



THE EFFECT OF HEALTH EDUCATION THROUGH THE MOBILE-BASED APPLICATION MY MINDS ON ADOLESCENTS' KNOWLEDGE IN PREVENTING MENTAL HEALTH DISORDERS AND BEHAVIOR

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ABSTRACT

This study aimed to determine the effect of health education through the mobile-based application My Minds on adolescents' knowledge in preventing mental health disorders in Kuningan Regency in 2025. The research method employed a quasi-experimental design with a pretest-posttest and control group. The population consisted of 10th-grade students from two senior high schools in Kuningan Regency, with a sample of 42 students in each intervention and control group. The research design was a quasi-experimental one. Quasi-experimental research is an experiment that uses a specific design and/or a non-random method for allocating research factors, resulting in a controlled research situation that approximates the situation expected from an experiment. The research design used in this study was a pretest-posttest design with a control group. The instrument used was The Strengths and Difficulties Questionnaire (SDQ), and bivariate analysis was conducted using the Mann-Whitney test. Results showed a significant difference between the My Minds application group (mean score 75.19) and the lecture method group (mean score 72.38) with a p-value of 0.035. In conclusion, the My Minds application is more effective in increasing adolescents' knowledge in preventing mental health disorders.

Keywords: adolescents; health education; mental health; mobile application; prevention of mental disorders

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INTRODUCTION

Adolescence is a developmental period that lasts between the ages of 11 and 20 (Stuart in Florensa, 2023). During this stage, adolescents experience various changes, including biological, cognitive, social, and emotional ones. Adolescents' ability to adapt to these changes significantly impacts their overall well-being. Adolescents also have specific developmental tasks to fulfill, but many face difficulties in achieving them (Ausrianti et al., 2022). Adolescents are often faced with various challenges that can affect their ability to achieve these developmental goals (Saputro, 2018). The inability to overcome these challenges can lead to the emergence of emotional mental health problems (Bethell et al., 2019). According to the World Health Organization (WHO) in 2021, approximately 1 in 7 adolescents aged 10 to 19 worldwide experience mental disorders, which account for approximately 13% of the global burden of disease in this age group (WHO, 2021). Data from the Basic Health Research (Riskesdas, 2018) shows that nationally, the prevalence of emotional mental disorders such as anxiety and depression in 15-24 year olds reaches 10%. West Java Province has a high prevalence of mental health disorders.

According to (Triwibowo and Pusphandayani, 2015) Health education is a dynamic process of behavioral change, with the aim of changing human behavior which includes components of knowledge, attitudes, or changes related to the goal of healthy living both individually, in groups, and in society and using existing health service facilities appropriately. Health education is a collection of useful experiences in influencing health behavior, furthermore health education is a process that is more than just conveying facts, needs that involve participants in a much larger process.

Health education through the My Minds mobile app has proven to be an effective tool for increasing adolescents' knowledge regarding the prevention of mental health and behavioral disorders. The app is designed with an interactive, youth-focused approach, presenting educational materials that are engaging, easy to understand, and accessible at any time. Implementation results show that adolescents who use My Minds experience significant improvements in their understanding of stress, anxiety, and healthy coping strategies. Android-based digital applications have several advantages in health education that have been scientifically proven to be effective. According to Putra et al. (2021), the use of mobile applications can significantly improve users' knowledge and skills in the context of health learning. This aligns with findings from Alanzi (2021), who stated that interactive content, such as videos, quizzes, and simulations, can increase learning interest and information retention. Furthermore, according to Nouri et al. (2020), Android applications have a high level of accessibility because they can be used anytime and anywhere, even without an internet connection. This study aims to analyze the influence of health education using the mobile-based application MY Minds on adolescent knowledge in efforts to prevent mental health and behavioral disorders in Kuningan Regency in 2025.

METHOD

The research will be conducted at SMAN 1 Mandirancan, Kuningan Regency. The research will be conducted in June 2024. This study uses a quantitative approach as a research paradigm. Quantitative data is a research method based on positivism (concrete data). The research design was a quasi-experimental one. Quasi-experimental research is an experiment that uses a specific design and/or a non-random method for allocating research factors, resulting in a controlled research situation that approximates the situation expected from an experiment (Heriana, 2017). The research design used in this study was a pretest-posttest design with a control group. Population is a group of subjects to be generalized by the research results. A population must have shared traits or characteristics that distinguish it from other groups of subjects, including location characteristics, individual characteristics, or certain characters. (Badriah, 2019). The population in this study was all 10th grade students at SMAN 1 Mandirancan, Kuningan Regency, totaling 432 students for the intervention group and all 10th grade students at SMAN 1 Pasawahan, Kuningan Regency, totaling 192 as the control group. The sample size per group (intervention and control) was 37 students. To anticipate sample dropout, the sample size was increased by 10%. So, after taking into account the 10% dropout, the sample size per group was 42 students. So it can be concluded that there were 42 students in the intervention group at SMAN 1 Mandirancan and 42 students in the control group at SMAN 1 Pasawahan.

The sampling technique in this study used purposive sampling, which is a sampling technique based on certain criteria or considerations that have been determined by the researcher. This technique was chosen because not all students meet the requirements or are relevant to be respondents in the study which aims to measure the effect of health education through mobile applications on knowledge about preventing mental health and behavioral disorders. Inclusion criteria include students who are actively attending high school (grades X–XII) in the Kuningan Regency area, aged between 15–18 years, willing to be respondents and have obtained written permission from their parents/guardians through an informed consent form, have a personal smartphone and can operate mobile applications, have stable internet access during the study period, have never participated in special training or education related to mental health in the last 6 months. Exclusion criteria included students who were not fully present during the intervention process via the My MINDS application, experienced technical difficulties (e.g., device damage or loss of internet access) that prevented them from completing the educational program within the application, or withdrew or refused to continue participating during the research process.

RESULT

Validity is a measure that indicates the level of validity and authenticity of an instrument (Arikunto, 2018). The My Minds instrument has been tested by experts, namely Flatrom Budiyo

Tech, and declared suitable for use in early detection. The mental health knowledge questionnaire was tested for validity and reliability using Cronbach's alpha analysis at SMKN 4 Kuningan, which has the same characteristics as the research site, with the following results:

Table 1.

Results of the questionnaire validity test

Question	R Count	R tabel	Information
1	0,607	0,468	Valid
2	0,763	0,468	Valid
3	0,776	0,468	Valid
4	0,832	0,468	Valid
5	0,620	0,468	Valid
6	0,607	0,468	Valid
7	0,569	0,468	Valid
8	0,667	0,468	Valid
9	0,861	0,468	Valid
10	0,607	0,468	Valid
11	0,607	0,468	Valid
12	0,845	0,468	Valid
13	0,763	0,468	Valid
14	0,776	0,468	Valid
15	0,620	0,468	Valid

Table 1 shows the results of the validity test obtained for all calculated $r > r$ table so that all questionnaire question items are declared valid. And Based on the results of the reliability test using Cronbach's alpha, the value obtained was 0.780 or more than 0.60 so that the questionnaire was said to be reliable. The My Mind Mobile Application was 50.98 with a standard deviation of 13.37, a minimum value of 27, and a maximum of 73. After using the application, the average score increased to 75.19 with a standard deviation of 10.64, and a minimum value of 33 and a maximum of 93. The average difference before and after the intervention was 24.21. This increase indicates that the use of the My Mind Mobile Application contributed positively to the increase in respondents' scores.

Table 2.

Overview of adolescent knowledge in efforts to prevent mental health disorders before and after health education through the mobile application MY Minds in Kuningan Regency in 2025

Aplikasi Mobile My Mind	N	Median	Mean difference	Median	Std. Deviasi	Min	Max
Before	42	50,98		47,00	13,37	27	73
After		75,19	24,21	76,50	10,64	33	93

The average score before using the lecture method was 56.81 with a standard deviation of 8.67, a minimum value of 40, and a maximum of 73. After implementing the lecture method, the average score increased to 72.38 with a standard deviation that decreased to 6.26, and a minimum value of 60 and a maximum of 87. The average difference before and after the intervention was 15.57. This shows that the lecture method has a positive influence on increasing respondents' scores on the measured aspects.

Table 3.

Description of adolescent knowledge in efforts to prevent mental health disorders before and after health education through the lecture method

Lecture Methode	N	Mean	Mean difference	Median	Std. Deviasi	Min	Max
Before	42	56,81	15,57	53,00	8,67	40	73
After		72,38		73,00	6,26	60	87

The Wilcoxon test results were conducted on 42 respondents to compare scores before and after using the My Mind Mobile Application. The average score before the intervention was 50.98 and increased to 75.19 after using the application, with an average difference of 24.21. From the test results, there were 40 respondents with an increase in score (positive rank), no respondents

experienced a decrease in score (negative rank), and 2 respondents with scores that did not change (ties). The p-value is 0.000, which means that the increase in score after using the application is statistically significant at a significance level of 0.05 so that there is an effect of health education through the use of the MY Minds mobile-based application on adolescent knowledge in efforts to prevent mental health and behavioral disorders in Kuningan Regency in 2025.

Table 4.

The influence of health education through the use of the MY Minds mobile-based application on adolescent knowledge in efforts to prevent mental health and behavioral disorders

Aplikasi Mobile My Mind	N	Mean	Mean difference	Positif Rank	Negatif rank	Ties	p-value
Before	42	50,98	24,21	40	0	2	0,000
After		75,19					

The Wilcoxon test results were conducted on 42 respondents to compare scores before and after the lecture intervention. The average score before the lecture method was 56.81 and increased to 72.38 after the intervention, with an average difference of 15.57. From the test results, there were 35 respondents who showed an increase in scores (positive rank), no respondents experienced a decrease in scores (negative rank), and 7 respondents with scores that did not change (ties). A p-value of 0.000 indicates that the increase in scores after the lecture method was statistically significant at the 0.05 level of significance. Therefore, there is an effect of health education through the use of the lecture method on adolescent knowledge in efforts to prevent mental health and behavioral disorders in Kuningan Regency in 2025.

Table 5.

The influence of health education through the use of lecture methods on adolescent knowledge in efforts to prevent mental health and behavioral disorders

Lecture Methode	N	Mean	Mean difference	Positif Rank	Negatif rank	Ties	p-value
Before	42	56,81	15,57	35	0	7	0,000
After		72,38					

The Mann-Whitney test results showed a significant difference between the group given health education through the MY Mind application and the group using the lecture method. The average knowledge score in the MY Mind application group was 75.19, while in the lecture group it was 72.38. The average difference between the groups was 2.81, with a p-value of 0.035. Since the p-value <0.05, it can be concluded that there is a statistically significant difference between the two methods, and the MY Mind application has a greater influence on increasing adolescents' knowledge in preventing mental health disorders.

Table 6.

Differences in the influence of health education on adolescent knowledge in efforts to prevent mental health disorders in the intervention group and control group

Group	Mean	Mean difference	p-value
Aplikasi MY Mind	75,19	24,21	0,035
Lecture	72,38	15,57	

The increased scores in this study indicate that the use of the My Mind mobile app has positively contributed to increasing adolescents' knowledge in preventing mental health disorders. With its user-friendly and easily accessible features, the mobile app has been shown to improve adolescents' understanding of mental health issues. Therefore, the My Mind app can be a key innovation in the digital era's promotive-preventive mental health strategies for adolescents. The My Mind app can be used as an effective medium for mental health education, particularly in the adolescent context. The use of this technology not only addresses the challenges of limited time and resources in conventional counseling but also allows for broader and more targeted outreach to adolescents, particularly in areas such as Kuningan Regency, which is developing community-based mental health services.

DISCUSSION

Description of adolescent knowledge in efforts to prevent mental health disorders before and after health education through the mobile-based application MY Minds

The results of the study showed that the average score before using the My Mind Mobile Application was 50.98 with a standard deviation of 13.37, a minimum value of 27, and a maximum of 73. After using the application, the average score increased to 75.19 with a standard deviation of 10.64, and a minimum value of 33 and a maximum of 93. The average difference before and after the intervention was 24.21. This increase indicates that the use of the My Mind Mobile Application contributed positively to the increase in respondents' scores. The effectiveness of mobile applications in improving health literacy has also been demonstrated in several studies. For example, research by Handayani et al. (2021) showed that the use of Android-based educational applications significantly improved adolescents' knowledge of reproductive health. This aligns with previous research suggesting that digital technology-based media, such as mobile applications, can enhance the effectiveness of health education, particularly among adolescents familiar with gadget use (Putri et al., 2020).

Description of adolescent knowledge in efforts to prevent mental health disorders before and after health education through the lecture method

Adolescents' knowledge regarding the prevention of mental and behavioral health disorders showed an increase after receiving health education through the lecture method. Before the intervention, the average adolescent knowledge score was 56.81 with a standard deviation of 8.67. The minimum score achieved was 40, while the maximum score was 73. This reflects the varying levels of understanding among adolescents regarding the prevention of mental health disorders. After the lecture intervention, the average score increased to 72.38, with a standard deviation decreasing to 6.26. The minimum score increased to 60, and the maximum score increased to 87. The decrease in the standard deviation indicates that the distribution of scores among respondents became more uniform, indicating an increase in understanding evenly among participants after receiving counseling.

Several studies have shown that the lecture method is effective in increasing adolescents' knowledge regarding the prevention of mental health disorders. Idris et al. (2024) reported that psychoeducation through lectures, simulations, and discussions can improve adolescents' understanding of stress management and adaptation strategies. Research by Ali and Ansori (2024) also showed an increase in junior high school students' knowledge from a good category of 22.9% to 52.1% after receiving socialization through lecture and discussion methods. Budi et al. (2024) reported an increase in adolescents' knowledge from 56.3% to 83.9% after training using lecture and role-play methods. In addition, Selvia et al. (2024) proved that a one-time lecture on concentration disorders was quite effective in improving the understanding of 11th grade students at MAN 1 Sumedang. These findings indicate that the lecture method is still relevant and can have a significant impact on increasing adolescents' knowledge in the prevention of mental health disorders.

The influence of health education through the use of the MY Minds mobile-based application on adolescent knowledge in efforts to prevent mental health disorders

The results showed that the use of the My Mind app significantly increased adolescents' knowledge about preventing mental health and behavioral disorders. Before the intervention, the average knowledge score was 50.98 with a standard deviation of 13.37, a minimum score of 27, and a maximum score of 73. After the intervention using the app, the average score increased to 75.19 with a standard deviation of 10.64, a minimum score of 33, and a maximum score of 93. This average difference of 24.21 points indicates a significant increase in knowledge among respondents. A Wilcoxon test conducted on 42 respondents showed that 40 respondents experienced an increase in their scores, two respondents had unchanged scores, and none decreased. A p-value of 0.000 indicates that this increase is statistically significant at the 0.05 level. This demonstrates that the My Mind app effectively increases adolescents' understanding of the importance of preventing mental

health disorders through an accessible and engaging digital approach. Several international studies have shown that the use of mobile-based applications is effective in improving adolescents' knowledge and skills for preventing mental health disorders. Fleming et al. (2024), in an exploratory study of adolescents' attitudes toward mental health applications, revealed that most adolescents had a positive view of the applications' ease of access and usefulness in helping them manage their mental health. App-based interventions implemented in schools have also been shown to improve children's emotional regulation by helping them manage stress and emotions more effectively (Grist et al., 2021).

The influence of health education through the lecture method on adolescent knowledge in efforts to prevent mental health disorders

The Mann-Whitney test results showed a significant difference between the group receiving health education through the MY Mind application and the group using the lecture method. The average knowledge score in the MY Mind application group was 75.19, while in the lecture group it was 72.38. The mean difference between the groups was 2.81, with a p-value of 0.035. Since the p-value <0.05, it can be concluded that there is a statistically significant difference between the two methods, and the MY Mind application has a greater impact on increasing adolescents' knowledge in preventing mental health disorders. This finding is in line with Calista Roy's Adaptation Theory, which emphasizes the importance of educational stimuli in helping individuals adapt effectively to health challenges, including psychological stress in adolescents. Furthermore, based on the Neuman Systems Model, this application acts as a secondary preventive intervention that can strengthen an individual's line of defense against psychosocial stressors by increasing understanding and awareness. Thus, technology-based approaches such as My Mind not only provide information but also support adaptive coping mechanisms that contribute to adolescent mental resilience. Previous research by Firth et al. (2019) demonstrated that in-person mental health education interventions remain effective when presented in an engaging and relevant manner to adolescents' lives. Furthermore, Liu & Schleider's (2024) findings highlight the importance of incorporating resilience education strategies and coping skills into the school curriculum. This supports the belief that lecture-based education remains a crucial tool for building foundational understanding, even when combined with more interactive digital media.

CONCLUSION

The description of adolescents' knowledge in efforts to prevent mental health disorders before being given health education through the mobile-based application My Mind showed an average score of 50.98. After the intervention, there was a significant increase with an average score rising to 75.19. The description of adolescents' knowledge before receiving health education through the lecture method showed an average score of 56.81, and after the intervention the score increased to 72.38, indicating a significant increase in knowledge. There is an influence of health education through the use of the MY Minds mobile-based application on adolescent knowledge in efforts to prevent mental health and behavioral disorders in Kuningan Regency in 2025 with a p-value = 0.000, There is an influence of health education through the use of the lecture method on adolescent knowledge in efforts to prevent mental health and behavioral disorders in Kuningan Regency in 2025 with a p-value = 0.000, There is a significant difference in the influence between health education using the My Mind mobile-based application and the lecture method on adolescent knowledge in efforts to prevent mental health disorders, indicating that the My Mind application has a greater effect than the lecture method in Kuningan Regency in 2025 with a p-value = 0.035.

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