---|---|
| **Age** | | |
| 18 - 22 | 101 | 66.4 |
| 23 - 27 | 46 | 30.3 |
| 28 - 31 | 5 | 3.3 |
| **Academic Year** | | |
| Y1 - Y2 | 61 | 40.1 |
| Y3 -Y5 | 91 | 59.9 |
| **Gender** | | |
| Male | 41 | 27.0 |
| Female | 111 | 73.0 |
| **Nationality** | | |
| International | 19 | 12.5 |
| Local | 133 | 87.5 |
| **Ethnicity** | | |
| Malay | 50 | 32.9 |
| Chinese | 12 | 7.9 |
| Indian | 78 | 51.3 |
| Others | 12 | 7.9 |
| **Marital Status** | | |
| Single | 149 | 98.0 |
| Married | 3 | 2.0 |
| **Financial Status** | | |
| B40 (RM1200-RM4849) | 65 | 42.8 |
| M40 (RM4850-RM10969) | 66 | 43.4 |
| T20 (≥RM10970) | 21 | 13.8 |
| **Living Environment** | | |
| With roommates | 68 | 44.7 |
| Alone | 24 | 15.8 |
| With family | 60 | 39.5 |
| **Smoking Status** | | |
| Never smoked | 143 | 94.1 |
| Ex-Smoker | 6 | 3.9 |
| Smoker | 3 | 2.0 |
| **TOTAL** | **152** | **100** |

Table 4.1 shows majority of the respondents were aged between 18 to 22 years old (66.4%), Year 3 to Year 5 students (59.9%), female gender (73%), local (87.5%), Indian (51.3%), single (98.0%), in medium financial status (43.4%), living with roommates (44.7%) and never smoked (94.1%).

**Table 4.2 Sociodemographic factors and Internet addiction**

| Sociodemographic Variables | Internet addiction status | | Total n (%) | Statistical test | |
|---|---|---|---|---|---|
| | Not internet addicted n (%) | Internet addicted n (%) | | $\chi 2$ (df) | P-value |
| **Age** | | | | 2.295 (2) | 0.317 |
| 18 - 22 | 79 (52.0) | 22 (14.5) | 101 (66.4) | | |
| 23 - 27 | 33 (21.7) | 13 (8.6) | 46 (30.3) | | |
| 28 - 31 | 5 (3.3) | 0 (0.0) | 5 (3.3) | | |
| **Academic Year** | | | | 3.934 (1) | 0.047 |
| Y1 - Y2 | 52 (34.2) | 9 (5.9) | 61 (40.1) | | |
| Y3 -Y5 | 65 (42.8) | 26 (17.1) | 91 (59.9) | | |
| **Gender** | | | | 2.387 (1) | 0.122 |
| Male | 28 (18.4) | 13 (8.6) | 41 (27.0) | | |
| Female | 89 (58.5) | 22 (14.5) | 111 (73.0) | | |
| **Nationality** | | | | 0.896 (1) | 0.344 |
| International | 13 (8.5) | 6 (4.0) | 19 (12.5) | | |
| Local | 104 (68.4) | 29 (19.1) | 133 (87.5) | | |
| **Ethnicity** | | | | 3.174 (3) | 0.366 |
| Malay | 35 (23.0) | 15 (9.9) | 50 (32.9) | | |
| Chinese | 11 (7.2) | 1 (0.7) | 12 (7.9) | | |
| Indian | 61 (40.1) | 17 (11.2) | 78 (51.3) | | |
| Others | 10 (6.6) | 2 (1.3) | 12 (7.9) | | |
| **Marital Status** | | | | | |
| Single | 115 (75.6) | 34 (22.4) | 149 (98.0) | | |
| Married | 2 (1.3) | 1 (0.7) | 3 (2.0) | 0.183 (1) | 0.668 |
| **Financial Status** | | | | | |
| B40 (RM1200-RM4849) | 50 (32.9) | 15 (9.9) | 65 (42.8) | | |
| M40 (RM4850-RM10969) | 49 (32.2) | 17 (11.2) | 66 (43.4) | | |
| T20 (≥RM10970) | 18 (11.8) | 3 (2.0) | 21 (13.8) | 1.183 (2) | 0.553 |
| **Living Environment** | | | | | |
| With roomates | 48 (31.6) | 20 (13.1) | 68 (44.7) | | |
| Alone | 20 (13.2) | 4 (2.6) | 24 (15.8) | | |
| With family | 49 (32.2) | 11 (7.2) | 60 (39.4) | 2.858 (2) | 0.240 |
| **Smoking Status** | | | | 2.020 (2) | 0.364 |

| | | | | | |
|---|---|---|---|---|---|
| Never smoked | 109 (71.7) | 34 (22.4) | 143 (94.1) | | |
| Ex-Smoker | 6 (3.9) | 0 (0.0) | 6 (3.9) | | |
| Smoker | 2 (1.3) | 1 (0.7) | 3 (2.0) | | |

Table 4.2 shows 42.8% of respondents from Year 3 to Year 5 were not internet addicted with a significant p value of 0.047 (p<0.05).

**Table 4.3 Prevalence of internet addiction**

| Variable | n | % |
|---|---|---|
| Internet Addiction | | |
| Yes | 35 | 23.0 |
| No | 117 | 77.0 |
| Total | 152 | 100 |

Table 4.3 shows 23.0% of respondents were internet addicted and 77.0% of respondents were not internet addicted.

**Table 4.4 Association between Internet addiction and Social connectedness**

| Status of social connectedness | Not internet addicted | | Internet addicted | | Total n (%) | Statistical Test | |
|---|---|---|---|---|---|---|---|
| | n | % | n | % | | $\chi 2$ (df) | P-value |
| **Social connected** | 104 | 68.4 | 25 | 16.4 | 129 (84.9) | 6.4 (1) | 0.011 |
| **Not social connected** | 13 | 8.6 | 10 | 6.6 | 23 (15.1) | | |
| **Total** | 117 | 77.0 | 35 | 23.0 | 152 (100) | | |

Table 4.4 shows 68.4% of social connected respondents were not internet addicted with a significant p value of 0.011 (p<0.05).

**Table 4.5 Association between Internet addiction and Social anxiety**

| Status of social anxiety | Not internet addicted | | Internet addicted | | Total n (%) | Statistical Test | |
|---|---|---|---|---|---|---|---|
| | n | % | n | % | | $\chi 2$ (df) | P-value |
| **No social anxiety** | 69 | 45.4 | 11 | 7.2 | 80 (52.6) | 8.2 (1) | 0.004 |
| **Social anxiety** | 48 | 31.6 | 24 | 15.8 | 72 (47.4) | | |
| **Total** | 117 | 77.0 | 35 | 23.0 | 152 (100) | | |

Table 4.5 shows 45.4% of no social anxiety respondents were not internet addicted with a significant p value of 0.004 (p<0.05).

**Prevalence of internet addiction**

The prevalence of internet addiction among the medical students in University of Cyberjaya was found to be 23 %. The findings indicate that approximately one out of four medical students in University of Cyberjaya are addicted to the internet. The prevalence can be supported with a similar study which was conducted among International Islamic University Malaysia (IIUM) undergraduate medical students and found that internet addiction was prevalent in 22.8% of the sample. Surprisingly, the prevalence was lower compared to other literature regarding medical students. Ching et al. (8) a study conducted among the medical students in UPM reported that the internet addiction prevalence among medical students was 36.9% which is higher than the current study. Notably another research on a group of medical students in National Defense University of Malaysia harvested a result of 98.2% were addicted to the internet ranging from mild to severe. However , a study conducted among medical students of University Sains Malaysia (USM) estimated lower prevalence as the overall prevalence of internet addiction among medical students was 6.7% .The reasons for these variations in prevalence rates could be the heterogeneity of the subject population, difference in diagnostic methodology, the influence of confounding factors such as stress and psychological comorbidity and differences in social, cultural and technological factors such as the rate of global Internet access in a specific country, the use of the Internet in academic activities etc.

It was established in this study that there is a statistically significant difference in the addiction score between males and females. The prevalence of Internet addiction among female medical students (14.5%) were higher compared to male medical students (8.60%) which highly contrast many of previous studies conducted among medical students in Malaysia. For instance, a study conducted among the undergraduate medical students of National Defence University revealed males (56.2%) having higher prevalence of Internet addiction compared to female (43.8%)().Another study conducted among a group of medical students in UPM reported that about 45% of male respondents were internet addicts compared to the 32% of female respondents(). however , surprisingly a study conducted among the second to fifth year medical students in USM had similar results with female students (73.6%)were more predominantly addicted to the internet than male students (26.4%)()it was observed that preclinical respondents (Y1-Y2) had less addiction compared to clinical year students (Y3-Y5). This may be due the fact that clinical year students will require more internet usage to prepare for university exams which is significantly more challenging than preclinical syllables.

**Relationship between Internet Addiction and Social Connectedness**

This study showed that there is a notable association between internet addiction and social connectedness among the respondents. The individuals who reported being socially connected were more likely to be not addicted to the internet. Conversely, a smaller proportion of socially connected individuals reported internet addiction. This may suggest that active engagement in offline social activities and relationships may serve as a protective factor against excessive internet use. The statistically significant relationship between internet addiction and social connectedness underscores the importance of addressing both issues in interventions and support programs. Educational institutions and mental health professionals can use these findings to design targeted interventions to promote healthy internet use and foster meaningful offline social connections. However, in a previous study, social connectedness was negatively related with internet addiction ($r=-0.34$, $p<0.01$). Real social environments, loneliness, peer groups and friendship, communication skills, socialization tendencies,

intimate relationships, and personality traits can explain the effects of internet addiction, social media addiction, digital game addiction, and smartphone addiction on social connectedness (Savci & Aysan, 2017). Another study reported that internet addiction has been identified as a significant factor responsible for the deterioration of an individual's social functioning and their potential isolation from a social perspective (Savci & Aysan 2019). In conclusion, further research is required to understand the underlying mechanisms driving this relationship and to implement more effective interventions to address internet addiction and enhance social connectedness in various populations.

**Relationship between Social Anxiety and Internet Addiction**

In this study, the individuals who reported experiencing no social anxiety were more likely to be not addicted to the internet. The higher percentage of individuals with no social anxiety being not internet addicted suggests that social anxiety might act as a protective factor against excessive internet use. Conversely, a smaller proportion of individuals with no social anxiety reported internet addiction. This raises questions about whether internet addiction might exacerbate social anxiety symptoms or serve as a coping mechanism. Individuals with higher social anxiety may be less inclined to engage in extensive online activities and prefer offline interactions. In a cross-sectional study conducted in Karpaga Vinayaga Institute of Medical Sciences, among the participants who were addicted to the internet, 52.5% were identified as experiencing social phobia, and this association was found to be statistically significant. Individuals with internet addiction were observed to have a threefold higher risk of developing social phobia compared to those without internet addiction. Among the medical students who took part in a study conducted in Monastir, Tunisia, 21.8% exhibited a significant association between social anxiety and internet addiction. A study revealed a positive, mild ($\gamma = .308$, $p < .001$), correlation between internet addiction and anxiety. These findings suggest that excessive internet use leads to addiction, subsequently contributing to anxiety and stress among users. Moreover, the results indicate that higher levels of internet addiction are associated with increased psychological distress (Azher et. al, 2014).

## CONCLUSION

The study suggests that internet addiction is a significant issue among medical students at the University of Cyberjaya, with a prevalence of 23%. It is worth noting that the prevalence of internet addiction is higher among female medical students (14.5%) compared to male medical students (8.60%), which contrasts with previous studies conducted among medical students in Malaysia. The study also indicates that social connectedness and lack of social anxiety may play important roles in preventing internet addiction. Students who reported being socially connected were more likely to be not addicted to the internet. This suggests that engaging in offline social activities and having healthy relationships may act as protective factors against excessive internet use.

Similarly, the results show that individuals who reported experiencing no social anxiety were less likely to be addicted to the internet. This suggests that social anxiety may contribute to shaping individuals' internet use habits, with those who experience social anxiety being more prone to internet addiction. The implications of these findings are significant, as they can be utilized to develop strategies aimed at promoting balanced internet usage among medical students and addressing the impact of internet addiction on individuals with social anxiety. Implementing programs that encourage students to engage

in offline social activities and develop strong social connections may help reduce internet addiction rates. Additionally, providing support and resources to students who experience social anxiety could be beneficial in preventing and managing internet addiction. It's important to acknowledge that internet addiction can have adverse effects on academic performance, mental health, and overall well-being. By understanding the factors associated with internet addiction, universities and educational institutions can implement targeted interventions to support students and promote healthy internet habits.

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**REFERENCES**

1. Suvvari, T. K., Kutikuppala, L., Tsagkaris, C., Corriero, A. C., & Kandi, V. (2021). Post-COVID-19 complications: Multisystemic approach. *Journal of medical virology*, *93*(12), 6451–6455.https://doi.org/10.1002/jmv.27222
2. Ansari, F. H., Ismail, M. A. A., Yusoff, M. S. B., & Fadzil, N. A. (2022). Prevalence of Internet Addiction and Its Relationship with Psychological Distress among Medical Students in a Malaysian Public University. Education in Medicine Journal, 14(3). https://eduimed.usm.my/EIMJ20221403/EIMJ20221403_02.pdf
3. Abdel-Salam, D. M., Alrowaili, H. I., Albedaiwi, H. K., Alessa, A. I., & Alfayyadh, H. A.(2019). Prevalence of Internet addiction and its associated factors among female students at Jouf University, Saudi Arabia. Journal of the Egyptian Public Health Association, 94(1), 1-8.https://jepha.springeropen.com/articles/10.1186/s42506-019-0009-6
4. Ali, R., Mohammed, N., & Aly, H. (2017). Internet addiction among medical students ofSohag University, Egypt. Journal of Egyptian Public Health Association, 92(2), 86-95.https://epx.journals.ekb.eg/article_11248.html
5. American Psychiatric Association. (2013). DSM 5 diagnostic and statistical manual of mental disorders. In DSM 5 Diagnostic and statistical manual of mental disorders (pp. 947-p).https://pesquisa.bvsalud.org/portal/resource/pt/psa-52826

6. Capanna, C., Stratta, P., Collazzoni, A., D'Ubaldo, V., Pacifico, R., Di Emidio, G., ... &Rossi, A. (2013). Social connectedness as resource of resilience: Italian validation of the Social Connectedness Scale-Revised. Journal of Psychopathology, 19, 320-326. https://www.jpsychopathol.it/wp-content/uploads/2015/07/SOPSI-4-13.pdf#page=40
7. Chaudhari, B., Menon, P., Saldanha, D., Tewari, A., & Bhattacharya, L. (2015). Internetaddiction and its determinants among medical students. Industrial psychiatry journal, 24(2), 158. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4866343/
8. Chen, L. J., & Chung, S. K. (2007). Loneliness, social connectedness, and family income among undergraduate females and males in Taiwan. Social Behavior and Personality: an internationaljournal, 35(10), 1353-1364.https://www.ingentaconnect.com/content/sbp/sbp/2007/00000035/00000010/art00007
9. Ching, S. M., Hamidin, A., Vasudevan, R., Sazlyna, M. S., Wan Aliaa, W. S., Foo, Y. L.,& Hoo, F. K. (2017). Prevalence and factors associated with internet addiction among medical students-A cross-sectional study in Malaysia.Med J Malaysia, 72(1), 7.http://www.e-mjm.org/2017/v72n1/internet-addiction.pdf
10. Ching, S. M., Yee, A., Ramachandran, V., Sazlly Lim, S. M., Wan Sulaiman, W. A., Foo, Y. L., & Hoo, F. K. (2015). Validation of a Malay version of the smartphone addiction scale among medical students in Malaysia. PloS one, 10(10), e0139337.https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0139337
11. Department of Statistics Malaysia. (2020, September). Key Statistics of Labour Force inMalaysia.https://www.dosm.gov.my/v1/index.php=column/cthemeByCat&cat=124&bul_id=Z0M1dy9sQjYrMXBTNVpEVE5HVWt5Zz09&menu_id=Tm8zcnRjdVRNWWlpWjRlbmtlaDk1UT09
12. Gedam, S., Goyal, A., Mod, L., Babar, V., & Patond, S. K. (2016). A study Internetaddiction among medical students from central India. J Datta Meghe Institute Med Sci, 2(2), 233-8. https://www.researchgate.net/profile/Sachin-Gedam/publication/320126125_A_Study_Internet_Addiction_Among_Medical_Students_from_Central_India/links/59cf3be4a6fdcc181ac2965a/A-Study-Internet-Addiction-Among-Medical-Students-from-Central-India.pdf
13. Ghamari, F., Mohammadbeigi, A., Mohammadsalehi, N., & Hashiani, A. A. (2011).Internet addiction and modeling its risk factors in medical students, Iran.Indian journal of psychological medicine, 33(2), 158-162.https://journals.sagepub.com/doi/pdf/10.4103/0253-7176.92068
14. Gupta, R., Taneja, N., Anand, T., Gupta, A., Gupta, R., Jha, D., & Singh, S. (2021).Internet addiction, sleep quality and depressive symptoms amongst medical students in Delhi, India. Community mental health journal, 57(4), 771-776. https://link.springer.com/article/10.1007/s10597-020-00697-2
15. Haque, M., Rahman, N. A. A., Majumder, M. A. A., Haque, S. Z., Kamal, Z. M., Islam,Z., ... & Alattraqchi, A. G. (2016). Internet use and addiction among medical students of Universiti Sultan Zainal Abidin, Malaysia. Psychology research and behavior management, 9, 297.https://www.ncbi.nlm.nih.gov/pmc/articles/pmc5115623/
16. Ismail, N., Tajjudin, A. I., Jaafar, H., Nik Jaafar, N. R., Baharudin, A., & Ibrahim, N. (2021). The Relationship between Internet Addiction, Internet Gaming and Anxiety among Medical Students in a Malaysian Public University during COVID-19 Pandemic. International Journal of Environmental Research and Public Health, 18(22), 11870. https://doi.org/10.3390/ijerph182211870

17. Jaiswal, A., Manchanda, S., Gautam, V., Goel, A. D., Aneja, J., & Raghav, P. R. (2020). Burden of internet addiction, social anxiety and social phobia among University students, India. Journal of Family Medicine and Primary Care, 9(7), 3607.https://www.ncbi.nlm.nih.gov/pmc/articles/pmc7567262/
18. Li, L., Xu, D. D., Chai, J. X., Wang, D., Li, L., Zhang, L., ... & Xiang, Y. T. (2018). Prevalence of Internet addiction disorder in Chinese university students: A comprehensive meta- analysis of observational studies. Journal of behavioral addictions, 7(3), 610-623.https://akjournals.com/view/journals/2006/7/3/article-p610.xml
19. Lin, M. P. (2020). Prevalence of internet addiction during the COVID-19 outbreak and itsrisk factors among junior high school students in Taiwan. Internationaljournal of environmental research and public health, 17(22), 8547.https://www.mdpi.com/893872
20. Lozano-Blasco, R., Robres, A. Q., & Sánchez, A. S. (2022). Internet addiction in youngadults: A meta-analysis and systematic review. Computers in Human Behavior, 107201 https://www.sciencedirect.com/science/article/pii/S0747563222000231
21. Moslehpour, M., & Batjargal, U. (2013). Factors influencing internet addiction amongadolescents of Malaysia and Mongolia. Jurnal Administrasi Bisnis, 9(2).https://journal.unpar.ac.id/index.php/JurnalAdministrasiBisnis/article/view/1206/1179
22. Patil, S. D., Deshmukh, J. S., & Dagdiya, K. R. (2017). Prevalence and pattern of internet addiction among medical students in Nagpur, Maharashtra. Int J Community Med Public Health, 4,2412-2416.https://www.researchgate.net/profile/Jyotsna-Deshmukh/publication/317866230_Prevalence_and_pattern_of_internet_addiction_among_medical_students_in_Nagpur_Maharashtra/links/5a72e1eaa6fdcc53fe132656/Prevalence-and-pattern-of-internet-addiction-among-medical-students-in-Nagpur-Maharashtra.pdf
23. Pontes, H. M., Szabo, A., & Griffiths, M. D. (2015). The impact of Internet-basedspecific activities on the perceptions of Internet addiction, quality of life,and excessive usage: A cross-sectional study. Addictive Behaviors Report, 1, 19-25.https://www.sciencedirect.com/science/article/pii/S2352853215000061
24. Radeef, Ali Sab ri & Faisal, Ghasak Ghazi. (2018) Prevalence of Internet addiction and its association with depression, anxiety and stress among medical students in Malaysia. Mediterranean Journal of Clinical Psychology, 6 (3). pp. 1-17. ISSN 2282-1619
25. Rosliza, A. M., Ragubathi, M. N., MKA, M. Y., & Shaharuddin, M. S. (2018). Internet addiction among undergraduate students: Evidence from a Malaysian public university. IIUM Medical Journal Malaysia, 17(2). https://journals.iium.edu.my/kom/index.php/imjm/article/view/270
26. Salici, O. (2020). University Students' Internet Addiction Levels Under Various Variables. European Journal of Educational Sciences, 7(3), 109-122.https://www.ceeol.com/search/article-detail?id=907708
27. Sayyah, M., & Khanafereh, S. (2019). Prevalence of internet addiction among medical students: a study from southwestern Iran. Central European journal of public =health, 27(4), 326-329.https://cejph.szu.cz/pdfs/cjp/2019/04/10.pdf
28. Savci, M., & Aysan, F. (2017). Technological addictions and social connectedness:predictor effect of internet addiction, social media addiction, digital game addiction and smartphone addiction on social connectedness. Dusunen Adam:Journal of Psychiatry & Neurological Sciences, 30(3), 202-216. https://arsiv.dusunenadamdergisi.org/ing/Articledetails09b6.html?MkID=1192

29. Sgery, a. S. H., & Agha, s. Y. S. (2020). Internet addiction and cigarette smoking among students of medical colleges in duhok. Duhok medical journal, 14(2), 64-72.https://dmj.uod.ac/index.php/dmj/article/view/135
30. Siste, K., Hanafi, E., Sen, L. T., Murtani, B. J., Christian, H., Limawan, A. P., & Siswidiani, L. P. (2021). Implications of COVID-19 and lockdown on internet addiction among adolescents: Data from a developing country. Frontiersin psychiatry, 12https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8153226/
31. Subhaprada, C. S., & Kalyani, P. (2017). A cross-sectional study on internet addiction among medical students. Int J Comm Med Pub Health, 4(3), 670-https://www.academia.edu/download/54639307/1116-3924-1-PB-IAT.pdf
32. Sultan, S., Hussain, I., & Fatima, S. (2020). Social Connectedness, Life Contentment, and Learning Achievement of Undergraduate University Students--Does the Use of Internet Matter?. Bulletin of Education and Research, 42(1), 111-125.https://eric.ed.gov/?id=EJ1258052
33. Taha, M. H., Shehzad, K., Alamro, A. S., & Wadi, M. (2019). Internet use and addiction among medical students in Qassim University, Saudi Arabia. Sultan Qaboos University Medical Journal, 19(2), e142.https://www.ncbi.nlm.nih.gov/pmc/articles/pmc6736271/
34. Umeta, G. T., Regasa, S. D., Taye, G. M., Ayeno, H. D., & Tefera, G. M. (2022). Prevalence of Internet Addiction and its Correlates Among RegularUndergraduate Medicine andHealth Science Students at Ambo University. Cross-Sectional Study. Substance Abuse:Research and Treatment, 16,11782218221080772.https://journals.sagepub.com/doi/abs/10.1177/11782218221080772
35. Vidyachathoth, K. B., Kumar, N. A., & Pai, S. R. (2014). Correlation between affect andinternet addiction in undergraduate medical students in Mangalore. Journal of Addiction Research & Therapy, 5(1), 1-4.https://www.researchgate.net/profile/Nayanatara-Kumar/publication/264836134_Correlation_between_Affect_and_Internet_Addiction_in_Undergraduate_Medical_Students_in_Mangalore/links/5834033e08ae102f073699d2/Correlation-between-Affect-and-Internet-Addiction-in-Undergraduate-Medical-Students-in-Mangalore.pdf
36. Yücens, B., & Üzer, A. (2018). The relationship between internet addiction, socialanxiety, impulsivity, self-esteem, and depression in a sample of Turkish undergraduate medical students. Psychiatry research, 267, 313-318.https://www.sciencedirect.com/science/article/pii/S0165178118306127
37. Zhang, M. W., Lim, R. B., Lee, C., & Ho, R. (2018). Prevalence of internet addiction in medical students: a meta-analysis. Academic Psychiatry, 42(1), 88-93.https://link.springer.com/article/10.1007/s40596-017-0794-1