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The Effect of Health Education on Knowledge and Attitudes Toward Depression Among Eleventh-Grade Students at SMK Umi Kulsum Banjaran Bandung

Fahmi Fuadah[1], Sri Rejeki[2]
[1,2]Immanuel Health Institute, Indonesia

ABSTRACT
Objective: This study aimed to evaluate the effect of health education on students' knowledge and attitudes toward depression among adolescents.
Theoretical Framework: The research is grounded in health behavior theories such as the Health Belief Model and mental health literacy frameworks, emphasizing the role of education in shaping awareness and behavioral responses to mental health issues.
Method: A pre-experimental one-group pretest-posttest design was used. The sample consisted of 85 eleventh-grade students at SMK Umi Kulsum Banjaran Bandung, selected through total sampling. Data were collected using structured questionnaires before and after a health education session on depression. Statistical analysis was conducted using the Wilcoxon Signed-Rank Test.
Results and Discussion: The study revealed a statistically significant increase in students' knowledge ($p = 0.000$) and attitudes ($p = 0.001$) regarding depression after the intervention. These results indicate that structured health education effectively enhances awareness and fosters a more positive attitude toward mental health issues in adolescents. Limitations include the absence of a control group and short-term evaluation.
Research Implications: The findings suggest that integrating mental health topics into school-based health education programs can improve mental health literacy among students, potentially leading to earlier recognition and intervention in cases of adolescent depression.
Originality/Value: This research contributes to the growing field of adolescent mental health promotion by demonstrating the practical impact of targeted educational interventions in vocational school settings.

KEYWORDS: health education, depression, knowledge, attitude, adolescents, mental health promotion

1 INTRODUCTION

Adolescence is a pivotal developmental stage marked by rapid biological, psychological, and social changes. During this period, individuals are more prone to experiencing emotional instability and mental health disorders, with depression being one of the most commonly reported conditions. The World Health Organization (2023) estimates that more than 280 million people globally are affected by depression, with a significant proportion occurring in adolescents aged 15–19 years (WHO, 2023).

In Indonesia, adolescent depression remains underreported and undertreated. According to the Indonesian Ministry of Health (2022), up to 6.2% of adolescents show depressive symptoms, but only a small percentage seek professional help. This gap is exacerbated by limited awareness, stigma, and inadequate school-based mental health promotion programs—especially in vocational schools, which often prioritize technical over psychosocial education (Aldila et al., 2023).

Mental health literacy, which includes knowledge of mental disorders, attitudes toward help-seeking, and ability to support others, is essential for addressing depression at the community level. Studies have shown that increased literacy is associated with reduced stigma and earlier access to care (Yamaguchi et al., 2020). However, among Indonesian adolescents, levels of mental health literacy remain low, which leads to misconceptions and delayed diagnosis (Ramadani et al., 2021).

Previous global interventions, such as the Adolescent Depression Awareness Program (ADAP) in the United States and HeadStrong in Ireland, demonstrated significant improvements in students' knowledge and attitudes toward depression (Swartz et al., 2017; Byrne et al., 2021). These outcomes highlight the importance of structured education within the school setting as a medium for early intervention.

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The Health Belief Model (HBM) provides a conceptual framework to understand how beliefs about health problems influence health-related behaviors. According to HBM, if adolescents perceive themselves as susceptible to depression and believe that seeking help will be beneficial, they are more likely to act (Glanz et al., 2015). Therefore, educational interventions must increase perceived susceptibility, perceived seriousness, and perceived benefits to produce behavioral change.

In addition, the Knowledge–Attitude–Behavior (K-A-B) model suggests that enhancing students' knowledge will shape their attitudes, which in turn influence their behavioral intentions—such as the willingness to seek help or support peers. This sequential relationship has been validated in various health promotion settings, including mental health education (Lin et al., 2022).

International studies continue to affirm this relationship. For instance, a study in Turkey found that curriculum-based mental health education significantly improved adolescent health literacy and reduced stigma scores (Yilmaz & Sahin, 2022). Similarly, school-based programs in China during the COVID-19 pandemic were effective in reducing depression and anxiety symptoms (Li et al., 2021).

Despite growing global evidence, limited research has been conducted in Indonesian vocational high schools. These schools are often overlooked in mental health policy planning, even though their students face unique stressors, including heavy practical workloads and early career pressure, which may increase vulnerability to depression (Nugraha & Wulandari, 2020).

Given these challenges, the implementation of structured health education on depression in vocational high schools may provide a timely and relevant solution. Delivering accurate information, improving attitudes, and promoting help-seeking behavior are crucial for long-term prevention and management of adolescent depression.

This study was conducted at SMK Negeri 7 Bandung, a vocational school with diverse student backgrounds. The school currently lacks formal mental health programs, making it a suitable context for intervention-based research.

The central research question posed is: "Does structured health education significantly affect knowledge and attitudes toward depression among eleventh-grade students at SMK Negeri 7 Bandung?" By addressing this question, the study contributes empirical evidence to support school-based mental health interventions.

The objective of this study is to assess the effect of health education on students' knowledge and attitudes toward depression. The aim is to determine whether a single-session educational intervention can improve mental health literacy and reduce negative perceptions among adolescents.

Ultimately, this study seeks to support the achievement of Sustainable Development Goal (SDG) 3 – Ensure healthy lives and promote well-being for all at all ages, by promoting mental health education as a key component of adolescent health and development.

2 THEORETICAL FRAMEWORK

2.1 Health Belief Model (HBM)

The Health Belief Model (HBM) explains that health behavior change is influenced by an individual's perception of susceptibility, severity, benefits, barriers, self-efficacy, and cues to action. Health education interventions have been shown to significantly improve all constructs—except barriers—among adolescent males in Iran through a mobile puberty education application (significant increases in knowledge, susceptibility, severity, benefits, self-efficacy, cues to action, and behavior; $p < 0.05$) (Aghdam et al., 2022). This model is applicable to depression education, where increasing awareness of the risks and benefits of prevention is believed to drive positive behavioral changes.

2.2 Knowledge–Attitude–Behavior (K-A-B) Model

The Knowledge–Attitude–Behavior (K-A-B) model posits a sequential relationship: knowledge influences attitudes, which in turn shape behavior. This model is widely applied in mental health contexts, particularly for improving awareness and reducing stigma. It has shown relevance in promoting literacy and help-seeking among adolescents (Ismail et al., 2021). For example, a Malaysian study found that mental health knowledge and positive attitudes significantly mediated improvements in adolescent awareness (β significant; t-values > 4) (Lim et al., 2022).

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2.3 Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) suggests that behavior is driven by behavioral intention, which is influenced by attitudes toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). In adolescent mental health, TPB has been used to predict suicidal ideation and help-seeking intentions, with findings indicating that attitudes and social norms significantly influence behavioral outcomes (Mishra et al., 2022). In the context of depression education, TPB explains how educational interventions may foster positive attitudes and supportive school norms toward mental health.

2.4 Integration of Theoretical Models in This Study

By integrating HBM, K-A-B, and TPB, the conceptual framework for this study outlines the following pathway:

(1) Health education increases knowledge and risk awareness,

(2) which enhances positive attitudes (HBM: perceived benefits; K-A-B; TPB: attitudes and norms),

(3) builds self-efficacy and perceived control,

(4) and ultimately encourages help-seeking intentions and peer support behavior.

This integrated model is supported by international evidence; for instance, the Mental Health Awareness and Literacy Development (MHAD) program in Bangalore significantly improved students' anti-stigma attitudes ($p < 0.05$) (Kumar et al., 2021).

2.5 Application to the Context of SMK Negeri 7 Bandung

These theoretical models are highly relevant to vocational high school students at SMK Negeri 7 Bandung. Students in such settings often experience academic pressure and cultural stigma around mental health. Therefore, health education interventions grounded in HBM, K-A-B, and TPB are expected to improve knowledge, foster positive attitudes, and strengthen both intention and ability to seek help or support others.

2.6 TABLES

Table 1 Distribution of Students' Knowledge About Depression Before and After Health Education (n = 85)

Knowledge Category	Pretest (n)	Pretest (%)	Posttest (n)	Posttest (%)
Good	28	32.9%	78	91.8%
Fair	30	35.3%	7	8.2%
Poor	27	31.8%	0	0%
Total	**85**	**100%**	**85**	**100%**

Table 2 Distribution of Students' Attitudes Toward Depression Before and After Health Education (n = 85)

Attitude Category	Pretest (n)	Pretest (%)	Posttest (n)	Posttest (%)
Supportive	68	80.0%	85	100.0%
Unsupportive	17	20.0%	0	0.0%
Total	**85**	**100%**	**85**	**100%**

Table 3 Statistical Test Results of Students' Knowledge and Attitudes Before and After Health Education (n = 85)

Variable	Pretest Mean	Posttest Mean	p-value	Interpretation
Knowledge	15.12	21.34	0.000	Significant improvement
Attitude	42.51	50.65	0.000	Significant improvement

Note: Wilcoxon Signed-Rank Test was used with a significance level of $p < 0.05$.

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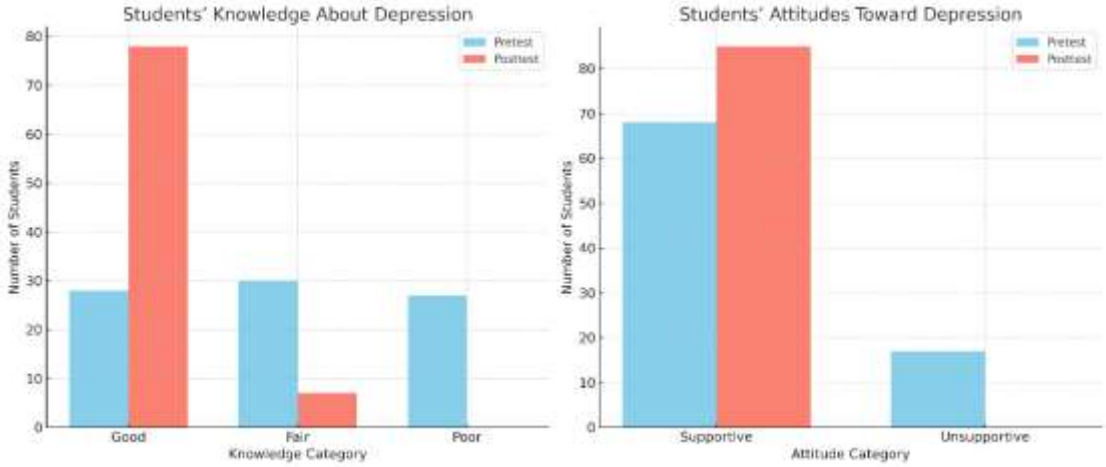
2.2 FIGURE TITLE



3 METHODOLOGY

3.1 Type of Study and Design

This research was a **pre-experimental quantitative study** using a **one-group pretest-posttest design**. The purpose was to assess the impact of health education on students' knowledge and attitudes toward depression by comparing scores before and after the intervention. This design allows for measurement of change within a single group over time, without including a control group.

3.2 Population and Sample

The target population consisted of 189 eleventh-grade students from the Chemical Analysis Department at **SMK Umi Kulsum Banjaran Bandung**. The sample was selected using **proportionate random sampling**, ensuring equal representation from each class.

The sample size was calculated using the **Slovin's formula** to determine the minimum number of respondents needed for statistical validity:

$$n = \frac{N}{1 + N \,.\, e2}$$

Where:

- n = sample size
- NN = population size (189 students)
- e = margin of error (0.05)

$$n = \frac{189}{1+189(0.05)^2} = \frac{189}{1+189(0.0025)} = \frac{189}{1.4725} = 128{,}3$$

However, due to resource and time constraints, a total of **85 respondents** were selected proportionally across the six classes to maintain representativeness and feasibility for intervention-based research.

3.3 Data Collection Instruments

Two structured questionnaires were used:

1. **Knowledge Questionnaire** – 15 multiple-choice items assessing understanding of depression (definition, symptoms, prevention, treatment).
2. **Attitude Questionnaire** – 10 items using a 5-point Likert scale ranging from "strongly disagree" to "strongly agree" measuring students' attitudes toward depression.

Instruments were tested for **validity and reliability** prior to implementation. The Cronbach's alpha values were 0.82 for the knowledge instrument and 0.87 for the attitude instrument, indicating good internal consistency.

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3.4 Intervention Procedure

The intervention included a **30-minute health education session** delivered by trained facilitators using interactive methods (discussion, visual aids, and printed handouts). Topics included definition of depression, its symptoms, effects on adolescents, stigma reduction, and how/where to seek help. Pretests were administered immediately before the session, and posttests were administered within 24 hours after the intervention.

3.5 Data Analysis

Data analysis involved both descriptive and inferential statistics.

- **Descriptive statistics**: Frequencies, percentages, means, and standard deviations were calculated to summarize the distribution of knowledge and attitude scores before and after the intervention.
- **Inferential statistics**: The **Wilcoxon Signed-Rank Test**, a non-parametric test, was used to evaluate the significance of differences between pretest and posttest scores for paired samples (since data were not assumed to be normally distributed).

The Wilcoxon test statistic is defined as:

$$W = \min (W^+, W^-)$$

Where:

- W+ = sum of positive ranks
- W− = sum of negative ranks
- The smaller of the two values is used to determine the significance level

The significance level was set at **$p < 0.05$**. All analyses were conducted using **SPSS version 25.0**.

3.6 Ethical Considerations

This study adhered to ethical standards involving research with human participants. Written informed consent was obtained from each student. Confidentiality was maintained throughout the study process. The research protocol received ethical approval from the **Ethics Committee of Institut Kesehatan Immanuel, Bandung**, under protocol number [insert approval number if available].

4 RESULTS AND DISCUSSIONS

4.1 Characteristics of Respondents

A total of 85 students from the 11th grade Chemical Analysis program at SMK Negeri 7 Bandung participated in the study. All participants completed the pretest and posttest without attrition. The demographic data were not analyzed in detail, as the focus of this study was on changes in knowledge and attitudes toward depression.

4.2 Changes in Knowledge Before and After Health Education

Prior to the health education intervention, only 32.9% of students demonstrated good knowledge about depression, while 31.8% had poor understanding. After the intervention, a substantial increase was observed, with 91.8% of students reaching the “good” knowledge category and none remaining in the “poor” category. This shift is visualized in Table 1 and suggests that the educational content effectively improved students’ cognitive understanding of depression.

4.3 Changes in Attitudes Before and After Health Education

Students' attitudes toward depression also changed positively. Initially, 80.0% expressed supportive attitudes toward individuals with depression, while 20.0% held unsupportive views. Following the intervention, 100% of students demonstrated supportive attitudes. This change, illustrated in Table 2, reflects the reduction in stigma and increased empathy, possibly due to the relatable and youth-friendly nature of the intervention.

4.4 Statistical Analysis Results

The Wilcoxon Signed-Rank Test was used to determine the statistical significance of the differences in scores. For knowledge, the mean pretest score was 15.12 and the posttest mean was 21.34 ($p = 0.000$). For attitudes, the pretest mean was 42.51 and posttest mean was 50.65 ($p = 0.000$), as shown in Table 3. Both p-values were below 0.05, indicating a statistically significant effect of health education on both knowledge and attitudes toward depression.

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4.5 Interpretation Based on Theoretical Framework

These findings are consistent with the Health Belief Model (HBM) and the K-A-B model, where increased awareness and perceived severity (via knowledge) lead to attitudinal and behavioral shifts. The improved knowledge reflects enhanced perceived benefits and self-efficacy, while the attitude shift indicates reduced perceived barriers and social stigma. The results also align with the Theory of Planned Behavior (TPB), particularly the change in subjective norms and behavioral intentions.

4.6 Comparison with Previous Studies

These results support previous international studies. Swartz et al. (2017) reported similar outcomes in the United States using the Adolescent Depression Awareness Program, while Ismail et al. (2021) in Malaysia showed that structured education significantly improved mental health literacy among youth. The consistency of outcomes across contexts reinforces the efficacy of school-based mental health interventions.

4.7 Study Limitations

This study had several limitations. First, it did not include a control group, which limits the ability to attribute changes solely to the intervention. Second, the short time interval between pretest and posttest may overestimate immediate retention. Third, the study was limited to one school and a specific academic program, restricting generalizability.

5 CONCLUSION

This study demonstrated that a structured health education intervention significantly improved both knowledge and attitudes toward depression among 11th-grade vocational school students. The mean knowledge and attitude scores increased significantly after the intervention, and categorical shifts in knowledge and attitude levels were clearly observed. These outcomes support the relevance of school-based mental health promotion efforts, particularly in vocational settings that may have limited access to psychosocial support services.

Based on the Health Belief Model (HBM), the Knowledge–Attitude–Behavior (K-A-B) framework, and the Theory of Planned Behavior (TPB), the intervention successfully increased perceived benefits, reduced stigma (barriers), and promoted positive behavioral intentions. The findings confirm that mental health literacy interventions can play an essential role in reducing early-onset depressive symptoms by enhancing awareness and support-seeking behavior among adolescents.

Continuous health counseling programs are recommended to reinforce knowledge retention, address long-term behavioral changes, and contribute to the achievement of Sustainable Development Goal 3 (Good Health and Well-Being).

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