



# The Relationship of Knowledge of Prepuberty Adolescent Girls and Readiness for Menarche

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## ABSTRACT

*Menarche is the first menstruation which usually occurs between the ages of ten and sixteen years or at the beginning of adolescence in the middle of puberty before entering the reproductive period. The aim of this research was to determine the relationship between prepubertal adolescent girls' knowledge and readiness to face menarche at SDN 7 Tabongo, Gorontalo Regency. The research method uses quantitative research using an analytical research design with a crosssectional approach. The population in this study were all prepubertal teenage girls in grades IV, V, and VI at SDN 7 Tabongo, Gorontalo Regency who had not experienced menstruation. Sampling in this research used a total sampling technique. The number of samples used was 41 samples. The results of the research using the chi-square test obtained a p-value of 0.000 (<0.05), meaning that there is a relationship between knowledge and readiness for menarche in young women at SDN 7 Tabongo, Gorontalo Regency. Where good knowledge can certainly increase readiness in facing menarche. It is hoped that this research can provide input for nurse practitioners in providing education about readiness for menarche.*

## 1. INTRODUCTION

Adolescence represents a critical transitional period between childhood and adulthood, marked by a series of complex physical, emotional, and psychological changes, particularly those associated with the onset of puberty. According to the World Health Organization (WHO, 2024), adolescence is defined as the period of human development occurring between the ages of 10 and 19 years. In alignment with this, the United Nations Children's Fund (UNICEF, 2024) reports that there are currently 1.3 billion adolescents worldwide more than ever before comprising approximately 16% of the global population. Similarly, the United Nations also categorizes adolescents as individuals between the ages of 10 and 19 years. In Indonesia, data from the Central Statistics Agency in 2022 indicated that the adolescent population had reached approximately 68.82 million individuals.

During adolescence, individuals typically undergo both the prepubertal and pubertal phases. The prepubertal phase, often referred to as the maturation stage, is characterized by the emergence of secondary sexual characteristics; however, the reproductive organs are not yet fully developed. In contrast, puberty is a biologically driven process that is central to the adolescent stage and marks the beginning of reproductive capability (Nur et al., 2024). Secondary sexual characteristics during puberty include noticeable changes in body shape, such as breast development and the widening of the hips in females. These physical transformations can sometimes give rise to feelings of dissatisfaction or concern regarding body image, often prompting adolescents to compare their physical appearance to that of others.

Among adolescent girls, one of the most significant markers of puberty is the onset of menarche, which refers to the first occurrence of menstruation (Damayanti et al., 2024). Menarche typically occurs between the ages of 10 and 16 and signifies the transition into reproductive maturity within the broader context of puberty (Herwati & Murniati, 2022). Being prepared for menarche involves not only a cognitive understanding of menstruation but also the emotional and behavioral readiness to manage it when it occurs. This preparedness is essential to ensure that

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adolescent girls can handle the experience of menstruation in a healthy and informed manner. It reflects an individual's comprehension of what menarche entails and a proactive attitude toward the actions required when it happens (Hasibuan et al., 2024).

The onset of menarche can have both psychological and physical implications. A lack of knowledge regarding menarche may lead adolescents to perceive the experience as frightening or overwhelming, resulting in psychological resistance or rejection of this natural biological process. Consequently, this can manifest in emotional reactions such as anxiety, fear, and confusion. In addition to these psychological impacts, a lack of awareness can also result in inadequate personal hygiene practices during menstruation, potentially posing health risks (Panggabean et al., 2023).

Several factors influence the onset and experience of menarche. These can be categorized into internal and external factors. Internal factors include genetic predisposition, sensory development, physical activity, and emotional state. External factors encompass nutritional intake, socioeconomic conditions, national development level, and, importantly, knowledge and education (Turisna Octavia et al., 2023). In order to appropriately navigate menarche, adolescents require comprehensive knowledge that encompasses the biological, physiological, and psychological changes associated with this developmental milestone. Knowledge is defined as the outcome of perceiving, understanding, and processing information about a specific object or concept (Yulyana et al., 2023). Accurate and age-appropriate information is crucial in helping adolescents develop a positive and well-informed perspective toward their first menstruation. The knowledge they acquire will significantly influence how they perceive and emotionally respond to this event. A lack of preparation due to insufficient knowledge can result in negative emotional states such as anxiety when menarche occurs (Nainar et al., 2023).

A study conducted by Panggabean et al. (2023) revealed a significant correlation between adolescent girls' knowledge levels and their preparedness for experiencing menarche. In a preliminary survey carried out on August 1, 2024, at SDN 7 Tabongo, Gorontalo Regency, the total number of students was 164. Among them, 41 female students aged between 10 and 12 years had not yet experienced menarche. Initial observations through interviews with 10 prepubescent girls who had not yet had their first menstruation revealed that 6 of them expressed fear and embarrassment about the prospect of experiencing menarche. Of these 6 students, 3 reported having no prior knowledge or information about menstruation. Moreover, data obtained from the school indicated that one student had experienced menstruation as early as 8 years old. School officials noted that, to date, there had been no health education or outreach programs on menstruation or menarche provided by the local public health center (puskesmas) or any other institution, despite the school being located in close proximity to the health center.

Based on the background described above, the researcher is motivated to investigate the relationship between the knowledge of prepubescent adolescent girls and their preparedness for experiencing menarche, with a specific focus on students at SDN 7 Tabongo, Gorontalo Regency.

## 2. METHOD

This research was conducted over a one-month period, starting from December 12, 2024, and concluding on January 12, 2025. The study took place at SDN 7 Tabongo, located in Gorontalo Regency. The methodology employed in this research was a quantitative research approach, specifically utilizing an analytic study design with a cross-sectional approach (Gani & Purbangkara, 2023). This methodological framework was selected because it allows the researcher to assess and analyze the relationship between two variables namely, the level of knowledge and the level of preparedness for menarche within a single point in time. The cross-sectional design is particularly appropriate for identifying associations or correlations between variables without the need for extended observation periods, thereby making it a time-efficient and resource-effective choice for this type of study.

The target population for this study consisted of all prepubescent female students in grades IV, V, and VI at SDN 7 Tabongo in Gorontalo Regency who had not yet experienced menstruation at the time of data collection. These criteria were established to ensure the inclusion of participants who were at the appropriate developmental stage for the research focus. The

sampling technique employed in this study was total sampling, which involves including the entire population that meets the eligibility criteria in the study sample. This technique was chosen to maximize the validity and comprehensiveness of the findings, given the relatively limited number of eligible participants at the research site.

As a result, the total sample size in this study amounted to 41 premenarcheal female students, all of whom met the inclusion criteria (Djafar Fatimah, Pratama Apriliyanus Rakhmadi, & Murtikusuma, 2024). By involving the full population of eligible students, the study aimed to obtain a complete and accurate understanding of the relationship between knowledge and readiness for menarche among preadolescent girls in the specified educational setting.

### 3. RESULT AND DISCUSSION

**Tabel 1.** Characteristics of Responden Based on Age

No	Age (Years)	Frequency (n)	Percentage (%)
1	9 years	9	22.0%
2	10 years	5	12.2%
3	11 years	13	31.7%
4	12 years	14	34.1%
	<b>Total</b>	<b>41</b>	<b>100%</b>

Based on Table 1, the majority of respondents were 12 years old, accounting for 14 out of 41 students (34.1%). This indicates that most of the participants were at the upper age range of primary school and thus at a more advanced stage of prepuberty, where the likelihood of approaching menarche is relatively higher.

**Table 2.** Characteristics of Respondent Based on Grade Level

No	Grade Level	Frequency (n)	Percentage (%)
1	Grade IV	14	34.1%
2	Grade V	12	29.3%
3	Grade VI	15	36.6%
	<b>Total</b>	<b>41</b>	<b>100%</b>

As shown in Table 2, the highest number of respondents came from Grade VI, with 15 students (36.6%). This suggests that the oldest students in the sample formed the largest proportion of participants, which is consistent with their increased likelihood of being closer to the onset of menstruation and thus a relevant group for assessing readiness for menarche.

**Table 3.** Relationship Between Knowledge and Readiness for Menarche

Table 5: Relationship Between Knowledge and Readiness for Menarche							
No	Knowledge Level	Readiness				Total	p-Value
		Not Ready		Ready			
		n	%	n	%		
1	Poor	14	34 %	0	0 %	14	0.000
2	Fair	0	0 %	12	29 %	12	
3	Good	0	0 %	15	36 %	15	
	Total	14	34 %	27	65 %	41	

Based on the data presented in Table 3, it can be observed that out of a total of 41 respondents, 14 students (34%) were categorized as having a low level of knowledge regarding menarche and were also found to be unprepared to face the experience. This group represents adolescents who likely lacked sufficient information and understanding about menstruation, leading to a decreased level of psychological and practical readiness. Based on the results of the statistical analysis using the Chi-square test, a p-value of 0.000 was obtained, which is less than the significance threshold of 0.05. This indicates a statistically significant relationship between

the level of knowledge and readiness to face menarche among prepubescent girls at SDN 7 Tabongo, Gorontalo Regency. In other words, the findings confirm that girls who possess higher levels of knowledge about menstruation are more likely to be psychologically and practically prepared for the onset of menarche.

This result is consistent with the theory proposed by Simon and Hutomo (2021), who emphasized that adolescent girls' readiness to undergo menarche is strongly influenced by their level of knowledge. According to their perspective, knowledge plays a crucial role in ensuring that girls are not only informed but also emotionally equipped to face this important physiological transition. When young girls are not adequately educated or prepared for menarche, they may experience confusion, fear, or even reject the natural biological process due to a lack of understanding.

Adolescence itself is considered one of the most critical periods in human development, marking a transitional phase from childhood to adulthood, not only in physical but also in psychological and emotional aspects. This period, typically defined as occurring between the ages of 10 to 19 years, involves various developmental milestones that significantly shape an individual's identity and personal growth. The role of parents and guardians is especially vital during this time as adolescents often struggle to understand and adapt to the changes they experience in their bodies and emotions.

Among the many physiological changes that occur during adolescence, menarche the first menstrual cycle is one of the most pivotal for girls. For many, this event is accompanied by feelings of embarrassment, fear, and anxiety, particularly when it is not preceded by adequate education and open discussion. Therefore, it is essential that girls receive clear and supportive information about menstruation in advance, so they can face this transition with confidence and calmness. When girls are well-informed, menarche can be experienced as a positive and empowering milestone rather than one that induces stress or discomfort.

Health education plays a key role in raising awareness and increasing knowledge about menstruation and reproductive health. A growing body of evidence has shown that educational interventions and counseling significantly improve knowledge levels and consequently readiness to manage menarche. This is in line with previous findings such as those by Panggabean et al. (2023), who also found a significant association between knowledge and readiness, with a p-value of 0.000 ( $<0.05$ ). Similarly, research by Roslita et al. (2022) reported a significant relationship between menstrual knowledge and readiness for menarche, with a p-value of 0.002 ( $<0.05$ ). This was further corroborated by Sardaniah and Yustisia Nova (2024), whose study also applied a Chi-square test and obtained a p-value of 0.001 ( $<0.05$ ), reinforcing the conclusion that greater knowledge about menstruation is linked to better readiness to face menarche.

In the present study, 15 respondents (36%) were found to have a high level of knowledge and were categorized as ready to face menarche. The researcher's observations suggest that this is because girls with a better understanding of menstruation are more mentally and practically prepared to undergo the process. This supports the theory put forth by Gainau (2021), who explained that readiness for menarche is influenced by various factors, including an individual's knowledge about menstruation. Girls who possess strong knowledge in this area are more likely to exhibit higher levels of preparedness, while those with limited knowledge tend to be less ready to face their first menstrual experience.

Additional support for this finding comes from Sardaniah et al. (2024), whose study found that 98.7% of 79 respondents with good knowledge were categorized as ready to face menarche. Likewise, Prastiwi et al. (2024) found that girls with high levels of knowledge were consistently more prepared for menarche. In this study, 12 respondents (29%) had a moderate level of knowledge and were also classified as ready. The researcher noted that these respondents, while not fully knowledgeable, still demonstrated sufficient awareness of the physical changes associated with menstruation, contributing to their sense of preparedness.

This is consistent with Sardaniah and Yustisia Nova (2024), who stated that both girls with good and moderate knowledge are typically prepared to face menarche. Their readiness often stems from receiving health education either from school curricula or from teachers who provide

reproductive health instruction. The role of teachers in delivering such education is critical, as they directly shape students' understanding and attitudes toward menstruation. Reproductive health education, therefore, must be prioritized as a fundamental part of adolescent development, especially for young girls who will eventually become mothers and play a central role in fostering the health of future generations.

Prastiwi et al. (2024) further supported this by reporting that 80% of respondents with moderate knowledge were categorized as ready for menarche. Similarly, Sardaniah et al. (2024) found that 64.1% of respondents with fair knowledge were already prepared for menstruation. Conversely, the current study also found that 14 respondents (34%) had a low level of knowledge and were not ready to face menarche. According to the researcher's observations, this was largely due to a lack of access to information regarding menstruation. This knowledge gap led to insufficient psychological and practical readiness, as the respondents were unsure about what to expect and how to manage the experience when it occurred.

This is in line with Sardaniah et al. (2024), who observed that girls with low knowledge often lack readiness due to limited exposure to information. These students may not know what menarche is, when it typically occurs, or how to respond to it. In many schools, menstruation is included in science (IPA) subjects, but if it is not properly addressed by teachers, students may miss this essential knowledge. Additionally, some girls do not seek information on their own unless guided by a trusted adult, making school-based reproductive education even more critical. Supporting this, Yazia (2021) found that adolescent girls with insufficient knowledge about menstruation tend to experience feelings of shame, anxiety, and confusion, which hinder their ability to prepare for menarche. In fact, Sardaniah et al. (2024) found that 93.3% of girls with poor knowledge were categorized as unready for menarche.

Overall, the data supports the conclusion that the higher the level of knowledge, the greater the readiness among adolescent girls to face menarche. Increasing menstrual health knowledge not only enhances girls' preparedness but also reduces the negative psychological effects associated with menstruation. As stated by Jumala (n.d.), menarche is often perceived by young girls as a traumatic experience, particularly if they are unprepared. This lack of readiness, usually stemming from poor knowledge, can result in girls viewing menstruation as frightening or even hostile. However, when girls are well-informed, they are more likely to view menarche positively as a sign of maturity and a natural part of growing up (Ping & Anasis, 2022).

If adolescents develop a positive perception of menarche, this will directly impact their level of readiness and how they emotionally respond to the experience. Readiness for menarche reflects a girl's state of being physically and mentally prepared to enter reproductive maturity. While many girls today are aware of the basic facts about menstruation, a significant number still lack sufficient knowledge, especially regarding what to expect and how to respond appropriately. This finding is supported by Ekasari (2022), who emphasized that the knowledge girls acquire about menstruation strongly influences their perception of menarche. Similarly, Rusmiyandini et al. (2021) found that a lack of knowledge correlates with lower readiness, reinforcing the conclusion that education and information are key factors in preparing girls for this essential stage of adolescence.

#### 4. CONCLUSION

The results of the study show that out of 41 respondents, 14 respondents (34%) had low levels of knowledge and were unprepared to face menarche, 12 respondents (29%) had a moderate level of knowledge and were prepared, and 15 respondents (36%) had a good level of knowledge and were prepared. Based on the Chi-Square statistical test, the p-value obtained was 0.000 ( $p < 0.05$ ), indicating a significant relationship between the level of knowledge and preparedness for menarche among female adolescents at SDN 7 Tabongo, Gorontalo Regency. The findings suggest that the higher the level of knowledge, the greater the adolescent's preparedness for experiencing menarche.

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