

Reducing Menarche-Related Anxiety Through Reproductive Health Education: A Quasi-Experimental Study

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Abstract

Background: Menarche is the first menstruation when a teenage girl enters puberty. Anxiety is the symptom that most often occurs in adolescent girls when facing menarche.

Objective: To identify the influence of adolescent reproductive health education on anxiety about facing menarche in grade 7 and 8 female students at MTS Al Husna Gembor, Tangerang City.

Method: Quasy Experimental with pre and posttest without control (without a control group), the researcher only intervened in one group without a comparison. The effect of treatment is assessed by comparing the pre-test scores with the post-test. The research sample was 54 respondents.

Results: Before being given reproductive health education interventions, the majority of respondents experienced moderate anxiety (66.7%). After being given reproductive health education interventions, the majority of respondents experienced mild anxiety (66.7%). There is an influence of health education on the level of anxiety facing menarche in grade 7 and 8 female students at MTS Al Husna Gembor Tangerang (p: 0.000).

Suggestion: It is hoped that health services, especially Community Health Centers, will increase health education and counseling activities that can increase adolescent knowledge regarding reproductive health, especially regarding menarche for adolescent girls. This is to increase the knowledge of young women so that they can reduce their anxiety levels when facing menarche.

Keywords: anxiety, menarche, health education

INTRODUCTION

Menarche, the first occurrence of menstruation, represents a major biological and psychological milestone in female adolescence. As a central marker of puberty, menarche signifies the onset of reproductive capacity and is often accompanied by a range of emotional responses, including anxiety, fear, and confusion, particularly when adolescent girls are insufficiently prepared (1). Anxiety surrounding

menarche is widely recognized as a result of poor menstrual literacy, sociocultural taboos, and limited communication regarding reproductive health within families and communities (2,3).

Globally, the average age at menarche varies between 12 and 14 years, though regional and socioeconomic factors influence its onset (4). In Indonesia, the 2018 Basic Health Research (RISKESDAS) report documented an average menarcheal age of 13 years, with onset as early

as 9 years and as late as 17 years (5). Despite this predictable biological process, inadequate knowledge about menstruation persists among Indonesian adolescents, with many reporting fear, shame, and misconceptions when facing their first menstrual experience (6).

Anxiety related to menarche has significant implications for adolescent health. Elevated premenarchal anxiety has been associated with negative self-perception, reluctance to seek help, school absenteeism, impaired social interactions, and poor menstrual hygiene practices (7,8). Persistent anxiety during this critical developmental window may also contribute to broader emotional difficulties, including depressive symptoms, low academic performance, and diminished quality of life in adolescence and beyond (11,12). These findings highlight the urgent need for early, accurate, and culturally sensitive reproductive health education initiatives aimed at equipping adolescents with knowledge and coping strategies during pubertal transitions.

Schools represent strategic venues for the delivery of health education, offering structured, age-appropriate, and context-specific interventions that reach a large proportion of adolescents during formative years. School-based reproductive health programs not only address menstrual biology but also work to normalize menstruation, dismantle stigma, and empower girls to manage their menstruation confidently and hygienically (9,10,13). Prior studies have demonstrated that such interventions enhance menstrual knowledge, reduce anxiety, improve menstrual practices, and foster positive attitudes toward menstruation (9,10). Moreover, when integrated into broader life skills or health promotion curricula, menstrual education is associated with improved self-efficacy and resilience among adolescent girls (14).

Despite growing international evidence, research in the Indonesian context remains limited, particularly regarding the direct psychological effects of school-based reproductive health interventions on menarche-related anxiety. Most available studies have focused on menstrual hygiene practices or general reproductive knowledge, with few addressing emotional outcomes linked to menarche preparedness. Therefore, this study seeks to fill this gap by evaluating the impact of reproductive health education on menarche-

related anxiety among Grade 7 and 8 students in a school setting in Indonesia.

Thus, this study aimed to examine the influence of reproductive health education on menarche-related anxiety among Grade 7 and 8 female students at MTS Al Husna Gembor, Tangerang. By addressing this gap, the study seeks to contribute to efforts aimed at improving adolescent reproductive health outcomes through targeted educational strategies.

METHODS

Study Design

This study employed a quasi-experimental design using a pretest-posttest without a control group framework. This design was chosen to evaluate the immediate effects of reproductive health education on menarche-related anxiety among adolescent girls without the influence of external comparison groups. Pre-intervention and post-intervention anxiety levels were measured and compared to assess the impact of the educational session.

Setting and Participants

The study was conducted at MTS Al Husna Gembor, located in Tangerang City, Indonesia. Participants included Grade 7 and Grade 8 female students who had not yet experienced menarche or were within one year of their first menstrual cycle. A total of 54 students were recruited using total sampling from eligible students who provided informed consent. Inclusion criteria were female students enrolled in Grades 7 and 8, willingness to participate with parental/guardian consent, and able to understand and respond to the study instruments. Exclusion criteria were students with diagnosed psychiatric conditions or cognitive impairments and students who had already participated in similar reproductive health programs in the past six months.

Intervention

Participants received a structured reproductive health education session focusing on understanding menstruation and menarche, managing menstrual hygiene, and coping strategies for anxiety related to menarche. The education was delivered via a face-to-face 60-minute session using interactive lectures, question-and-answer discussions, and educational leaflets specifically developed for adolescent comprehension levels. The

educational content was adapted from validated sources, including WHO adolescent health materials and the Indonesian Ministry of Health guidelines.

Measures

Anxiety related to menarche was measured using the Hamilton Anxiety Rating Scale (HAM-A), a widely validated instrument for assessing psychological and somatic anxiety symptoms. The HAM-A consists of 14 items rated on a scale of 0 (not present) to 4 (severe), with higher scores indicating greater anxiety levels. Pretest administered immediately before the educational session. While, posttest administered one week after the intervention to allow for knowledge assimilation.

Data Collection

Data collection was performed by trained research assistants under the supervision of the principal investigator. Standardized instructions were provided to minimize response bias. Confidentiality and anonymity of participants were maintained throughout the study.

Statistical Analysis

Data were analyzed using SPSS version 23. Descriptive statistics (frequencies, percentages,

means, and standard deviations) were used to summarize demographic characteristics and anxiety scores. Normality of the data was tested using the Kolmogorov-Smirnov test. The effect of the intervention was assessed using the paired t-test for normally distributed data. A significance level of $p < 0.05$ was considered statistically significant.

Ethical Considerations

The study was approved by the Ethics Committee. Informed consent was obtained from all participants and their guardians prior to data collection. The research complied with the principles outlined in the Declaration of Helsinki for ethical research involving human subjects.

RESULTS

Participant Characteristics

A total of 54 female students participated in this study. The majority were 13 years old (61.1%), while 38.9% were 14 years old. Most respondents were enrolled in Grade 7 (70.4%), with the remainder in Grade 8 (29.6%).

Table 1. Demographic Characteristics of Participants

Characteristic	Category	Frequency (n)	Percentage (%)
Age	13 years	33	61.1
	14 years	21	38.9
Grade	7th grade	38	70.4
	8th grade	16	29.6

Anxiety Levels Before and After Intervention

Before receiving reproductive health education, 66.7% of participants exhibited moderate anxiety, and 22.2% experienced severe anxiety. Following the intervention, the proportion of participants with mild anxiety increased to 66.7%, while 18.5% reported no anxiety.

Table 2. Distribution of Anxiety Levels Before and After Reproductive Health Education

Anxiety Level	Pretest n (%)	Posttest n (%)
Severe	12 (22.2)	0 (0.0)
Moderate	36 (66.7)	8 (14.8)
Mild	6 (11.1)	36 (66.7)
None	0 (0.0)	10 (18.5)

Mean Anxiety Scores

The mean anxiety score decreased significantly following the intervention, from 24.96 (SD = 2.80) at pretest to 16.91 (SD = 4.24) at posttest.

Table 3. Pretest and Posttest Anxiety Scores

Variable	Mean	Standard Deviation (SD)	Minimum	Maximum
Pretest Anxiety Score	24.96	2.80	20	29
Posttest Anxiety Score	16.91	4.24	6	26

The Kolmogorov-Smirnov test indicated that both pretest and posttest anxiety scores were normally distributed (Pretest $p = 0.055$, Posttest $p = 0.051$).

Statistical Analysis of Intervention Effect

A paired t-test revealed a significant reduction in anxiety levels following reproductive health education ($p < 0.001$).

Table 4. Paired t-Test Analysis of Anxiety Scores

Measure	Mean Difference	t-Value	p-Value
Pretest vs Posttest Anxiety	8.06	13.21	<0.001

DISCUSSION

Prior to the intervention, the majority of Grade 7 and 8 female students at MTS Al Husna Gembor experienced moderate anxiety (66.7%) related to facing their first menstruation. The mean pretest anxiety score was 24.96 (SD = 2.80), with scores ranging from 20 to 29. These findings align with previous studies showing that menarche often induces anxiety due to a lack of preparedness and knowledge (11). Anxiety is understood as a warning response to perceived threats, motivating protective behavior (11). In this context, students' anxiety stemmed from a lack of understanding about menstruation as a physiological process, consistent with findings by Suriati (12), who reported severe anxiety among students lacking information about menarche. Similarly, Zufita (13) highlighted that confusion, sadness, and fear commonly precede menarche in adolescents, further exacerbating anxiety. This underscores the critical need for anticipatory guidance and education to reduce psychological distress. Without adequate knowledge, adolescents may experience panic, shame, and hesitation in seeking help during menarche. Therefore, interventions aimed at improving adolescents' menstrual literacy are crucial. Increasing knowledge can foster a sense of control, diminish confusion, and facilitate healthier emotional responses to puberty. Counseling, both individual and group-based, as well as parental involvement, are essential complementary strategies to reinforce the information provided by schools.

Following the reproductive health education intervention, the majority of students (66.7%)

reported mild anxiety, with a mean posttest score of 16.91 (SD = 4.24). Notably, 18.5% of students reported no anxiety at all, reflecting a meaningful psychological improvement. This reduction from moderate to mild or no anxiety is in line with Suriati's findings (12), where educational interventions successfully alleviated premenarchal anxiety. Health education operates as a key promotive strategy that empowers individuals to improve and maintain their health across physical, mental, and social domains (14). In this study, reproductive health education specifically increased students' understanding of menarche, normalizing it as a developmental milestone rather than a frightening event. According to Notoatmodjo (14), effective health education must address multiple dimensions: promotion, prevention, curative action, and rehabilitation. Schools, as organized settings, offer optimal environments for implementing promotive and preventive health education, targeting adolescents at a critical stage of psychosocial development.

The Impact of Reproductive Health Education on Menarche-Related Anxiety

The paired t-test analysis revealed a statistically significant reduction in anxiety following the intervention ($p < 0.001$), with an average anxiety decrease of 8.06 points. These results support previous studies by Suriati (12) and Zufita (13), affirming that structured reproductive health education positively impacts adolescents' psychological readiness for menarche. Theoretical frameworks by Notoatmodjo (14) and Winarti (15) emphasize that exposure to health-related information leads to changes in

knowledge, attitudes, and behaviors (16-18). By delivering targeted messages through appropriate media and participatory learning methods, educational interventions can facilitate the internalization of positive health practices and emotional coping mechanisms. In this study, the use of interactive lectures combined with educational leaflets allowed for engagement and reinforcement of key messages (19,20). Consequently, students gained knowledge, developed realistic expectations about menstruation, and experienced a reduction in anxiety levels.

Implications

This study highlights the importance of incorporating reproductive health education into school curricula to enhance adolescents' preparedness for pubertal changes. Educators, healthcare providers, and policymakers should collaborate to design and implement comprehensive menstrual education programs starting from early adolescence. Strengthening menstrual health literacy has the potential to reduce school absenteeism, improve self-confidence, and promote adolescent mental health.

Additionally, involving families in menstrual education initiatives can bridge communication gaps and dismantle cultural taboos surrounding menstruation in Indonesian society.

Limitations

Several limitations should be noted. First, the study utilized a quasi-experimental design without a control group, limiting causal inference. Second, the study was conducted at a single institution, which may restrict the generalizability of the findings to other regions or populations. Third, short-term follow-up may not fully capture the sustainability of knowledge retention or long-term emotional outcomes. Future research should involve randomized controlled trials with larger, more diverse samples and longer follow-up periods.

CONCLUSION

Reproductive health education significantly reduced menarche-related anxiety among Grade 7 and 8 female students at MTS Al Husna Gembor. Structured, age-appropriate educational interventions delivered through schools play a pivotal role in supporting adolescents during pubertal transitions. Early, accurate menstrual education should be

prioritized to enhance girls' emotional well-being and empower them to navigate adolescence confidently.

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Author Contribution

TR : Conceptualization and Study Design, Methodology, Data Curation, Writing – Original Draft, Writing – Review & Editing
SB : Conceptualization and Study Design, Methodology, Formal Analysis,

Conflict of Interest

The authors declare no conflict of interest.

Data Availability Statement

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

REFERENCES

1. Sidani S, Collins L, Harbman P, MacMillan K, Reeves S, Hurllock-Chorostecki C, et al. Development of a measure to assess healthcare providers' implementation of patient-centered care. *Worldviews Evid Based Nurs.* 2014;11(4):248–57
2. PPNI T. Standar Diagnosis Keperawatan Indonesia (TPSD PPNI (Ed.). DPP PPNI; 2017.
3. Shellasih NM, Ariyanti F. Factors of primary dysmenorrhea in junior high school students in South Tangerang City, Indonesia, 2018. 2020;
4. Aisy JR. Faktor-Faktor yang Memengaruhi Usia Menarke. UNS (Sebelas Maret University); 2024.
5. Gulbrandsen K, Håkonsen LB, Ernst A, Toft G, Lyngsø J, Olsen J, et al. Age of menarche and time to pregnancy. *Human Reproduction.* 2014;29(9):2058–64.
6. Proverawati A, Misaroh S. Menarche menstruasi pertama penuh makna. Yogyakarta: Nuha Medika. 2009;144.

7. Dinas Kesehatan Provinsi Banten. Profil Kesehatan Provinsi Banten 2021. Dinas Kesehatan Provinsi Banten. 2022;
8. Mustafa M, Zaman KT, Ahmad T, Batool A, Ghazali M, Ahmed N. Religion and women's intimate health: towards an inclusive approach to healthcare. In: Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems. 2021. p. 1–13.
9. Rachmawati AA, Astuti Am. Hubungan Pengetahuan Dengan Tingkat Kecemasan Remaja Putri Dalam Menghadapi Menarche Pada Siswi Sd Negeri Pajang Iii Surakarta. Jurnal Kesehatan Tambusai. 2024;5(3):8154–60.
10. Notoatmodjo. Metodologi penelitian kesehatan edisi revisi. Edisi Revi. Jakarta: Rineka Cipta; 2010.
11. Nevid JS, Chozim M. Masa Remaja dan Masa Dewasa: Konsepsi dan Aplikasi Psikologi. Nusamedia; 2021.
12. Suriati I, Ilmawati I. Pengaruh Pendidikan Kesehatan Tentang Menstruasi Terhadap Kecemasan Menghadapi Menarche. Voice of Midwifery. 2019;9(2):877–84.
13. Zuvita F, Arneliwati A, Nauli FA. Hubungan dukungan sosial teman sebaya dengan body image pada remaja. Jurnal Ners Indonesia. 2022;12(2):177.
14. Notoatmodjo. S. Health Education and Behaviour. Rineka Cipta. 2018;
15. Winarti E, Rohmawati H, Nafiah HU, Diana MA, Kale DP. Pengaruh Pendidikan Kesehatan Terhadap Pengetahuan Remaja Tentang Kesehatan Reproduksi. Java Health Jounal. 2020;7(2).
16. Sariningsih A, Anggraini N. The Effect of Reproductive Health Education on “Bridge to Be” Knowledge in Pre-Marriage Preparation in the Working Area of Sukadami Public Health Center. Jurnal Keperawatan Komprehensif (Comprehensive Nursing Journal). 2022;8(3).
17. Sidani S, Reeves S, Hurlock-Chorostecki C, van Soeren M, Fox M, Collins L. Exploring differences in patient-centered practices among healthcare professionals in acute care settings. Health Commun. 2018;33(6):716–23.
18. Ahmed S, Djurkovic A, Manalili K, Sahota B, Santana MJ. A qualitative study on measuring patient-centered care: Perspectives from clinician-scientists and quality improvement experts. Health Sci Rep. 2019;2(12):e140.
19. Sukyati I. Literature Review: Description of the Psychological Impact of Social Support on Gynecological Cancer Patients. Jurnal Keperawatan Komprehensif (Comprehensive Nursing Journal). 2023;9(1).
20. Ahmed S, Djurkovic A, Manalili K, Sahota B, Santana MJ. A qualitative study on measuring patient-centered care: perspectives from clinician-scientists and quality improvement experts. Health Sci Rep. 2019;2(12):e140.