

The Impact of TikTok Addiction on Depression, Anxiety and Stress Severity among University Students

Nur Shafira Izzatie Mohd Nor Shokri¹, Tarek M Elsayed² & Abdul Rahman Fata Nahas^{3*}

¹Kulliyyah of Pharmacy, International Islamic University Malaysia, Pahang, Malaysia

²Faculty of Pharmacy, Sultan Zainal Abidin University, Terengganu, Malaysia

³Department of Pharmacy Practice, Kulliyyah of Pharmacy, International Islamic University Malaysia, Pahang, Malaysia

ABSTRACT

Background: TikTok's personalized content and short video format have contributed to its widespread popularity, particularly among university students. However, these same features make it potentially addictive, raising concerns about its impact on mental health. This study aims to examine the relationship between TikTok addiction and levels of depression, anxiety, and stress among university students in Malaysia.

Methods: A cross-sectional survey was conducted among 402 undergraduate students at IIUM Kuantan Campus using a structured questionnaire comprising socio-demographic items, the TikTok Addiction Scale (TTAS), and the Depression, Anxiety, and Stress Scale (DASS-21). Across different academic disciplines; TTAS differences were tested with one-way ANOVA and DAS score differences with Kruskal-Wallis. Correlation analysis was run using Spearman's correlation. Data were analysed using Jamovi software.

Results: Results indicated that 20.1% (N=81) of participants were classified as TikTok addicted, while the remaining 79.9% (N=321) were not. Most students reported mild to moderate levels of depression and anxiety, with minimal stress; however, some experienced more severe symptoms. A positive correlation was found between TikTok addiction and higher levels of depression, anxiety, and stress. Sociodemographic factors such as gender and academic program showed no significant association with either TikTok addiction or mental health outcomes.

Conclusion: The findings suggest that excessive TikTok use is associated with students' psychological well-being. Efforts from educational institutions, parents, and students themselves are essential to promote balanced usage, potentially reducing mental health risks and supporting academic and personal development.

Keywords: Digital addiction; Malaysia; Mental health; Social media; TikTok; Young adult

*Corresponding author

Abdul Rahman Fata Nahas
Department of Pharmacy Practice,
Kulliyyah of Pharmacy,
International Islamic University Malaysia,
Pahang, Malaysia
E-mail: drabdmfn@gmail.com

Article History:

Submitted: 27 May 2025
Revised: 20 September 2025
Accepted: 20 September 2025
Published: 30 November 2025

DOI: 10.31436/ijcs.v8i3.464
ISSN: 2600-898X

INTRODUCTION

The growing influence of technology has become a key concern in modern psychology, particularly regarding the mixed impacts of social media. Initially intended to enhance communication and connection, social media has evolved into a multifaceted platform for marketing, entertainment, news, and networking (1).

Launched by ByteDance in 2016, TikTok has rapidly become one of the world's most downloaded apps, growing from 55 million users in 2018 to over a billion by 2021. Its swift rise, outpacing platforms like Facebook and Instagram, reflects its effective use of social media growth strategies (2).

TikTok users spend an average of 53.8 minutes per day on the app – more than on YouTube or X – highlighting its high engagement. This is attributed to TikTok's unique features, such as short video creation, duets, and sound effects, which enhance interactivity and entertainment. The platform has also created career opportunities for youth, enabling fame and income generation. However, these same features contribute to a higher risk of addiction, particularly among younger users (3).

Research indicates that social media addiction may mirror the effects of psychoactive substances, negatively impacting mental health, self-esteem, and academic performance (4). TikTok's personalized content algorithm intensifies this risk by promoting excessive, time-consuming use, which can lead to withdrawal symptoms, psychological distress, academic challenges, and reduced quality of life and well-being (5).

In the U.S., 25% of TikTok's weekly active users are aged 20–29, with mental illness most prevalent (36.2%) among those aged 18–25 (6). University students in this group often face academic, financial, and social pressures, further heightening their vulnerability. A study on Malaysian nursing students found a link between social media addiction and mental health problems, but it did not isolate TikTok's specific effects or consider other academic disciplines (7).

As disciplinary situations have a certain impact on digital behaviour and a

predisposition to problematic use, it is necessary to contrast different academic domains when studying TikTok addiction. The workload imbalances, such as those regarding medicine or pharmacy, specifically influence stress and time management; learners in an occupation that demands a significant workload often report that they use social media and have higher levels of stress (8,9). Meanwhile, professions with a high degree of emphasis on creativity or media familiarity may naturalise extended digital use, exposing people to applications like TikTok (10).

Thus, this study aims to investigate the association between TikTok addiction and levels of depression, anxiety, and stress among university students. Additionally, it examines the influence of field of study and gender; particularly whether female students are more susceptible to these mental health impacts.

METHODS

A cross-sectional study was conducted between October and November 2024 among undergraduate students at the International Islamic University Malaysia (IIUM) Kuantan campus, which encompasses six colleges; Medicine (KOM), Dentistry (KOD), Pharmacy (KOP), Nursing (KON), Allied Health Science (KAHS) and Science (KOS). Eligible participants were Malaysian undergraduates aged 18 or older, proficient in English, and had used TikTok for at least three months. Students not meeting these criteria were excluded. Participants were recruited through convenience sampling.

The required sample size, calculated using Raosoft's sample size calculator (11) with a 5% margin of error and 95% confidence level was 354, based on a population of 4,448 Malaysian undergraduates at IIUM.

Data were gathered via a Google Form where its link (URL) was distributed through platforms such as WhatsApp, X, and Instagram. The survey comprised three sections: socio-demographics, the TikTok Addiction Scale (TTAS) (12), and the Depression, Anxiety, and Stress Scale (DASS-21) (13). The 15-item TTAS assessed six core addiction features: salience, conflict, tolerance, relapse, mood modification, and withdrawal. Responses were rated on a 5-point Likert scale

(1 = very rarely to 5 = very often), with a mean cut-off score of 3.23 for addiction.

The DASS-21 measured emotional distress over the past week using 21 items rated on a 4-point scale; ranging from 0 (never applies to me) to 3 (always applies to me); the total score for each emotional state is multiplied by 2. For depression, a score of 0-9 was classified as normal, 10-13 as mild, 14-20 as moderate, 21-27 as severe, and more than 28 as extremely severe. For anxiety, a score of 0-7 was classified as normal, 8-9 as mild, 10-14 as moderate, 15-19 as severe, and more than 20 as extremely severe. Lastly, for stress, a score of 0-14 was classified as minimal, 15-18 as mild, 19-25 as moderate, 26-33 as severe, and a score above 34 as extremely severe.

Data were analyzed using Jamovi version 2.5 (14). Descriptive statistics summarized the data, with frequencies for categorical variables and means for continuous data. Normality was tested using the Kolmogorov-Smirnov test. TTAS scores were normally distributed, allowing for parametric tests (one-way ANOVA, t-test), while DASS-21 scores were not, requiring non-parametric tests (Spearman's correlation, Kruskal-Wallis). A *p*-value of <0.05 was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the IIUM Research Ethics Committee (IREC) under approval number IREC (UG) 2024-060. Informed consent was obtained from all subjects involved in the study.

RESULTS

Sociodemographic

A total of 402 students voluntarily participated in this study. The description of our sample is shown in **Table 1**.

Level of TikTok Addiction

The mean score of TTAS among study participants was 2.58 ± 0.82 . **Figure 1** shows the distribution of participated students based on TikTok addiction levels.

Mental Health Status among the Participants

The mean scores of depression, anxiety and stress in students were 10.7 ± 7.63 , 11.2 ± 10.0 and 9.08 ± 9.02 , respectively. Most participants experience mild to moderate depression or anxiety, and minimal stress, though smaller proportions report more severe mental health issues (**Figures 2, 3 and 4**).

Table 1: Participants' Sociodemographic (N=402)

Variables		Frequency (%)
Gender	Male	177 (44.0)
	Female	225 (56.0)
College	KOS	94 (23.4)
	KAHS	55 (13.7)
	KOP	74 (18.4)
	KOM	75 (18.7)
	KON	65 (16.2)
	KOD	39 (9.7)
Year of study	Year 1	121 (30.1)
	Year 2	85 (21.1)
	Year 3	78 (19.4)
	Year 4	100 (24.9)
	Year 5	18 (4.5)
Time spent on TikTok daily (hours/day)	< 1	55 (13.7)
	1 - 3	225 (56.0)
	4 - 6	98 (24.4)
	> 7	24 (6.0)

KOS: College of Science, KAHS: College of Allied Health Science, KOP: College of Pharmacy, KOM: College of Medicine, KON: College of Nursing, KOD: College of Dentistry.

Figure 1: Level of TikTok Addiction Among Study Participants (N=402)

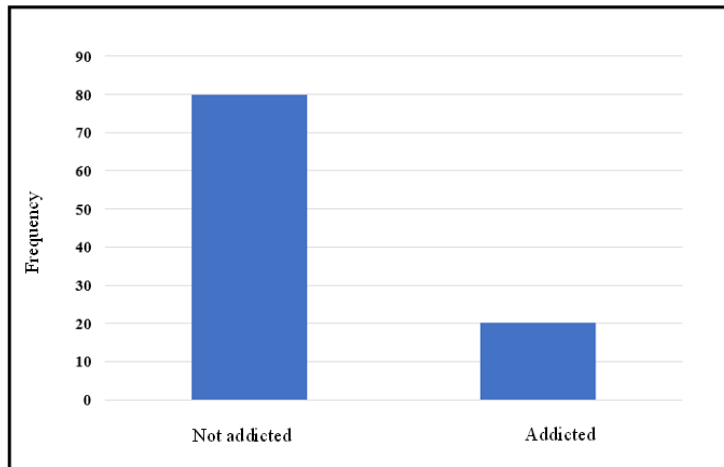


Figure 2: Depression Severity Among Study Participants (N=402)

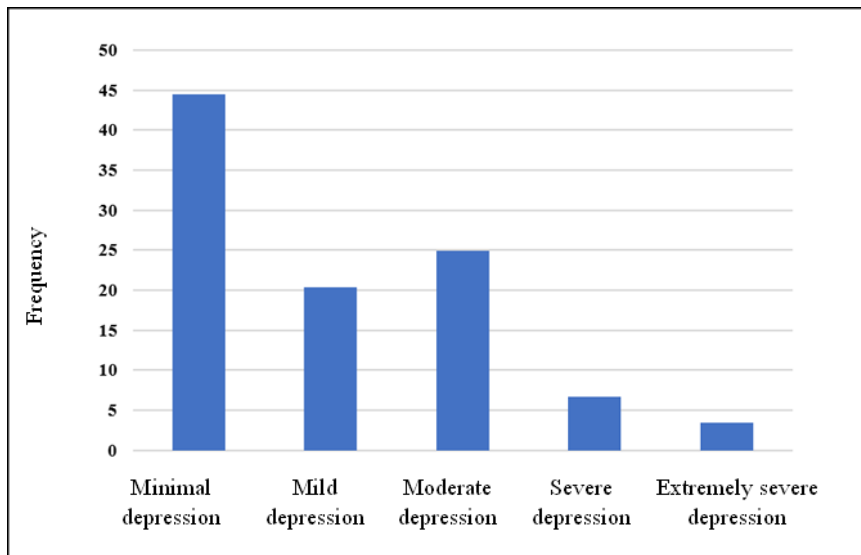


Figure 3: Anxiety Severity Among Study Participants (N=402)

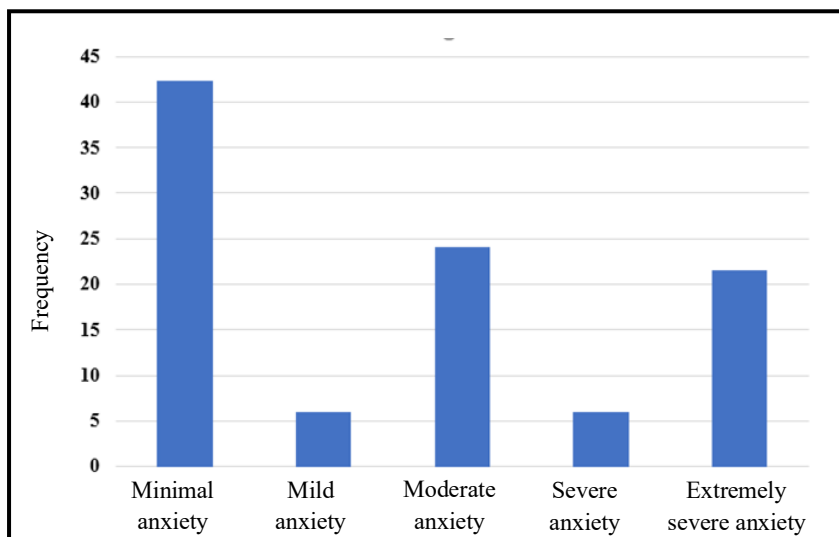
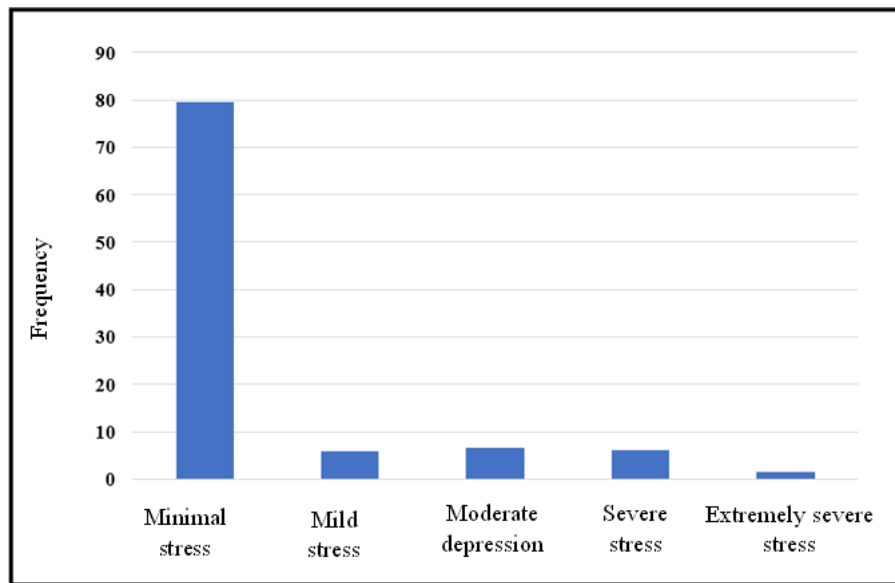


Figure 4: Stress Severity Among Study Participants (N=402)



Relationship Between TikTok Addiction and DAS Severity

Students classified as addicted to TikTok tend to display higher levels of depression, anxiety, and stress compared to those who are not addicted. **Table 2** shows a statistically significant positive relationship between TikTok addiction and DAS severity with moderate correlation.

Differences in TikTok Addiction and DAS Scores across Academic Disciplines

To assess the differences in TikTok addiction across different academic disciplines, a One-

Way ANOVA test was conducted, whereas Kruskal-Wallis test was used to assess the differences in DAS scores across academic disciplines. Our results showed that the course of study did not play a discernible role in influencing the patterns of TikTok usage ($p=0.095$), neither has an impact on DAS severity ($p=0.45$) in the study sample.

Gender Differences in DAS Severity among TikTok-Addicted Students

An Independent Samples T-test revealed no significant gender differences in depression ($p=0.977$), anxiety ($p=0.780$) or stress ($p=0.691$).

Table 2: Correlation Coefficients Values Between TikTok Addiction and DAS Severity Among Study participants

TikTok addiction	Depression (<i>rs</i>)	Anxiety (<i>rs</i>)	Stress (<i>rs</i>)
	0.438	0.395	0.375

DAS: Depression, anxiety and stress. *rs*: Spearman's Rank-order correlation coefficient, * $p<0.001$

DISCUSSION

TikTok Addiction

This study found that most IIUM Kuantan students were not addicted to TikTok, with only 81 out of 402 participants classified as addicted. This suggests that although usage is widespread, many students maintain self-regulation – possibly due to greater maturity

and academic responsibilities. This aligns with previous research indicating that self-control improves with age and serves as a protective factor against mental health issues related to excessive social media use (15). This suggested that university students, due to their developmental stage and academic responsibilities, might have developed better

coping mechanisms and self-regulation skills compared to their younger counterparts.

Mental Health Status

Most students reported mild to moderate levels of depression and anxiety, with minimal stress. However, a subset experienced more severe symptoms. Analysis revealed a mild but positive correlation between TikTok addiction and DAS levels, consistent with existing literature on the psychological risks of digital addiction (16,17). Studies have linked excessive TikTok use to depressive symptoms, harmful content exposure, and procrastination, all of which negatively impact academic performance and mental health. For example, delaying academic assignments and sleep disrupted cognitive functioning, reduced focus during study sessions, and hindered the ability to meet academic expectations. These challenges exacerbated feelings of inadequacy, pressure, and emotional distress, further entrenching the cycle of poor mental health and addictive behaviors (18,19).

Field of Study

No significant differences were observed in TikTok addiction or DAS severity across academic disciplines. This suggests that factors beyond the field of study may influence social media behavior and mental health. For instance, studies showed that people who experience a high level of depression or anxiety tend to be more susceptible to all kinds of addictive actions, which in this case is overuse of social media, which is why the addiction can be a symptom and not a cause (20,21). In addition, social networks such as TikTok can also be used as coping strategies that provide distraction, mood regulation, or social attachment during periods of psychological distress (22,23). This is in line with the results that emotionally disturbed users resort to online resources not only to entertain themselves but also as a means of dealing with loneliness, stress, or negative affect (24). Therefore, the identified relationships could be attributed to the aspects of discipline to a lesser degree and to personal mental conditions that define the manner of TikTok utilization.

Gender Differences

No significant gender-based differences in DAS severity were found among TikTok-addicted students, mirroring some previous research. For instance, Al Shawi and colleagues reported no notable gender-based variations in mental health outcomes associated with social media addiction (25). However, other research suggests gender may influence mental health outcomes related to internet addiction, particularly among adolescents, pointing to the potential influence of cultural and psychological variables (26).

CONCLUSION

TikTok addiction is associated with higher levels of depression, anxiety, and stress among university students. Time management workshops and psychological training programs in risk of social media addiction have been shown to reduce problematic social media behaviours by equipping students with strategies for goal-setting, prioritization, and self-regulation (27). Such proactive strategies by institutions, families, and students could be of importance to support academic success and emotional well-being.

Limitations and Recommendations

The self-administered online survey may have affected data reliability, and the single-institution sample (IIUM Kuantan campus) limits generalizability. Since DASS-21 captures only the past week mental parameters, it may not reflect long-term impact of TikTok addiction. Additionally, unmeasured covariates such as socioeconomic status, GPA, sleep quality, and other social media use may have confounded the findings. Future studies should include more diverse populations and apply methods to enhance response accuracy and validity.

CONFLICT OF INTEREST

The researcher declares that there is no conflict of interests.

FUNDINGS

The author(s) received no financial support for the research, authorship and/or publication of this article.

ACKNOWLEDGMENTS

The researchers would like to thank all students who agreed to participate in this study.

AUTHOR CONTRIBUTIONS

NSIMNS: Data collection, data analysis and initial draft writing.

TME: Revision and final draft writing.

ARFN: Conceptualization, methodology, supervision, revision and final draft writing.

REFERENCES

1. Ma Y, Zhao X, He X, Ren L. The impact of social media on executive functions: Beneficial or harmful?. *Advances in Psychological Science*. 2022;Feb 15;30(2):406.
2. Hanifah K, Anggraeni SB, Sa'adah M, Zahra FA, Marhamah S, Az-Zahra F, Hayati SN, Maryam M, Hidayat F. Critical study live tilawah on tiktok by taking income according to sharia. *Demak Universal Journal of Islam and Sharia*. 2024;Jun 4;2(03):231-42.
3. Oh Lam S. Concentration in the attention economy. Available at SSRN 4861720. 2024;Mar 19.
4. Foroughi B, Griffiths MD, Iranmanesh M, Salamzadeh Y. Associations between Instagram addiction, academic performance, social anxiety, depression, and life satisfaction among university students. *International Journal of Mental Health and Addiction*. 2022;Aug;20(4):2221-42.
5. Rogowska AM, Cincio A. Procrastination mediates the relationship between problematic TikTok use and depression among young adults. *Journal of clinical medicine*. 2024;Feb 22;13(5):1247. <https://doi.org/10.3390/jcm13051247>
6. National Institute of Mental Health. Mental Illness. National Institute of Mental Health. [updated 2024; cited 17 Oct 2014]. Available from: <https://www.nimh.nih.gov/health/statistics/mental-illness>
7. Azenal A, Zaw C. Association between social media addiction and mental health among International Islamic University Malaysia (IIUM) undergraduate nursing students. *International Journal of Care Scholars*. 2021;Dec 9;4(Supp1):32-9. <https://journals.iium.edu.my/ijcs/index.php/ijcs/article/view/216>
8. Elhai JD, Levine JC, Dvorak RD, Hall BJ. Non-social features of smartphone use are most related to depression, anxiety and problematic smartphone use. *Computers in Human Behavior*. 2017;69:75-82. <https://doi.org/10.1016/j.chb.2016.12.023>
9. AlFaris E, Irfan F, Ponnampereuma G, et al. The pattern of social media use and its association with academic performance among medical students. *Medical Teacher*. 2018;40(S1):S76-S81. <https://doi.org/10.1080/0142159X.2018.1465536>
10. Ophir Y, Lipshits-Braziler Y, Rosenberg H. New-media screen time is not (necessarily) linked to depression: Results from a pilot study of vocational interests, media use, and mental health among university students. *Computers in Human Behavior*. 2019;93:62-70. <https://doi.org/10.1016/j.chb.2018.11.024>
11. Raosoft, Inc. Sample size calculator. [updated 2004; cited 9 Sep 2024]. Available from: <http://www.raosoft.com/samplesize.html>
12. Galanis P, Katsiroumpa A, Moisoglou I, Konstantakopoulou O. The TikTok addiction scale: development and validation. *AIMS Public Health*. 2024;Dec 11;11(4):1172. <https://doi.org/10.21203/rs.3.rs-4762742/v1>
13. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. *Behaviour research and therapy*. 1995;Mar 1;33(3):335-43. [https://doi.org/10.1016/0005-7967\(94\)00075-u](https://doi.org/10.1016/0005-7967(94)00075-u)
14. The Jamovi Project. jamovi (Version 2.5) [Computer Software] 2024. Available from: <https://www.jamovi.org>
15. Oliva A, Antolín-Suárez L, Rodríguez-Meirinhos A. Uncovering the link between self-control, age, and psychological maladjustment among Spanish adolescents and young adults. *Psychosocial Intervention*. 2019;Mar 5;28(1):49-55. <https://doi.org/10.5093/pi2019a1>

16. Rathy A. A systematic review: the influence of tiktok contents and its effects towards mental health among youth in Malaysia. *Journal of Media and Information Warfare* Vol. 2023;Apr;16(1):1-3.
17. Hasan S. Use of social media in college going students. SSRN 3695794 [Internet]. 2020;Sep 20. [cited 2024 Dec 28] Available from: <https://doi.org/10.2139/ssrn.3695794>
18. Rogowska AM, Cincio A. Procrastination mediates the relationship between problematic TikTok Use and depression among young adults. *Journal of clinical medicine*. 2024;Feb 22;13(5):1247.
19. Selviana S, Maulida L, Nuzula F. Exploring the impact of TikTok and social media addiction on bedtime procrastination among high school students. *International Journal of Advanced Health Science and Technology*. 2024;Feb 13;4(1):32-5. <https://doi.org/10.35882/ijahst.v4i1.312>
20. Marino C, Gini G, Vieno A, Spada MM. The associations between problematic Facebook use, psychological distress and well-being among adolescents and young adults: A systematic review and meta-analysis. *Journal of Affective Disorders*. 2018;226:274-281. <https://doi.org/10.1016/j.jad.2017.10.007>
21. Jagtap P, Kanade V, Jagtap H, Kale O, Kadam A. Impact of social media on youth. SSRN.2024. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5220468
22. Elhai JD, Levine JC, Dvorak RD, Hall BJ. Non-social features of smartphone use are most related to depression, anxiety and problematic smartphone use. *Computers in Human Behavior*. 2017;69:75-82. <https://doi.org/10.1016/j.chb.2016.12.0>
23. Kok Wah DJN. Exploring the role of perceived social support in enhancing psychological well-being: investigating its mediating effect and implications for mental health outcomes. *Tobacco Science and Technology*. 2025. Available from: https://www.academia.edu/128493908/Exploring_the_Role_of_Perceived_Social_Support_in_Enhancing_Psychological_Well_Being_Investigating_Its_Mediating_Effect_and_Implications_for_Mental_Health_Outcomes
24. Herman PY, Karneli Y. Efektivitas konseling kelompok dengan pendekatan rational emotive behavior untuk meningkatkan self-esteem pada remaja. *Socius: Jurnal Penelitian Ilmu-Ilmu Sosial*. 2025; 12(1):34-49. <https://ojs.daarulhuda.or.id/index.php/Socius/article/view/1656>
25. Al Shawi AF, Hameed AK, Shalal AI, Abd Kareem SS, Majeed MA, Humidy ST. Internet addiction and its relationship to gender, depression and anxiety among medical students in Anbar Governorate-West of Iraq. *Community Health Equity Research & Policy*. 2022;Apr;42(3):253-6. <https://doi.org/10.1177/0272684x20985708>
26. Liang L, Zhou D, Yuan C, Shao A, Bian Y. Gender differences in the relationship between internet addiction and depression: A cross-lagged study in Chinese adolescents. *Computers in Human Behavior*. 2016;Oct 1;63:463-70. <https://doi.org/10.1016/j.chb.2016.04.043>
27. Sadeeq SH, Omar JH. Effectiveness of a psychological program to reduce social media addiction among high school students. *Edusia: Jurnal Ilmiah Pendidikan Asia*. 2025 May 13;5(1):1-9.