

The relationship between knowledge about menstruation and anxiety levels in facing menarche in female students

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Abstract

Introductions: Knowledge about menstruation is a special concern for women who are going through puberty. Menarche or what is also called the beginning of menstruation in women currently occurs earlier, namely at an early age. The average age of menarche is 12-14 years with a prevalence of 60%, while at the age of 11-12 years it is 30.3% and at the age of 13 years it is 30%. Some of them experience menarche after they are thirteen years old. Lack of knowledge about menstruation in children who are going through early puberty can result in anxiety disorders

Methods: This study is a literature review, taken from sources on Google Scholar, PUBMED, and ScienceDirect, with a focus on research published between 2015 and 2025. This study only includes original research articles in English or Indonesian with all the necessary components.

Results and Discussion: From the literature search, 10 studies were obtained that met the inclusion criteria. All studies showed a relationship between the level of knowledge of female students and their anxiety.

Conclusion: Based on the study, the level of knowledge of female students about menarche is related to the level of anxiety in female adolescents.

Keywords: Menarche; Female Students; Anxiety; Menstruation; Knowledge

1. Introduction

Menstrual knowledge is a special concern for women who are going through puberty. The first puberty experienced by women is called menarche. The first menstrual period indicates a more advanced stage of female sexual maturity. Menarche or what is also called the beginning of menstruation in women currently occurs earlier, namely at an early age (2). According to research in Brazil, the results showed the highest age range for menarche at the age of 11 years. A total of 381 girls aged ≤ 11 years experienced menarche, equivalent to 72.70% of the total age. At the age of 12, this percentage increases by 10%, at the age of 13 by 7.9%, at the age of 14 by 2.8%, and finally at the age of 15 it increases by 7% (8) According to research in Jember, most female students in one elementary school still have a low level of knowledge about menstruation, namely 54.1% and 45.9% have good knowledge about menstruation. Lack of knowledge about menstruation in children who are experiencing early puberty can result in anxiety disorders (11)

Anxiety disorders are characterized by feeling excessive, continuous anxiety and difficulty controlling oneself. If this problem is allowed to continue, it can cause worry that interferes with daily routines, and can also hinder academic

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achievement which can reduce the quality of life. Anxiety disorders tend to occur in women compared to men. This occurs due to differences in the brain and hormones in women related to the reproductive process. Women have to face more physical and psychological events than men, for example menarche, which results in their first period, pregnancy, and menopause. In addition, the culture that has developed in society is more focused on women in facing life. Therefore, researchers are interested in finding out more about the relationship between knowledge about menstruation and the level of anxiety in facing menarche in female students (13)

2. Material and methods

This study used a literature review methodology to explore the relationship between students' level of knowledge about menarche and students' anxiety. A total of 10 articles were selected based on certain inclusion and exclusion criteria. The inclusion criteria for the literature were studies that focused on the correlation between sleep quality and primary dysmenorrhea, articles published in English or Indonesian, full-text availability, and open access. Exclusion criteria included non-research studies, intervention-based studies, qualitative studies, and systematic reviews. The selected articles were required to present original research results that directly addressed the relationship between students' level of knowledge about menarche and students' anxiety. The articles included in this review were published between 2015 and 2025, to ensure their relevance to current developments in the field. Collecting articles, a search was conducted in several leading databases, including Google Scholar, PUBMED, and Science Direct. Keywords used in the search process included "menarche", "students", and "anxiety". Each article was analyzed descriptively with a focus on important aspects such as authors and year of publication, research location, research design and methods, article characteristics, research participants, and a brief summary of research findings. This descriptive analysis aims to synthesize evidence clearly and systematically to answer the research questions effectively.

3. Results and discussion

Ten articles— five in English and five in Indonesia —have been reviewed and analyzed as follows.

Table 1 Results of Review of 10 Articles

No	Author	Research Title	Location	Method	Subject	Result
1.	Ananda (2019)	Hubungan Tingkat Pengetahuan Dengan Tingkat Kecemasan Remaja Dalam Menghadapi Menarche Pada Siswi Kelas V Dan VI Di SD Negeri 1 Ceper Klaten (Relationship Between Knowledge Level And Anxiety Level Of Adolescents In Facing Menarche In Grade V And Vi Students At 1 Ceper Klaten Elementary School)	1 Ceper Klaten Elementary School	Cross Sectional study	31 female students in grades V and VI	The majority of respondents have a sufficient level of knowledge of 15 people (48.4%). The majority of respondents experience moderate anxiety of 16 people (51.6%). From the results of the chi-square test with $\alpha = 0.05$, the p-test value is (0.003) with a moderate relationship (0.494).
2.	Deade., dkk (2022)	Gambaran Tingkat Pengetahuan Terhadap Kesiapan Remaja Putri Pra-Pubertas Dalam Menghadapi Menarche Di Panti Asuhan Aisyiyah Bukittinggi Tahun 2021 (Overview Of The Level Of Knowledge Of Pre-Puberty Adolescent Girls' Readiness In Facing Menarche At Aisyiyah Bukittinggi Orphanage In 2021)	Aisyiyah Bukittinggi Orphanage	Quasi-experimental research design with pretest and posttest with control group design	Teenage girls aged 10-19 years who are in Aisyiyah Bukittinggi Orphanage. The population of teenagers is 20 people	The distribution of the frequency of readiness of pre-pubertal girls in facing menarche at the Aisyiyah Orphanage in Bukittinggi in 2021, adolescents who are ready to face menarche are 15 people (75.0%) and 5 people are not ready (25.0%).
3.	Putri (2023)	Hubungan Tingkat Pengetahuan Tentang Menstruasi Dengan Tingkat Kecemasan Remaja Awal Putri Dalam Menghadapi Menarche Di SD Saraswati Tabanan (Relationship Between Knowledge Level About	Saraswati Elementary School Tabanan	cross sectional	The subjects in this study were 58 grade V students	Mild anxiety level of 19 respondents with a percentage of 76.0%, sufficient knowledge level with moderate anxiety level of 17 respondents with a percentage of 70.8%, poor knowledge level with moderate anxiety level of 9 respondents with a percentage of 100%. Based on the results of the Spearman-Rank correlation test, a p-

		Menstruation And Anxiety Level Of Early Adolescent Females In Facing Menarche At Saraswati Elementary School Tabanan)				value of 0.000 was obtained where p-value <0.05
4.	Ivanna and Suwardi (2022)	Pengetahuan Remaja Tentang Menstruasi Terhadap Tingkat Kecemasan Menghadapi Menarche (Adolescents' Knowledge About Menstruation and Anxiety Levels Facing Menarche)	Sukur Presidential Elementary School and Kolongan Elementary School,	cross sectional	96 adolescent girls aged 9-11 years in grades IV, V and VI	The majority of female adolescents have less knowledge, as many as 59 (61.5%) respondents, most of whom are at the panic level, 48 (50%) respondents. There is a strong and significant relationship with a negative direction, p value = 0.000 ≤ 0.05 with a correlation coefficient value of r = -0.662
5.	Febrianti., dkk (2024)	Hubungan Tingkat Pengetahuan Tentang Menstruasi Pertama (Menarche) Dengan Tingkat Kecemasan Menghadapi Menarche Pada Siswi Kelas V Dan VI Di SDN Tanjakan 4 Rajeg Kabupaten Tangerang (Relationship Between Knowledge Level About First Menstruation (Menarche) And Anxiety Level In Facing Menarche In Grade V and VI Students At Elementary School Tanjakan 4 Rajeg, Tangerang Regency)	Elementary School Tanjakan 4 Rajeg, Tangerang Regency	cross sectional	82 female students Grade V and VI Students At Elementary School Tanjakan 4 Rajeg, Tangerang Regency	Respondents as many as 41.5% had poor knowledge about menarche, while good and sufficient knowledge were 29.3% respectively. As many as 57.3% experienced severe anxiety, followed by moderate anxiety (19.5%) and mild anxiety (12.2%). Chi-square analysis showed (p-value = 0.000).
6.	Sari and Effendy (2019)	The Effect Of Health Education About Menarche On Anxiety In Facing Menarche In 5th And 6th Grade Students	SDIT Permata Mulia.	pre experimental design with one group pre-post-test design	28 responders on V and VI graders at SDIT Permata Mulia	Anxiety student before being given health education about menarche mostly moderate anxiety at (53.6%). While anxiety after students are given health education about menarche, mostly mild anxiety (57.1%). Statistical test results obtained $\rho = 0.00 < \alpha = 0.05$
7.	Ningrum and	Relationship Between Readiness And Anxiety Level In	Murtajih 3 Public, Elementary School,	cross sectional	The population	The results of the study were 49.3 percent of students had sufficient

	Purnomo (2020)	Elementary School Students Facing Menarche In Pademawu Sub-District, Pamekasan	West Pademawu 1 Public Elementary School, Sentol 1 Public Elementary School, Lawangan Daya 3 Public Elementary School, East Barurambat 1 Public Elementary School, and Murtajih Public Elementary School		of this research is class VI students of public elementary schools in Padewamu, Pamekasan in 2019 as many as 556 students.	knowledge about menarche. As many as 38.7 percents of students received family support about moderate menarche. Furthermore, 68 percent of students were not ready to face menarche, and 45.3 percent of students experienced moderate anxiety. In the statistical test results obtained a correlation value of 0.001.
8.	Fauziyah., et al (2020)	Correlation Between Knowledge, Mother's Support, Peer Support with Anxiety to Confront Menarche among Adolescents at Elementary school: A Correlational Study	Elementary School Rungkut Menanggal 1, Rungkut Menanggal 2, and Rungkut Kidul 1	cross sectional	The respondents were 108 students.	The result of statistical test showed that knowledge ($r = -0.626$ $p = 0.018$), mother's support ($r = -0.725$ $p = 0.000$) and peer support ($r = -0.581$ $p = 0.000$) correlated with the anxiety of adolescent's anxiety in confronting menarche.
9.	Fitria et al (2025)	The Relationship Between Menarche Knowledge And Anxiety Levels In Elementary School Students Aged 11-12 Years At Sdn Limusnunggal 01 Bogor Regency In 2022	Elementary School Limusnunggal 01 Bogor Regency	cross sectional	population of students of SDN Limusnunggal 01 totaling 135 and samples totaling 77 who had menarche.	The results of respondents who had less knowledge of menarche as many as 51 respondents (66.2%) and had a high level of anxiety as many as 44 respondents (57.1%) obtained p-value ($0.000 < 0.05$).
10.	Assehro (2023)	The Relationship between Knowledge about Menstruation and Readiness to Face Menarche in Grade 5 Female Students at Muhammadiyah Elementary School Wirobrajan 3 Yogyakarta	Elementary School (SD) Muhammadiyah Wirobrajan 3 Yogyakarta.	cross sectional	10-11 years old female students at SD Muhammadiyah Wirobrajan 3 Yogyakarta with the total respondents is 39.	the Spearman's Rank Test statistically had a correlation coefficient value of 0.343 with a significant level of p value of $0.032 < 0.05$. It could be seen that the correlation coefficient obtained in this study was 0.343.

Based on the review of 10 articles, all articles showed a significant relationship between the level of female students' knowledge about menarche and the level of female students' anxiety. These studies emphasize that low quality of knowledge is associated with high levels of anxiety.

Based on the research results of Deade., et al. (2022) (4), the most frequently used criteria to determine the early period of a girl's adolescence and also an event that is considered the most important part is the onset of the first menstruation (menarche) in the age range of 10-16 years or in early adolescence before entering the reproductive period, so it requires special attention because adolescent girls who were previously unprepared for the arrival of menarche tend to show negative attitudes, such as feeling troubled, physical discomfort that causes behavioral limitations, and emotional changes. The factors that cause anxiety in adolescent girls when facing menarche are because adolescent girls have less knowledge. Anxiety experienced by adolescent girls is also caused by adolescents not knowing the changes that occur when facing menarche, adolescent girls feel ashamed because of physical changes in the body, feel afraid and disgusted with blood, afraid of feeling pain when menstruating (10)

According to Putri (2023) (14) Lack of knowledge about menarche is one of the causes of anxiety disorders in adolescent girls because not all adolescent girls know about menarche or menstruation and how to deal with it. Anxiety or feelings of anxiety itself is a condition that will be experienced when thinking about something unpleasant happening. Anxiety is an emotional response to an assessment that occurs in an individual, but it depends on how the individual perceives their anxiety, this can come from stress stimulation that comes from outside or from within. There are several factors that can influence a person's knowledge, including information, environment, and age. So the better the information obtained by early adolescent girls, the better the level of knowledge they have. On the other hand, if the information obtained is lacking, the level of knowledge possessed by early adolescent girls will also be lacking.

4. Conclusion

A review of ten journal articles showed a relationship between students' level of knowledge about menarche and students' anxiety. Adolescent girls with low levels of knowledge mostly experienced moderate to severe anxiety in facing the onset of menstruation or menarche.

Compliance with ethical standards

Disclosure of conflict of interest

There is no conflict of interest.

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