



Comparison of Tik Tok Media Education and Power Point Media on the Use of Social Media on Adolescent Mental Health in the Digital Era Nursing Department

Lisbet Octovia Manalu^{1*}, Tonika Tohri², Imayasari³

¹ Pediatric Nursing, Institut Kesehatan Rajawali, Indonesia

² Medical Surgical Nursing, Institut Kesehatan Rajawali, Indonesia

³ Mental Health Nursing, Institut Kesehatan Rajawali, Indonesia

*Corresponding author: lisbetpediatrik@gmail.com

ABSTRACT

The increasing use of digital technology has transformed social media into a primary source of information for adolescents. TikTok, with its dynamic and engaging features, is highly popular among teenagers, while PowerPoint provides a more structured approach to learning. Comparing these two media is important to evaluate their effectiveness in delivering mental health education. This study aimed to examine the effect of social media based education on adolescent mental health in the digital era, comparing TikTok and PowerPoint as learning tools. A *quasi experimental* study with a *pre test post test control group design* was conducted on 60 students from the Nursing Department of SMK Babunnajah, selected through *purposive sampling*. Data were analyzed using the Wilcoxon test for within-group comparisons and the *Mann–Whitney* test for between-group differences. The Wilcoxon test showed significant improvements in mental health outcomes in both the experimental group ($p < 0.001$) and the control group ($p = 0.001$). The *Mann Whitney* test confirmed significant differences between the two groups ($p < 0.001$), indicating that TikTok based interventions had a greater effect than PowerPoint. TikTok proved to be more effective than PowerPoint in enhancing adolescent mental health awareness. Integrating creative and interactive social media platforms into health education may improve engagement and learning outcomes among teenagers.

Keywords: education, mental health, use of social media

Copyright © 2025 Proceeding Strada International Conference on Health
All rights reserved

BACKGROUND

Mental health is a critical issue today, affecting both adults and children, including adolescents. It encompasses the ability to manage stress and remain productive in daily life. Mental health disorders such as depression and anxiety are widespread. Globally, an estimated 264 million people suffer from depression and more than 300 million experience anxiety disorders. Approximately 1% of the world's population lives with severe mental illnesses such as schizophrenia (World Health Organization, 2024). The global health system has not been able to adequately address mental disorders, leaving many treatment needs unmet. It is estimated that around 450 million people worldwide suffer from mental and behavioral disorders (Haryanti et al., 2024). India has the highest number of depression cases, totaling 56,675,969 people (4.5% of its population), while the Maldives has the fewest, with 12,739 cases (3.7% of its population) (Haryanti et al., 2024).



In Indonesia, the prevalence of depression is approximately 1.4%. The three provinces with the highest prevalence are West Java (3.3%), East Kalimantan (2.2%), and Banten (1.7%).

The prevalence is highest among the 15–24 age group, reaching 2% (Ministry of Health, 2023). This age group, often labeled as Generation Z or the “Strawberry Generation,” has grown up surrounded by technology and social media. They are highly connected to the internet but express concerns about privacy and are exposed to both the positive and negative effects of excessive technology use. Adolescence, defined as ages 12 to 18, is a crucial developmental period characterized by significant physical, emotional, and social changes (Santrock, 2019). During this stage, individuals explore their identity and their place in the surrounding environment. A supportive environment is essential for positive identity formation, while a negative one may hinder development.

The primary developmental task of adolescence is the creation of a self-identity (Dan et al., 2022). Adolescent identity reflects self-perceptions and beliefs, shaped by various factors such as social media, family dynamics, parenting styles, and peer interactions (Dan et al., 2022). In today’s digital era, identity development is strongly influenced by social media platforms. Adolescents often struggle with body image concerns and insecurity, which may lead to unrealistic beauty ideals (Dan et al., 2022). TikTok, according to Novia et al. (2024), can serve as an effective learning medium due to its engaging features that capture student interest and align with the digital world. Meanwhile, PowerPoint has long been a popular educational tool. As described by Ling (Ling Wei Sitohang & Sirait, 2023), it offers comprehensive features such as text, images, audio, and video, making it an attractive medium for delivering educational content (Hashemi et al., 2012). Each platform has its strengths in supporting learning.

Social media may foster positive social interaction but can also pose risks, such as excessive social comparison and cyberbullying (Valkenburg & Peter, 2011). Adolescents often use social media to gain attention and validation, frequently portraying lifestyles that may not align with reality. Health education should be interactive and participatory to encourage behavioral change, including education about responsible social media use (Munawaroh, 2021). Research at SMAN 1 Parongpong revealed that adolescent mental health was not within normal ranges, with a weak negative correlation between social media addiction and adolescent mental health ($\rho = -0.109$). This study suggested the importance of providing education to students about the dangers of excessive social media use and strategies to prevent social media addiction (Siburian & Ricky, 2024).

A preliminary study at SMK Babunnajah found that students were prohibited from bringing mobile phones to reduce mental health problems. However, many violated this rule and remained active on social media, preferring YouTube over television. The school permitted mobile phone use during extracurricular activities, where students frequently accessed Instagram, YouTube, and TikTok for entertainment. Excessive reliance on social media disrupted learning concentration and negatively impacted mental health. Many students neglected assignments, felt anxious without smartphone access, and depended heavily on peers in group tasks. This behavior reduced academic productivity, heightened emotional instability, and weakened responsibility in academic activities.

Students at SMK Babunnajah face serious issues concerning social media use and mental health. Proper use of social media can support mental well-being, while misuse can be detrimental. Therefore, education on responsible social media use is essential to support adolescent mental health and academic effectiveness in the digital era. Given the limited understanding of both its positive and negative impacts, and the high prevalence of social media use among adolescents, such education is increasingly urgent.



OBJECTIVES

This study aims to compare TikTok and PowerPoint media education regarding the use of social media for adolescent mental health in the digital era at Babunnajah Vocational School's nursing department.

METHODS

This study applied a quasi-experimental design with two groups (pre-test–post-test). It was conducted at SMK Babunnajah, Nursing Department, beginning on December 14, 2024. Purposive sampling was used with a population of 76 students, 71 eligible, and a final sample size of 60. The independent variable was education via TikTok and PowerPoint, and the dependent variable was adolescent mental health measured with the Strengths and Difficulties Questionnaire (SDQ-25). The instrument had Cronbach's Alpha reliability of 0.773. Data analysis used the Wilcoxon signed-rank test for within-group analysis and Mann–Whitney U test for between-group comparison. Ethical approval was granted by the Research Ethics Committee of Rajawali Health Institute (No. 415/IKR/FKEP/II/2025).

RESULTS

Table 1. Pre-Test Mental Health Overview Given Educational Intervention About Social Media Use With TikTok Media In The Experimental Group at Babunnajah Vocational School, Nursing Department

Category	Frequency	Percentage (%)
Normal	4	13.3
Borderline	7	23.3
Abnormal	19	63.3
Total	30	100.0

According to Table 1, 4 respondents (13.3%) had a normal mental health level, 7 respondents (23.3%) had a borderline mental health level, and 19 respondents (63.3%) had an abnormal mental health level. These results were obtained from the Pret-Test after educational intervention was given to the Experimental group.

Table 2. Post-Test Mental Health Overview Given Educational Intervention About Social Media Use With TikTok Media In The Experimental Group at Babunnajah Vocational School, Nursing Department

	<i>Pre-test</i>			<i>Post-test</i>			<i>p-value</i>
	Mild	Moderate	Severe	Mild	Moderate	Severe	
Mild	1 (3.3%)	3 (10.0%)	0 (0.0%)	3 (10.0%)	4 (13.3%)	0 (0.0%)	<0.001
Moderate	3 (10.0%)	4 (13.3%)	0 (0.0%)	4 (13.3%)	12 (39.6%)	2 (6.7%)	
Severe	5 (15.7%)	12 (39.6%)	2 (6.7%)	12 (39.6%)	2 (6.7%)	0 (0.0%)	

Table 2 shows that 9 respondents (30.0%) were categorized as normal, 19 respondents (63.3%) as borderline, and 2 respondents (6.7%) as abnormal. These results were obtained from the post-test given by the educational intervention in the experimental group.

Table 3. Overview of the Differences in the Pre-Test and Post-Test of Education on the Use of Social Media with TikTok Media in the Experimental Group at Babunnajah Vocational School, Nursing Department

Category	Frequency	Percentage (%)
Normal (Pre-test)	3	10.0
Borderline (Pre-test)	8	26.7
Abnormal (Pre-test)	19	63.3
Normal (Post-test)	27	90.0



Borderline (Post-test)	3	10.0
Abnormal (Post-test)	0	0.0

In Table 3, the pre-test results show that 4 respondents (13.3%) had normal health, 7 respondents (23.3%) had borderline mental health, and 19 respondents (63.3%) had abnormal health. In the post-test results, 9 respondents (29.8%) had normal mental health, 19 respondents (63.3%) had borderline mental health, and 2 respondents (6.7%) had abnormal health. Based on the data obtained from the statistical test, the p-value <0.001 indicates a difference in TikTok media education on mental health.

Table 4. Description of Pre-Test Mental Health Given Educational Intervention About Social Media Use With Power Point Media in the Control Group at SMK Babunnajah Nursing Department

Pre-test	Post-test			p-value
	Mild	Moderate	Severe	
Mild	3 (10.0%)	0 (0.0%)	0 (0.0%)	0.001
Moderate	6 (20.0%)	2 (6.7%)	0 (0.0%)	
Severe	18 (59.4%)	1 (3.3%)	0 (0.0%)	

Table 4 shows that 3 respondents (10.0%) were categorized as normal, 8 respondents (26.7%) as borderline, and 19 respondents (63.3%) as abnormal. These results were obtained from a pre-test conducted with educational intervention in the control group.

Table 5. Description of *Post-test* Mental Health Given Educational Intervention About the Use of Social Media with Power Point Media in the control group at SMK Babunnajah Nursing Department.

Group	Mild	Moderate	Severe	p-value
Experimental (TikTok)	9	19	2	<0.001
Control (PowerPoint)	27	3	0	

Table 5 shows that 27 respondents (90.0%) were categorized as normal, 3 respondents (10.0%) were categorized as borderline, and 0 respondents (0.00%) were categorized as abnormal. These results were obtained from the post-test of the educational intervention given to the control group.

Table 6. Overview of the Differences between the Pre-test and Post-test of Education on the Use of Social Media with Power Point Media in the Control Group on Mental Health of Adolescents at SMK Babunnajah Nursing Department

Mental Health Pre-Test Education		Mental Health post-test Education			Total	p-value
		Normal	Bordeline	Abnormal		
		Normal	3(10,0)	0(0,0)		
	Bordeline	6(20,0)	2(6,7)	0(0,0)	8(26,7)	
	Abnormal	18(59,4)	1(3,3)	0(00,0)	19(62,7)	
Total		27(90,0)	3(10,0)	0(0,0)	30(100)	

The results of table 6 in the pre-test results showed that 3 respondents (10.0%) had a normal mental health category, 8 respondents (26.6%) had borderline health, and 19 respondents (62.7%) had abnormal health. In the post-test results, there were 3 respondents (10.0%) had a normal mental health category, 6 respondents (20.0%) had borderline health and 27 respondents (90.0%) had abnormal health. Based on the data obtained from the results of



the statistical test, the p value was 0.000, which showed a difference between the pre-test and post-test education of power point media on mental health.

Table 7. Comparison of the Provision of Education About the Use of Social Media on Mental Health of Adolescents in the Experimental Group and the Control Group

Group	Mental Health						<i>P-value</i>
	<i>Pre-test</i>			<i>Post-Test</i>			
	Normal	Bordeline	Abnormal	Normal	Bordeline	Abnormal	
experimental group	4	7	19	9	19	2	<0,001
Control group	3	8	19	27	3	0	

The results of Table 7 show that the difference in post-test mental health variables between the experimental and control groups obtained a p-value <0.001, indicating a significant difference in post-test mental health after the educational intervention.

DISCUSSION

Post-test results of mental health education through TikTok on social media use showed that respondents with severe mental health conditions were more numerous compared to those with mild mental health. It was found that respondents with severe mental health issues were on average 17 years old. This age represents a transitional stage from adolescence to early adulthood, involving significant developmental changes such as identity exploration and social comparison.

The majority of respondents were female. Adolescent girls are more vulnerable to the negative impacts of social media use on mental health compared to boys. Several biological, social, and psychological factors, as well as peer environment, contribute to this vulnerability. Florensa et al. (2023) emphasize that gender significantly influences adolescent mental health, with girls being more prone to depression than boys. Respondents categorized as having normal post-test mental health conditions after TikTok education align with Bates et al. (2020), who reported that physical activity is linked to multiple health benefits for adolescents, including social skill development, emotional regulation, and psychological well-being. Physical activity can protect individuals from mental health problems such as depression and anxiety. Increased physical activity tends to reduce mental health issues, and exercise interventions should be integrated into routine care for individuals with mental disorders due to its extensive benefits for both physical and mental health (I Gusti Ayu Putu Satya Laksmi, 2023).

The comparison of pre-test and post-test results regarding adolescent mental health education at SMK Babunnajah (Nursing Department) using TikTok showed a statistically significant difference ($p < 0.001$). This indicates that TikTok significantly improved mental health outcomes, particularly in behavioral, emotional, and hyperactivity/inattention domains. Gajo et al. (2022) highlight that mental health education content on TikTok can reduce stigma toward individuals with mental health problems. However, it is crucial that TikTok-based education is delivered responsibly, ensuring accuracy, informativeness, and safety. Simoniga et al. (2024) further showed that TikTok-based mental health education effectively increases knowledge and understanding about mental health.

Post-test results of PowerPoint-based education indicated that some respondents continued to experience abnormal mental health. This was influenced by the fact that many respondents were in the twelfth grade, a stage characterized by identity formation, uncertainty about the future, peer relationships, and exposure to social media, which can cause insecurity and stress. Hudiafa et al. (2024) emphasized that mental health issues among students are



serious and require special attention, as unsupportive academic and social environments may exert considerable pressure, leading to declining academic achievement and risky behaviors.

On the other hand, respondents with normal post-test mental health after PowerPoint-based education highlight the effectiveness of such interventions. Superficial online relationships often fail to meet deeper emotional needs, resulting in loneliness. Thus, education on responsible social media use through PowerPoint proved effective in improving students' mental health. Herawati et al. (2022) state that PowerPoint is effective in enhancing adolescent knowledge for health promotion. However, they suggest that PowerPoint-based education should be combined with video-based learning to avoid monotony and boredom, ensuring that lessons remain creative and engaging.

Comparisons of pre-test and post-test results of PowerPoint-based education also demonstrated significant differences ($p = 0.000$). Fitriah et al. (2023) reported a positive correlation between social media use and mental health (correlation coefficient = 0.190), though the correlation was weak and statistically insignificant ($p = 0.056$). This suggests that the observed relationship may be due to chance. Febria et al. (2021) argue that interactive PowerPoint-based digital learning can be highly effective for community empowerment and health promotion.

The comparison between TikTok and PowerPoint education interventions showed a statistically significant difference in adolescent mental health improvement ($p < 0.05$). The mean rank for TikTok was 40.75 compared to 20.25 for PowerPoint, with a difference exceeding 20 points, indicating TikTok's greater effectiveness. Novia et al. (2024) noted that TikTok can serve as an engaging learning platform due to its variety of features, making it highly relevant to today's digital learners. In contrast, PowerPoint has long been used as an educational tool, offering comprehensive features such as text processing, image insertion, audio, animation, and video, which enhance its presentation appeal (Ling Ling Wei Sitohang & Sirait, 2023).

This study focused only on two types of media, limiting the generalizability of its findings to other social media platforms or educational tools. Differences in content type and duration may also influence how each medium affects understanding of mental health. The sample was drawn from a specific adolescent population in one region, further limiting generalizability. The relatively short study duration restricted assessment of long-term effects. Despite these limitations, the study's strengths lie in its relevance to current trends in social media use and adolescent mental health. By comparing two contrasting media platforms—TikTok, a short-form video platform, and PowerPoint, a formal presentation tool—this study provides insight into the effectiveness of each in delivering mental health education. The use of pre-test and post-test methods offered objective assessment of changes in knowledge and perceptions.

CONCLUSION

Before the TikTok intervention, the majority of respondents were categorized as having abnormal mental health. After receiving education through TikTok, there was a notable improvement, with many respondents shifting to the borderline category. This indicates that TikTok-based social media education had a significant influence on adolescent mental health. Prior to PowerPoint education, most respondents also showed abnormal mental health. After the intervention using PowerPoint, the majority remained in the abnormal category, although the proportion decreased slightly. This suggests that PowerPoint education also had an effect, but the improvement was less substantial compared to TikTok. Overall, the findings indicate a highly significant difference between the two media, with TikTok-based education showing the most clinically and practically meaningful impact on adolescent mental health.



Recommendations: Schools should integrate mental health education into curricula using digital platforms, teachers should monitor students' social interactions, provide counseling, and encourage balanced social media use, adolescents should be guided to use social media responsibly and participate actively in educational programs promoting mental well-being.

REFERENCES

- Bates, L. C., Zieff, G., Stanford, K., Moore, J. B., Kerr, Z. Y., Hanson, E. D., Gibbs, B. B., Kline, C. E., & Stoner, L. (2020). Covid-19 impact on behaviors across the 24-hour day in children and adolescents: Physical activity, sedentary behavior, and sleep. *Children*, 7(9). <https://doi.org/10.3390/children7090138>.
- Dan, Y., Nabila, A., Mahamad, A., Abdullah, H., Mohd, @, Pusat, N., Psikologi, K., Kesejahteraan, D., Fakulti, M., Sosial, S., & Kemanusiaan, D. (2022). The Role Of Body Objectification Towards Mental Health Among Generation Y And Z In Selangor. 6(2), 1–15.
- Febria, D., Christian, M., Fitriana, N., Cinthya, L., & Teresa, A. (2021). Prosiding National Conference for Community Service Project (*NaCosPro*) Edukasi Pentingnya Menjaga Kesehatan Mental Bagi Siswa Selama Pandemi. 3. <http://journal.uib.ac.id/index.php/nacospro>.
- Fitriah, A., Juliansyah, D., Salamah, U., Anugrah Utama, M., Falah, O. K., Miati, A., Razzan, M. R., & Taqiyurrisal, M. (2023). Pengaruh Media Sosial Terhadap Kesehatan Mental Pada Mahasiswa Di Perguruan Tinggi. *Educate : Journal Of Education and Learning*, 1(1), 32–38. <http://jurnal.dokicti.org/index.php/educate/index>.
- Florensa, F., Hidayah, N., Sari, L., Yousrihatin, F., & Litaqia, W. (2023). Gambaran Kesehatan Mental Emosional Remaja. *Jurnal Kesehatan*, 12(1), 112–117. <https://doi.org/10.46815/jk.v12i1.125>.
- Gajo, A. G. E., Gaisen, E. M. P., Lino, F. V. K. R., Edaño, L. B., & Jr, V. L. C. (2022). Sustaining Students' Mental Health Through the Use of Tiktok Application. *Indonesian Journal of Community and Special Needs Education*, 3(1), 11–20. <https://doi.org/10.17509/ijsne.v3i1.43729>.
- Herawati, N., Kusmaryati, P., & Wuryandari, A. G. (2022). Audio Visual dan Power Point sebagai Media Edukasi dalam Merubah Pengetahuan dan Perilaku Remaja. *Jurnal Keperawatan Silampari*, 6(1), 145–152. <https://doi.org/10.31539/jks.v6i1.3772>.
- Hudiafa, Eva, Purwaningsih, Nining, Azka, Khairani, & Roziq4), A. H. (2024). Dampak Mental Health Bagi Pelajar. Prosiding Seminar Nasional Pendidikan Non Formal Fakultas Keguruan Dan Ilmu Pendidikan Universitas Sultan Ageng Tirtayasa 2024, 72(April), 1500–1531. https://www.who.int/health-topics/mental-health#tab=tab_2.
- I Gusti Ayu Putu Satya Laksmini, D. M. A. D. J. (2023). Hubungan Aktivitas Fisik dengan Kesehatan Mental pada Remaja. *Jurnal Ilmu Kesehatan*, 14(1), 11–19.
- Kemendes RI. (2023). Depresi pada Anak Muda di Indonesia. Badan Kebijakan Pembangunan Kesehatan.
- Ling Ling Wei Sitohang, A., & Sirait, J. (2023). Pengaruh Penggunaan Media Pembelajaran Powerpoint Interaktif Terhadap Hasil Belajar Siswa Kelas V SD Negeri 095198 Silomaria Tanah Jawa. *Journal on Education*, 6(1), 3345–3357. <https://doi.org/10.31004/joe.v6i1.3402>.
- Novia, L., Hikmat, A., & Safi'I, I. (2024). Pemanfaatan Aplikasi Tiktok Sebagai Media Pembelajaran Pidato. *Jurnal Inovasi Global*, 2(2), 307–311. <https://doi.org/10.58344/jig.v2i2.64>.



- Nur Haryanti, A., Bintang Syah Putra, M., Larasati, N., Nureel Khairunnisa, V., & Dyah Dewi, L. A. (2024). Analisis Kondisi Kesehatan Mental di Indonesia Dan Strategi Penanganannya. *Student Research Journal*, 2, 28–40. <https://doi.org/10.55606/srjyappi.v2i3.1219>.
- Oktaviana, M., & Wimbarti, S. (2014). Validasi Klinik Strengths and Difficulties Questionnaire (SDQ) sebagai Instrumen Skrining Gangguan Tingkah Laku. *Jurnal Psikologi*, 41(1), 101. <https://doi.org/10.22146/jpsi.6961>.
- Santrock, J. W. (2019). *Adolescence* / John W. Santrock, University of Texas at Dallas.
- Simoniga, J., Rawis, D., Dwihadiah, D. L., Komunikasi, M. I., Sosial, F. I., Universitas, P., & Harapan, P. (2024). Transforming mental health education in the digital age: tiktok content in shaping audience attitudes and behaviours. 7, 4652–4663.
- Valkenburg, P. M., & Peter, J. (2011). Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *Journal of Adolescent Health*, 48(2), 121–127. <https://doi.org/10.1016/j.jadohealth.2010.08.020>.
- World Health Organization. (2024). *World Health Organization - World health statistics 2024*. ISBN 9789240094703. statistics 2024.