

## ORIGINAL ARTICLE

### Level of menarche anxiety before and after adolescent reproductive health education in SDN 19 Lahat Students

Helmi R Gunadi<sup>1\*</sup>, Arifin Soenggono<sup>2</sup>, Silsa Mutmaini<sup>3</sup>

- 1) Department of Public Health Sciences, Faculty of Medicine, Universitas Pasundan, Indonesia.
- 2) Department of Basic Medical Sciences, Faculty of Medicine, Universitas Pasundan, Indonesia.
- 3) Medical Education Study Program, Faculty of Medicine, Universitas Pasundan, Indonesia.

\*Corresponding author. E-mail: [helmirosagunadi@unpas.ac.id](mailto:helmirosagunadi@unpas.ac.id)

#### ABSTRACT

Women menstruate at varying ages, making it difficult for adolescent girls to describe what is going on with their bodies. They are unprepared and unable to manage their menstruation appropriately due to the limited source of information they receive. As a result, teenage girls experience anxiety symptoms such as fear, anxiety, and discomfort. Anxiety can be decreased by giving the female students sufficient education associated with reproductive health prior to menarche via video media, presentations, discussions, and questions and answers. In this study, an experimental strategy was being used, with a pre-experimental design and a pretest and posttest one-group design. Because the study was conducted on variables for which no data was available, the process had to be modified by providing particular treatments to the research subjects, which were then observed and measured. Before the intervention, it was known that 22 respondents (58%) were not anxious, 4 respondents (11%) had mild anxiety, 7 respondents (18%) had moderate anxiety, 5 respondents (13%) had severe anxiety, and there were no respondents with very severe anxiety. Following the health education intervention, it was observed that 25 respondents (66%) had no anxiety, 6 respondents (16%) had mild anxiety, 4 respondents (11%) had moderate anxiety, and 3 respondents (8%) had severe anxiety but did not report it. There were some people who were experiencing significant anxiety. The students of SD Negeri 19 Lahat experienced a significantly reduced anxiety concerning menarche both before and after receiving reproductive health education.

**Keyword:** Anxiety, education, menarche, menstrual cycle, reproductive health.

## INTRODUCTION

Menarche is a crucial milestone in the maturation of a female. Research conducted in the United States has shown that the average age of menarche for adolescent females decreased from 12.1 years in 1995 to 11.9 years in the period of 2013-2017.<sup>1</sup> The Ministry of Health of the Republic of Indonesia reports that the average age of menarche for adolescent girls has declined to approximately 12-14 years old.<sup>2</sup> On average, adolescent girls in the regions of Sumatra, Java-Bali, Nusa Tenggara, Kalimantan, Sulawesi, Maluku, and Papua experience menarche at the age of 12.96 years.<sup>3</sup> The mean age of menarche for females born between 1990 and 1994 in the Sumatra region was 13.6 years.<sup>3</sup>

The disparity in the onset of menarche poses challenges for young women in comprehending the physiological changes occurring in their bodies. They experience menarche without prior knowledge, lack preparation, and are not provided with education on how to effectively manage their menstrual cycles.<sup>4</sup> Eight elementary school girls were interviewed, and from their comments, it was found that five of them had anxiety and fear during their first menstruation due to their lack of knowledge about menstruation and what to do.<sup>2</sup> A significant number of girls experience anxiety over concealing the onset of their menstruation to avoid detection by others.<sup>4</sup> In order to prevent any possible humiliation caused by menstruation leaking on their attire, several individuals may intend to skipping school. A study including 222 women revealed a consensus among them that they experience heightened anxiety, reduced confidence, decreased engagement in physical activities, and a preference for staying at home rather than attending school during their menstrual cycle. Additionally, both men and women are frequently subjected to menstruation-related mockery. Some individuals avoid discussing menstruation with their female friends due to the fear of being mocked.<sup>5</sup>

This demonstrates that the subject of discussing menstruation beyond early adolescence is considered taboo, leading to feelings of anxiety among certain female students upon reaching menarche.

Anxiety is an ambiguous and all-encompassing concern, associated with sensations of unpredictability and powerlessness.<sup>6</sup> The worry experienced during menarche can significantly affect the females' psychological well-being by diminishing their self-assurance and perceived ability. Engaging in self-assertion to preserve their sexuality and reproductive abilities can pose a risk to their future.<sup>4</sup> In order to prevent this, one effective measure is to offer comprehensive education on teenage reproductive health. The age range of 10 - 14 years, known as early adolescence, is deemed more conducive to the implementation of fundamental reproductive health interventions. These interventions not only address immediate reproductive health concerns but also prove valuable in navigating the challenges of puberty. Hence, the author intends to perform a study that compares the anxiety levels of adolescent primary school students before and after receiving reproductive health education, specifically focusing on the period of menarche.<sup>2,7</sup>

## METHODS AND SUBJECT

The investigation was conducted on August 2, 2022, at SD Negeri 19 Lahat, a prominent public primary educational institution boasting the largest student population within the Lahat Regency, situated in the esteemed South Sumatra Province. The study cohort consisted of female students aged 10 years and older, who satisfied the predetermined criteria for inclusion and exclusion. A minimum of nineteen samples is required for the study. In this study, a comprehensive collection of 38 samples was procured from the educational institution under the diligent supervision of the research team.

This study will utilize an experimental methodology employing a pre-experimental design in the form of a pre-test and post-test one group design. The current study will primarily concentrate on variables for which no data has been collected yet. This means the participants of this study will have to go through a manipulation procedure that include

encompassing the administration of distinct treatments to the research participants, subsequently followed by the assessment of their effects.

The study protocol was granted approval by the ethics committee of Padjadjaran University, with the assigned reference number 723/UN6.KEP/EC/2022 and Protocol Number 2206020646.

## RESULTS AND DISCUSSION

### Respondent description

**Table 1.** Characteristics of Respondents Based on Age

Age (year)	Amount (n)	Percentage (%)
10	7	18
11	30	79
12	1	3
Total	38	100

The study sample primarily consisted of female students, with a majority (79%) falling within the recommended age range of 11 years as stipulated by the Ministry of Education and Culture for

commencing primary school education.<sup>12</sup>

### Changes in Anxiety Levels Before and After Health Education

**Table 2.** Anxiety levels Anxiety Levels Before and After Reproductive Health Education

Anxiety Level	Before Education		After Education	
	Amount (n)	Percentage (%)	Amount (n)	Percentage (%)
Not anxious	22	58	25	66
Mild	4	11	6	16
Moderate	7	18	4	11
Severe	5	13	3	8
Very Severe	0	0	0	0
Total	38	100	38	100

There was a noticeable shift in the anxiety levels of all participants before and after the health education intervention. Those who initially did not experience anxiety saw a slight increase of 3 (13.79%), while individuals with mild anxiety experienced a more significant increase of 2 (50%). On the other hand, participants with moderate anxiety witnessed a decrease of 3 (42.86%), and those with severe anxiety saw a decrease of 2 (40%). Interestingly, there were no participants with very severe anxiety both before and after the educational program.

### Hypothesis Testing Differences in Anxiety Levels

According to the HARS Scale, the majority of participants experienced mild

anxiety before receiving health education. This category of anxiety is characterized by frequent symptoms and is associated with feelings of uncertainty and general unease.<sup>19</sup> According to a recent study published in a prestigious academic journal, it has been found that young women who feel anxious during their first menstrual period can be affected by various factors such as age, education, physical well-being, environment, and family dynamics.<sup>23</sup> Many young women feel unprepared and bewildered when they experience menstruation for the first time, despite the fact that nearly all of them (97%) have heard about it prior to their first period. This lack of understanding about menarche can contribute to their uncertainty.<sup>14</sup>

**Table 3.** Analysis Test of Differences in Anxiety Levels

	Median (Min – Max)	p-Value
Antiety level before education	14 (3 – 35)	≤0,001
Antiety level before education	10 (0 – 31)	

Wilcoxon test, 31 subjects' anxiety level decreased, 4 subjects remained the same and 3 subjects' anxiety level increased

Following the administration of health education, the research findings indicated a decrease in anxiety levels from mild to none. The test results revealed a p-value of 0.001 ( $p \leq 0.05$ ) for the frequency distribution of 38 participants, suggesting a significant impact on the degree of anxiety before and after the intervention. Research has demonstrated that delivering reproductive health education to teenagers has a positive impact on reducing anxiety levels among female students when they experience menarche.

Female students will acquire knowledge about menarche from the information they get, which will have a significant impact.<sup>17</sup> Supporting the hypothesis that individuals with lower

levels of knowledge are less inclined to engage in preparations for menstruation, such as acquiring knowledge, contemplating, forming beliefs, and experiencing emotions. This lack of preparation might lead to unpleasant emotions, sadness, and a sense of superiority.<sup>13,15</sup>

Reproductive Health Education, particularly aimed at adolescent females regarding menarche, is a type of intervention or endeavor to communicate health-related knowledge. The provided information covered topics such as managing menstrual blood, duration of menstruation, utilization of sanitary napkins, appropriate protocols for disposing of sanitary napkins at school, vaginal hygiene, addressing complaints

during menstruation, and additional insights on menstruation in Islam. This material is presented with the aim of promoting optimal menstrual health in adolescent females.<sup>17,19</sup>

This study aligns with the research conducted by Hermawati et al., in which participants who were exposed to the Health Education Model exhibited a 61.1% increase in knowledge and a more positive attitude towards menarche compared to the control group. Knowledge and cognition are crucial aspects that influence an individual's behavior. Hence, it is imperative to offer comprehensive education on adolescent reproductive health in order to enhance comprehension and awareness, particularly among teenagers on the brink of experiencing menarche, thereby equipping them with the required knowledge and skills to navigate this pivotal stage of development.<sup>11</sup>

To effectively manage menstrual anxiety, it is important to have a strong social support system and to enhance one's self-efficacy. According to Social Cognitive Theory (SCT), conducting menstrual health treatments in schools enables individuals to acquire observational learning skills. Consequently, individuals develop self-efficacy in adopting desired behaviors and receive rewards for engaging in these behaviors.<sup>20</sup> Consequently, researchers implemented an intervention for reproductive health education that involved interactive presentations, sharing experiences, and question-and-answer sessions. The objective was to enhance the self-efficacy of female students in dealing with anxiety related to the onset of menstruation.

## CONCLUSION

Research has demonstrated that providing reproductive health education to female students can effectively lower their anxiety levels when they experience menarche. Inadequate understanding of menarche leads young women to express

feelings of unpreparedness and confusion upon experiencing their first menstruation.

## ACKNOWLEDGEMENTS

The author expresses gratitude to all respondents, teaching staff, and management of SD Negeri 19 Lahat, South Sumatra, for their valuable assistance in the research. Additionally, the author would like to thank all individuals who have provided support and motivation throughout the preparation of this study.

## DECLARATION OF INTERESTS

Hereby, we declare that there is no conflict of interest in the scientific articles we write.

## FUNDING

This research was funded by private funds and did not receive a grant from any institution.

## REFERENCES

1. Martinez GM. National Health Statistics Reports, Number 146, September 10, 2020.; 1995. Available from <https://www.cdc.gov/nchs/products/index.htm>.
2. Sinaga ES, Lubis A. Factors Relating to Siswi Behavior Class VII In Facing Menarche. *Gentle Birth*. 2021;4(1).
3. Sudikno, Sandjaja. Usia Menarche Perempuan Indonesia Semakin Muda: Hasil Analisis Riskesdas 2010 Evidence Of Downward Secular Trend In Age At Menarche Among Indonesian Women : Secondary Data Analisis Of Riskesdas 2010. *Jurnal Kesehatan Reproduksi*. 2019;10(2):163-171. doi:10.22435/kespro.v10i2.2568.163-171
4. Sommer M, Sutherland C, Chandra-Mouli V. Putting Menarche and Girls Into the Global Population Health Agenda. *Reprod Health*. 2015;12(1). doi:10.1186/s12978-015-0009-8

5. Tanton C, Nakuya K, Kansime C, et al. Menstrual Characteristics, Menstrual Anxiety and School Attendance Among Adolescents in Uganda: a Longitudinal Study. *BMC Womens Health*. 2021;21(1). doi:10.1186/s12905-021-01544-6
6. Starrs AM, Ezech AC, Barker G, et al. Accelerate Progress—Sexual And Reproductive Health And Rights For All: Report Of The Guttmacher–Lancet Commission. *The Lancet*. 2018; 391(10140) : 2642-2692. doi:10.1016/S0140 6736(18)30293-9
7. Prijatni I. Kesehatan Reproduksi Dan Keluarga Berencana. Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan; 2013.
8. Tortora GJ, Derrickson B. Principles Of Anatomy and Physiology. 12th ed. John Wiley & Sons, Inc; 2018.
9. Sherwood L. Human Pgsiology From Cells to Systems. 9th ed. Cengage Learning; 2016.
10. Vismara M, Girone N, Ciriogliaro G, et al. Peripheral biomarkers in DSM-5 Anxiety Disorders: An Updated Overview. *Brain Sci*. 2020;10(8):1-37. doi:10.3390/brainsci10080564
11. Hermawatu, Muchtar M, Wiwi S., Syarwini. Pendidikan Kesehatan Dalam Kesiapan Menghadapi Menarche Di Sekolah Dasar. *Jurnal Penelitian dan Kajian Ilmiah*. Vol. 10. UMSB. 2016.
12. Herwati, Muchtar M. Model Pendidikan Kesehatan Terhadap Pengetahuan Dan Sikap Dalam Kesiapan Menghadapi Menarche Di Sekolah Dasar. *Jurnal Penelitian dan Kajian Ilmiah* Vol. 11. No. 75. UMSB. 2017. DOI: <https://doi.org/10.33559/mi.v11i75.453>
13. Mendle J, Ryan RM, P McKone KM. Age at Menarche, Depression, and Antisocial Behavior in Adulthood.; 2018. Available from [http://www.publications.aap.org/pediatrics/articlepdf/141/1/e20171703/1066419/peds\\_20171703.pdf](http://www.publications.aap.org/pediatrics/articlepdf/141/1/e20171703/1066419/peds_20171703.pdf)
14. Kautsar F, Gustopo D, Achmadi F. Uji Validitas Dan Reliabilitas Hamilton Anxiety Rating Scale Terhadap Kecemasan Dan Produktivitas Pekerja Visual Inspection PT. Widatra Bhakti. *Prosiding SENATEK* 2015. 2017;1(A):588-592.
15. Kemenkes R. Pedoman Dan Standar Etik Penelitian Dan Pengembangan Kesehatan Nasional.; 2017.
16. Ningrum MWP, Purnomo W. Relationship Between Readiness And Anxiety Level In Elementary School Students Facing Menarche In Pademawu Sub-District, Pamekasan. *Jurnal Biometrika dan Kependudukan*. 2020;9(2):95. DOI : 10.20473/jbk.v9i2.2020.95-103
17. Burnet Institute, Water Aid Australia, Aliansi Remaja Independen; Menstrual Hygiene Management In Indonesia Understanding Practices, Determinants and Impacts Among Adolescent School Girls.; 2015. Available from [www.aliansiremajaindependen.org](http://www.aliansiremajaindependen.org)
18. Lutfi I, Analisis Kesiapan Siswi Sekolah Dasar Dalam Menghadapi Menarche; *Jurnal Bioetika dan Kependudukan*. 2017 ; 5(2):135. DOI :10.20473/jbk.v5i2.2016.135-145
19. Emdadul Haque S, Rahman M, Itsuko K, Mutahara M, Sakisaka K.; The Effect Of A School-Based Educational Intervention On Menstrual Health: An Intervention Study Among Adolescent Girls In Bangladesh. *BMJ Open*. 2014; 4:4607. DOI : 10.1136/bmjopen-2013
20. Intan O., Hudaya N, Gantini D, Patimah S, Kesehatan Tasikmalaya P. Pengaruh Pendidikan Kesehatan Reproduksi (Underwear Rules) Terhadap Pengetahuan Anak Prasekolah. *Edutech : Jurnal Teknologi Pendidikan* 18(3) : 2019. DOI :10.17509/e.v18i3.18071