



# The Relationship Between Period Poverty Levels and Menstrual Hygiene Management Among Female Students of the Faculty of Economics and Business, Gorontalo State University

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## ABSTRACT

This study aims to analyse the relationship between the level of period poverty and menstrual hygiene management among female students at the Faculty of Economics and Business, Universitas Negeri Gorontalo. The method used was a quantitative study with a cross-sectional design. The sample consisted of 320 female students selected using proportional random sampling. Data were collected using structured questionnaires measuring the level of period poverty and menstrual hygiene management practices. Data analysis was conducted using univariate and bivariate analyses with the Chi-Square test at a significance level of 5%. The results showed that most respondents experienced a moderate level of period poverty and the majority demonstrated good menstrual hygiene management practices. Bivariate analysis indicated a significant relationship between the level of period poverty are associated with poorer menstrual hygiene management practice among female university students. Therefore, support from educational institutions and healthcare professionals is needed to improve access to sanitation facilities and menstrual health education.

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## INTRODUCTION

Adolescence is an important period in the human life cycle because in this phase various patterns of health behavior are formed that affect adulthood. Adolescent health is influenced by a combination of biological, psychological, social, and experience factors from childhood to changes in sexual maturity (Daniel et al., 2023). Adolescents are in the age range of 12-14 years, which is characterized by the appearance of signs of secondary sex until sexual maturity is reached (Harahap, 2021). One of the main physiological changes experienced by adolescent girls is menstruation, which is a natural process in the form of periodic uterine bleeding that marks the maturity of female reproductive function (Hanapi et al., 2021; Uzoechi et al., 2023).

Along with the onset of menstruation, adolescent girls are faced with the need to maintain optimal menstrual hygiene. Good menstrual hygiene practices play an important role in preventing reproductive health disorders, while inadequate practices can increase the risk of infections and other health problems (Aniroh & Tina Mawardika, 2024; Qolbah et al., 2024). *World Health Organization* (WHO) and *United Nations Children's Fund* (UNICEF) defines Menstrual Hygiene Management (EHM) as a condition when women and adolescent girls can use clean menstrual products, replace them privately as needed, clean the body with soap and water, and have access to safe and convenient facilities for the disposal of menstrual waste (WHO/UNICEF, 2024). However, inadequate MKM is still a global public health problem that has an impact on women's physical, psychological, and quality of life (Patel et al., 2022).

Globally, around 2.3 billion women are not able to manage their periods safely due to limited costs, lack of sanitation facilities, and lack of knowledge about menstrual hygiene. This condition encourages the use of unhygienic materials as menstrual blood absorbers and increases the risk of infections of the reproductive

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tract (Shumie & Mengie, 2022). Recommended MKM practices include the use of clean sanitary napkins that are regularly replaced, the availability of waste disposal facilities, and access to adequate toilets, clean water, and soap (Adyani et al., 2022).

In Indonesia, the gap related to access to basic hygiene is still quite significant. Data from the 2023 Indonesian Health Survey (SKI) shows that 14.7% of the population does not have access to basic hygiene facilities and 6.3% has limited access. Inequality is evident by region and economic status, with higher prevalence in rural areas as well as low-income groups. Gorontalo Province is recorded to have 23.6% of the population who do not have access to basic hygiene facilities (Ministry of Health, 2023). This condition has the potential to worsen the practice of MKM, especially in adolescent women and young adults.

Limited access to menstrual products, facilities, and education is known as *period poverty*, which is a condition when women who are menstruating are unable to meet basic menstrual health needs due to limited resources (Majeed et al., 2022; Mann & Byrne, 2023). Various studies show that young women often have difficulty obtaining menstrual products due to economic constraints, lack of information, and social stigma that is still attached to menstruation (Crawford & Waldman, 2022; Godwin et al., 2024). The stigma and assumption of menstruation as a taboo cause women to be reluctant to talk or seek help regarding their menstrual needs (Glazer et al., 2024; Nahid Uz Zaman et al., 2025).

The impact of period poverty is not only physical, but also psychological and social. The use of improper or infrequently substituted menstrual products can increase the risk of urogenital infections, irritation, and other reproductive health disorders (Aniroh & Tina Mawardika, 2024; Jaafar et al., 2023). Globally, about 10% of women experience genital infections, and most cases are related to inadequate menstrual hygiene practices (Khanal et al., 2023). In Indonesia, the majority of adolescent girls are reported to experience vaginal discharge every year, one of which is influenced by the cleanliness of the reproductive area (Khoiroh et al., 2024).

Period poverty is not only experienced by school teenagers, but also by female students in college. Research shows that about one in six women aged 12-44 years have experienced period poverty, including among college students (Casola et al., 2022; Mann & Byrne, 2023). Economic factors, limited pocket money, and priority to meet other needs cause menstrual products to be often neglected, thus having an impact on the quality of MKM. However, epidemiological data on period poverty among female students in Indonesia are still very limited.

Preliminary findings through interviews with students of the Faculty of Economics and Business (FEB) of Gorontalo State University (UNG) show that there are various obstacles in the practice of MKM, such as the infrequent change of sanitary napkins on campus, the inconvenience of toilet facilities, limited pocket money, and psychological factors in the form of shame and social stigma. This condition shows that period poverty has the potential to affect the practice of MKM in the university environment.

Based on this description, research on the relationship between the level of period poverty and MKM in female students is very important. The results of this study are expected to provide an empirical picture of the condition of period poverty and become the basis for the formulation of policies and interventions that support the reproductive health of female students in the campus environment, especially at FEB UNG.

## METHODS

This study applied a quantitative-based *cross-sectional* design held at Gorontalo State University (UNG) in a low time of 26-31 October 2025. The research subjects come from four departments at the Faculty of Economics and Business including Accounting, Economics, Management, and Economic Education who are active students 2022-2024.

Sampling was carried out through *the stratified random sampling* method with a proportional distribution for each study program, resulting in 320 respondents as a research sample. The respondents who were included were female students who had menstruated for at least the last month and a maximum of the last 6 months.

This study uses two instruments that have been tested for validity. The *Menstrual Practice Needs Scale-36* (MPNS-36) instrument was applied to determine the level of *period poverty* through 36 statement items on a 4-point likert scale, with the classification of scores: *High period poverty* ( $\leq 72$ ), *Moderate period poverty* (73-108), *Low period poverty* ( $\geq 109$ ). The MKM instrument measures how a person's hygiene management during menstruation is through 25 question items with a scoring system (yes = 1, no = 0), which are further categorized into good and poor.

The data collection process begins after obtaining ethical permission from the study program and faculty concerned. The researcher provides an explanation of the purpose and objectives of the study to prospective respondents and obtains participation consent through *informed consent*. The distribution of the questionnaire was carried out directly and the filling was carried out by the respondents with the supervision of the researcher to ensure the completeness of the data collected.

The data collected was then processed using SPSS software version 25. Bivariate testing was conducted with the Chi-Square test to explore the relationship between *period poverty* and menstrual hygiene management using a *significance level of p-value* < 0.05.

## RESEARCH RESULTS

Table 1. Characteristics of FEB UNG Student Respondents

Respondent Characteristics	Frequency (n)	Percentage (%)
<b>Age</b>		
17-28 years old	36	11,3
19-20 years old	165	51,6
21-22 years old	111	34,7
≥ 23 years old	8	2,5
<b>Marital Status</b>		
Unmarried	317	99,1
Married	3	0,9
<b>Majors</b>		
Accounting	88	27,5
Economics	36	11,3
Management	105	32,8
Pend. Economy	91	28,4
<b>Mother's Last Education</b>		
Not in school	4	1,3
Elementary/equivalent	98	30,6
Junior High School/Equivalent	46	14,4
High School/equivalent	124	38,8
Diploma	9	2,8
Bachelor (S1)	30	9,4
Postgraduate (S2/S3)	9	2,8
<b>Age at Menarche</b>		
< 11 years old	23	7,2
12-13 years	168	52,5
14-15 years	94	29,4
≥ 16 years old	35	10,9
<b>Last time of menstruation</b>		
Less than a month ago	301	94,1
1 to 3 months ago	17	5,3
More than 6 months	2	0,6

Based on table 1, the characteristics of the respondents show that the majority of respondents are in the age range of 19-20 years, which is 165 people (51.6%), and almost all of them are unmarried, namely 317 people (99.1%). The most respondents came from management majors as many as 105 people (32.8%), with the last educational background of the mothers having the most high school/equivalent, which was 124 people (38.8%). Most of the respondents experienced *menarche* at the age of 12-13 years as many as 168 people (52.5%), and had a history of menstruation less than one month ago, namely 301 people (94.1%).

Table 2. Distribution of Overview of *Period Poverty* Level in FEB UNG Students

Period Poverty Rate	Frequency (n)	Present (%)
<i>High period poverty</i>	27	8,4
<i>Period poverty</i> Medium	246	76,9
<i>Low period poverty</i>	47	14,7
<b>Total</b>	<b>320</b>	<b>100,0</b>

Based on table 2, the distribution of *period poverty* levels shows that most of the respondents are in the medium *period poverty* category, which is 246 people (76.9%), followed by the low *period poverty* category as many as 47 people (14.7%), and the high *period poverty* category as many as 27 people (8.4%) out of a total of 320 respondents (100%).

Table 3. Distribution of Menstrual Hygiene Management Overview for FEB UNG Students

Menstrual Hygiene Management	Frequency (n)	Present (%)
Less	71	22,2
Good	249	77,8
<b>Total</b>	<b>320</b>	<b>100,0</b>

Based on table 3, the respondents' menstrual hygiene management showed that most of the respondents had good menstrual hygiene management, namely 249 people (77.8%), while 71 people (22.2%) were in the category of poor menstrual hygiene management, out of a total of 320 respondents (100%).

Table 4. Analysis of the Relationship between *Period Poverty* Level and Menstrual Hygiene Management in FEB UNG Students

FEB ONG Students							
Period Poverty Rate	Menstrual Hygiene Management				Quantity		P-value
	Less		Good				
	n	%	n	%	n	%	
Height	27	8,4	0	0	27	8,4	0,000
Medium	44	13,8	202	63,1	246	76,9	
Low	0	0	47	14,7	47	14,7	
Total	71	22,2	249	77,8	320	100,0	

Based on table 4, the results of the analysis showed that in respondents with a high level of period poverty, all of them had less MKM as many as 27 people (8.4%). In the medium poverty period category, most of the respondents had good MKM, namely 202 people (63.1%), while 44 people (13.8%) were in the poor category. Meanwhile, all respondents with low period poverty had a good MKM of 47 people (14.7%). The statistical test showed a  $p\text{-value} = 0.000$ , which indicates a significant relationship between the level of period poverty and MKM in the respondents.

## DISCUSSION

### Identification of *Period Poverty* in Female Students

The results showed that most of the respondents were in the medium (76.9%) category of period poverty, followed by the low (14.7%) and high (8.4%) categories. This distribution indicates that although the majority of female students do not experience severe period poverty, most still face various limitations in meeting their menstrual needs optimally. These findings confirm that period poverty does not always appear in the form of extreme shortages, but is often present as a condition of access instability, concerns about the adequacy of products, and inconvenience in its use.

The dominance of the moderate period poverty category shows that menstrual problems among female students are not only related to the ownership of menstrual products, but also include aspects of a sense of security, product quality, and sustainability of access. The results of the MPNS questionnaire show that many respondents still often feel worried about sanitary pads leaking, shifting menstrual supplies, and difficulty obtaining additional products when needed. This condition reflects psychological distress and uncertainty in the menstrual experience, although in general menstrual products can still be obtained. These findings are in line with the concept of period poverty which emphasizes that menstrual poverty includes material, psychological, social, and environmental dimensions (Bobel et al., 2020).

The results of this study are consistent with the findings of the Cardoso et al., (2021); Mann & Byrne, (2023); Rossouw & Ross, (2021) which shows that female students in various contexts, including high-income countries, still have difficulty meeting menstrual needs properly. These limitations are not only influenced by economic ability, but also by sanitation facilities, access to clean water, privacy, and the social stigma inherent in menstruation. Thus, period poverty in female students is a complex and multidimensional phenomenon.

The majority of respondents were in the age range of 19–20 years, which is the late adolescence phase to early adulthood. At this stage, female students generally have basic knowledge about menstruation and reproductive health through formal education and personal experience. However, at the same time, they began to manage the necessities of life independently, including menstrual needs, with limited financial resources. This condition is in accordance with the concept *Emerging Adulthood* Arnett, (2000), where individuals are adapting to independence, so that despite having knowledge, the ability to apply it in real practice is still affected by economic and environmental limitations.

Previous research has shown that adequate knowledge is not always directly proportional to consistent menstrual practices. Alo & Olajire, (2025); Shahibah et al., (2024) emphasizing that attitudes, product access,

social norms, and the environment have a stronger role in shaping the menstrual experience than knowledge alone. This explains why female students with *period poverty* are still experiencing worry and discomfort even though they have cognitively understood good menstrual practices.

A small percentage of respondents were in the category *period poverty* low. This group shows good control over menstrual needs, both in terms of product availability, comfort of use, and a sense of security in managing menstruation in various situations. The characteristics of respondents in this group were dominated by mothers with secondary to high education levels. Maternal education plays a protective role because it contributes to the family's understanding of the importance of reproductive health and the fulfillment of girls' menstrual needs. These findings are in line with various studies showing that maternal education is closely related to better menstrual access, attitudes and practices (Appiah-agyekum et al., 2025; Barrington et al., 2021; Hennegan et al., 2019).

However, even in the *period poverty* With low levels of dissatisfaction with sanitation facilities and privacy-related concerns when changing sanitary napkins in the campus environment, there is still a lack of satisfaction. This shows that the availability of products and health literacy alone does not fully guarantee a comfortable menstrual experience. Social stigma, privacy norms, and the quality of public facilities continue to play a role in shaping the menstrual experience, as shown by Egwuaba & Sunday, (2025); Lonkhuijzen & Garcia, (2023) and Method et al., (2024).

Meanwhile, the existence of female students with *period poverty* High, although relatively small, indicates that there are groups that experience significant limitations in meeting menstrual needs. Respondents in this category tended to experience excessive worry, suboptimal product use, and discomfort in changing and disposing of sanitary napkins in the campus environment. This condition has an impact not only on the physical aspect, but also on psychological well-being during menstruation. These findings support the concept *Social Determinants of Health* which states that health conditions are influenced by economic, educational, and social environmental factors (WHO, 2025).

Low level of maternal education in the group *period poverty* Height further strengthens the role of the family as an important determinant in fulfilling menstrual needs. Mothers with low education tend to have limited access to information and a lower frequency of discussions related to reproductive health, so girls are less prepared to manage menstruation properly. These findings are consistent with research Adane et al., (2024); Ahmed et al., (2025) which confirms that parental education is a key factor in menstrual hygiene practices and risks *period poverty*.

Overall, the results of this study show that the level of *period poverty* in female students is influenced by a combination of economic factors, knowledge, family support, parental education, and environmental and social conditions. The dominance of the *moderate period poverty* category indicates that female students have knowledge capital and basic access, but are not fully supported by optimal environmental conditions and resources. Therefore, efforts to handle *period poverty* in the university environment need to be carried out comprehensively, not only through the provision of menstrual products, but also through the improvement of sanitation facilities, reproductive health education, and the reduction of social stigma related to menstruation.

### Identification of MKM in female students

The results of the study showed that most of the female students of the Faculty of Economics and Business, Gorontalo State University had good menstrual hygiene management (MKM). These findings indicate that female students in general have been able to implement appropriate menstrual hygiene practices, including the safe use of sanitary pads, maintaining the cleanliness of the genital area, and managing menstrual waste. This condition reflects the relatively good level of menstrual health literacy among female students.

The dominance of good MKM practices can be influenced by the characteristics of the respondents, the majority of whom are in the age range of 19–22 years, namely the late adolescence to early adulthood phase. At this stage of development, individuals have better cognitive maturity in receiving, understanding, and applying health information to daily behavior. Access to higher education and extensive digital information resources allow students to gain more comprehensive knowledge about reproductive health, including menstrual hygiene practices.

The results of the MKM questionnaire showed that most respondents understood the right time to change pads, the importance of washing hands before and after changing pads, and the practice of cleaning and drying the genital area properly. These findings support the theory that education level plays an important role in improving an individual's ability to absorb and interpret health information. The higher a person's level of education, the greater the chance of forming positive health behaviors.

This research is in line with the findings Aini & Eka Puspitasari, (2024) which shows that the majority of female students have a sufficient to high level of menstrual knowledge. In contrast, studies in younger age groups show that low levels of knowledge correlate with poor menstrual hygiene behavior. This reinforces that formal education and longer menstrual experiences contribute to the improvement of MKM practices.

In addition to knowledge, attitudes also play an important role in shaping menstrual hygiene behavior. Based on *Lawrence Green's theory*, health behavior is influenced by predisposing factors such as knowledge

and attitudes, as well as supporting factors such as the availability of infrastructure. FEB Gorontalo State University students have relatively good predisposition factors, shown by the level of knowledge and positive attitudes towards menstrual hygiene. The campus environment also acts as a source of informal information through academic discussions, seminars, and social interactions, which also strengthen the formation of good MKM behavior.

However, this study also found that there are still female students with less MKM. This condition can be caused by unequal access to menstrual health information, limited experience in managing menstruation, and environmental barriers, especially related to sanitation facilities on campus. Some respondents with MKM showed less behavior such as not changing sanitary napkins regularly, not being proper in cleaning the genital area, and reluctant to change sanitary napkins when in the campus environment. These findings show that the basic knowledge they have has not been fully applied in daily practice.

This phenomenon is in line with research Ahmed et al., (2025); Nengsi et al., (2024) which confirms the gap between menstrual hygiene knowledge and practices. Awareness of the importance of menstrual hygiene does not always lead to optimal behavior, especially when faced with social, cultural, stigma, and limited facilities. Thus, knowledge alone is not enough to guarantee good MKM practices without adequate environmental support.

The factor of sanitation facilities and infrastructure is also an important aspect in the implementation of MKM. The availability of clean toilets, running water, closed garbage cans, and adequate privacy greatly affect the comfort of female students in managing menstruation. These findings are in line with research Muhaidat et al., (2024) and Sahira Mardika et al., (2025) which suggests that proper sanitation facilities are significantly correlated with healthy menstrual hygiene behaviors. The results of location observations in this study show that although sanitation facilities are available, they are not fully optimal in supporting the menstrual needs of female students.

Individual and environmental factors, maternal education also play a role in shaping the practice of MKM. Some respondents had mothers with low levels of education, which has the potential to limit the quality of initial information related to reproductive health received by girls. Mothers are the first source of information about menstruation, so the mother's limited knowledge can have an impact on non-optimal MKM practices. These findings are in line with a survey by Betsu et al., (2024) and systematic review by Head et al., (2024) which emphasizes the importance of comprehensive menstrual education not only for adolescents, but also for their parents and social environment.

Overall, the results of this study show that the practice of menstrual hygiene management in female students of the Faculty of Economics and Business, Gorontalo State University is mostly in the good category, which is influenced by adequate knowledge, level of education, menstrual experience, and relatively wide access to information. However, there are still female students with less MKM due to limited information, suboptimal infrastructure, cultural factors, and low maternal education. These findings confirm that improving MKM practices requires a comprehensive approach through strengthening reproductive health education, improving campus sanitation facilities, and efforts to reduce social stigma related to menstruation.

### **The Relationship between *the Poverty Period* and MKM**

The results of this study showed a significant relationship between the level of period poverty and MKM in FEB UNG students ( $p = 0.000$ ;  $\alpha = 0.05$ ). These findings indicate that the lower the level of period poverty experienced by female students, the better the practice of MKM is carried out. On the other hand, female students with a high level of period poverty tend to have less than optimal MKM practices. These results confirm that period poverty is an important factor that affects menstrual hygiene behavior in women of reproductive age, including in the university environment.

The findings of this study are in line with the results of the study Deniz & Acikgoz, (2025; Fuadah et al., (2025); Tohit & Haque, (2024) which states that period poverty has a direct impact on genital hygiene behavior and menstrual hygiene. Limited economic resources, access to menstrual products, and adequate sanitation facilities cause women to have difficulty implementing safe and proper MKM practices. Thus, period poverty can be understood as a multidimensional public health challenge because it involves interrelated economic, social, and environmental aspects.

However, the results of this study also show that most of the respondents with moderate levels of period poverty still have good MKM practices. This condition indicates that period poverty is not always an absolute obstacle to the implementation of MKM, as long as the basic needs of menstruation can still be met. Based on the findings of the MPNS instrument, female students in this category generally still have sufficient availability of sanitary napkins and are able to obtain menstrual products when needed. This allows them to maintain menstrual hygiene well even though they are in certain economic limitations.

Age factors and menstrual experience also play a role in supporting the practice of MKM. The majority of respondents were in the age range of late adolescence to early adulthood and had experienced menstruation for a relatively long period of time. This experience contributes to increasing knowledge, skills, and confidence in managing menstrual hygiene. These findings are in line with research Daniel et al., (2023);

Gebre et al., (2023) which suggests that good MKM practices are more prevalent in adolescent girls with adequate menstrual experiences and adequate environmental support.

The presence of respondents with MKM is less in the category *period poverty* while showing that the fulfillment of material needs alone is not enough to ensure optimal MKM practices. Based on the MPNS response, some students still feel insecurity and discomfort in changing and disposing of sanitary napkins in campus public facilities. This reflects the obstacles in terms of facilities, privacy, and psychosocial factors. These conditions are in line with *Hygiene Behavior Model* which states that hygiene behavior is influenced by enabling factors, driving factors, and reinforcing factors (Curtis et al., 2022).

These findings are reinforced by research Adane et al., (2024); Nwoye, (2024); Tshivule & Rasweswe, (2025) which suggests that unsterilized sanitation, limited sanitary pads disposal facilities, and lack of privacy in campus toilets can hinder the practice of MKM even though menstrual products are available. In addition, social stigma and negative perceptions of menstruation also contribute to the behavior of delaying changing pads, which has the potential to increase the risk of reproductive health disorders.

A student with a degree *period poverty* all of them show good MKM practices. More stable economic conditions allow for easier access to quality menstrual products, reproductive health information, and adequate sanitation facilities. These findings are consistent with research Ahmed et al., (2025) and Namuwonge et al., (2025) which states that economic support and family empowerment increase *self-efficacy* women in managing menstruation, thereby encouraging more optimal MKM practices.

On the other hand, all respondents with a *period poverty* have a lack of MKM practices. Limited access to menstrual products, sanitation facilities, and health information are the main factors that hinder the implementation of MKM. In addition, the low level of maternal education in this group also contributes to the lack of knowledge and readiness of female students in managing menstruation. These findings are in line with research Appiah-agyekum et al., (2025); Ayele et al., (2025); Wiratmo et al., (2022) which affirms the important role of mothers as the main source of information related to reproductive health and menstrual hygiene.

The strong relationship pattern between *period poverty* and MKM in this study confirms that *period poverty* has a real impact on the menstrual hygiene practices of female students. Therefore, comprehensive interventions are needed that include improving reproductive health education, providing affordable or free menstrual products, and improving sanitation facilities and infrastructure in the campus environment. These findings can be the basis for educational institutions in formulating policies and programs that support the fulfillment of the menstrual health needs of female students in a sustainable manner.

## CONCLUSION

This study showed a significant relationship between the level of *period poverty* and MKM in FEB UNG students. The lower the level of period poverty experienced by female students, the better the MKM practice is carried out. On the other hand, female students with a high level of period poverty tend to have less than optimal MKM practices.

Most female students with moderate period poverty are still able to implement good MKM practices, which indicates that the fulfillment of basic needs of menstrual products still allows for optimal implementation of MKM despite economic limitations. However, there are still obstacles found in the aspects of sanitation facilities, privacy, and psychosocial factors that affect the comfort of female students in managing menstruation in the campus environment.

Students with low period poverty rates all showed good MKM practices, while female students with high period poverty levels all had poor MKM practices. These findings confirm that period poverty has a real impact on the ability of female students to run MKM safely and properly.

Overall, the results of this study emphasize the importance of comprehensive efforts in reducing the level of period poverty through increasing access to menstrual products, reproductive health education, and the provision of safe, comfortable, and supportive sanitation facilities in the university environment to improve the practice of MKM in female students.

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