



## The Relationship of Menstrual Hygiene Behavior with Menstrual Cycle Disorders in Female Prisoners: A Sequential Explanatory Analysis

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### Abstract

Menstrual hygiene behaviors, such as using clean sanitary napkins, washing the body with soap, and disposing of used sanitary napkins properly, play an important role in preventing menstrual disorders. This quantitative study aims to examine the relationship between menstrual hygiene behavior and menstrual cycle disorders in female prisoners in class II B women's prison in Padang city. Qualitative research aims to explore more deeply the behavior of inmates who experience menstrual cycle disorders in class II B women's prison in Padang city. This research used a combination method with a sequential explanatory design from November 2023 to March 2024, the research sample consisted of 73 female prisoners selected by purposive sampling. Quantitative data analysis using the chi-square test showed a significant association ( $p$ -value  $< 0.001$ ) between menstrual hygiene behavior and menstrual cycle disorders, while qualitative data through in-depth interviews identified two main themes: menstrual hygiene behavior and menstrual cycle disorders. In conclusion, poor menstrual hygiene behavior is associated with menstrual cycle disorders, so it is recommended that prison authorities increase supervision and provide better information on menstrual hygiene to prisoners.

## Introduction

Menstruation is the discharge of blood, mucus, accompanied by periodic and cyclic release (desquamation) of the uterine lining, which begins approximately 14 days after ovulation (Smith & Smith, 2018). Menstruation associated with the menstrual cycle is characterized by a regular series of hormonal events and serves to facilitate reproduction (Schmalenberger et al., 2021). The menstrual cycle is a monthly hormonal cycle characterized by menstruation every month. The menstrual cycle is calculated from the first day of menstruation to the first day of the next menstrual period. The average length of the menstrual cycle is 28 days, but this cycle can vary among women from 21 to 35 days (Bae et al., 2018). Menstruation is said to be regular if it runs three times with the same periodic range every month. The behavior of maintaining reproductive health is very important because, reproductive organs are vulnerable to exposure to bacteria during the menstrual period (Gupta et al., 2019)

Menstrual hygiene behaviors involve women using clean menstrual pads to absorb or collect menstrual blood, washing their bodies as needed with soap and water, and having access to safe and convenient facilities. According to Elledge et al. (2018) and Hennegan et al. (2017), disposal of used sanitary pads is also included in these actions. Poor hygiene behaviors can lead to menstrual disorders. Poor menstrual hygiene behavior can lead to reproductive tract infections (RTIs) including pruritus vulvae, vaginitis, vulvovaginitis, vaginal discharge, irritation, odor, bacterial vaginosis infection and urinary tract infections (UTIs), untreated

infections can lead to human papilloma virus (HPV) infection and menstrual cycle disorders. Humid conditions during menstruation can be a favorable environment for bacterial growth, as bacteria can thrive on unhygienic sanitary pads (Shibly et al., 2021; Bender et al., 2017).

In research by Roy et al. (2021) explain that the prevalence of poor menstrual hygiene behavior among women in the world reaches more than 40%. Countries that have poor menstrual hygiene behavior in prison include Utopia 50,6%, Turkey 48%, Indonesia in Wirogunan prison Yogyakarta 52.9%. Women in prison have a high risk of health problems such as menstrual cycle disorders due to lack of menstrual hygiene information, inadequate facilities, and limited absorbent materials, water, sanitation and hygiene (WASH), hygiene resources, and inadequate facility support. Menstrual cycle disorders by the World Health Organization (WHO) in 2020 reached as much as 45% of women aged 10-49 years experiencing irregular menstrual problems (Schoep et al., 2019; Peña et al., 2020; Burnett & Lemyre, 2017).

Factors causing menstrual disorders can vary, ranging from hormonal disorders, pregnancy, concomitant diseases, such as polycystic ovary syndrome (PCOS), and bacterial infections caused by poor menstrual hygiene. Women in correctional institutions also experience menstrual cycles that are sometimes irregular, the availability of special needs from women gets attention, for example the availability of toiletries, needs during menstruation, the need to wash underwear. These conditions can be a trigger for the occurrence of reproductive health problems of women prisoners in correctional institutions. Research by Nungbaso (2020) inmates studied, most had poor behavior, namely 85.6%, bathing only once during the menstrual period, and more than 4/5 of them, with a percentage of 81.4%, changing pads twice during the period.

The author's initial observations at Class II B Women's Correctional Facility, located in Padang City, showed that there are 185 prisoners in the age range of 17-50 years. Observations showed that the prison is overloaded. The results of preliminary observations showed that inmates did not change sanitary napkins every 4 hours, did not wash their hands with soap before and after changing sanitary napkins, bathed once a day, and cleaned their genitals from the back (anus) to the front (vagina), Prison officials stated that sometimes there were problems with clogging toilets due to inmates throwing sanitary napkins in the toilet. Unsafe disposal of used menstrual materials or blood can increase the risk of transmission of Hepatitis B which can cause serious health complications and have implications for reproductive health later in life (Ward & Hinman, 2019; Awili et al., 2020) During our visit, there was no running water, in addition, the toilet was not equipped with a door, so during menstruation, it could not be managed privately.

Research conducted by Blackwell (2020) shows that female prisoners tend to have regular and normal menstrual patterns, although their menstrual hygiene is relatively poor. This is a research gap for researchers, because empirical data obtained from initial interviews with 8 women living in Class II B Women's Correctional Institution showed that 7 of them experienced menstrual cycle disorders and had poor menstrual hygiene behavior. In addition, the absence of research on menstrual hygiene behavior and menstrual cycle disorders in prisoners in Indonesia is a novelty for researchers.

Based on the description above, it interests researchers to conduct research with the title "The Relationship between Menstrual Hygiene Behavior and Menstrual Cycle Disorders in Female Prisoners in Class II B Women's Prison in Padang City (A Sequential Explanatory Analysis)." This research uses a combination method (mix methods) to get a complete and in-depth picture, with the initial stage being quantitative research and followed by qualitative methods. This study aims to determine menstrual hygiene behavior and menstrual cycle disorders among female prisoners in Class II B Women's Correctional Facility Padang City. Quantitatively, this study aims to identify basic characteristics such as age, age of menarche, education, ongoing sentence, period of detention, and menstrual cycle disorders, as well as understand menstrual

hygiene behavior and its relationship with menstrual cycle disorders in female prisoners. Qualitatively, this study focuses on deeply exploring menstrual hygiene behavior and menstrual cycle disorders experienced by female prisoners in the prison. Thus, this study provides a comprehensive insight into the menstrual health conditions of female prisoners in Class II B Women's Correctional Facility in Padang City.

## Methods

This study used a mixed method with sequential explanatory analysis, which involved two stages. In the first stage, quantitative data collection and analysis were conducted using a cross-sectional analytic approach. The second stage involves collecting and analyzing qualitative data using a case study approach. This research will be conducted at the Class II B Women's Correctional Facility in Padang City from November 2023 to March 2024. The study population consists of 200 female prisoners aged 17-49 years, with a sample of 73 prisoners selected through purposive sampling technique based on certain inclusion and exclusion criteria. The sample size was calculated using the Slovin proportion estimation formula, and to avoid data collection errors, the sample size was increased by 10%.

The variables of this study consisted of independent and dependent variables. The independent variable is the menstrual hygiene behavior of female prisoners in Padang City Correctional Facility, while the dependent variable is menstrual cycle disorders associated with menstrual hygiene behavior. With this mixed method approach, the research aims to gain an in-depth and comprehensive understanding of menstrual hygiene behavior and menstrual cycle disorders in female prisoners, as well as how these two variables are interconnected.

## Result and Discussion

### Respondent's Characteristics

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The Women's Correctional Institution Class II B Kota Padang, which is under the Regional Office of Law and Human Rights of the Republic of Indonesia West Sumatra, is tasked with providing guidance to female prisoners and inmates. This prison was established based on the Decree of the Minister of Law and Human Rights of the Republic of Indonesia Number: M.HH-10.OT.01.01 of 2016 dated July 15, 2016, and began operating on October 3, 2023 in a new building which was inaugurated on October 30, 2017. With a strategic location on Jalan Anak Air, Batipuh Panjang Village, Koto Tengah District, Padang City, this prison is easily accessible by private vehicles and public transportation. Cooperation with the Anak Air Community Health Center located 2.8 km away also supports health services for prisoners. The dominant cases in this prison are violations of Articles of Law No. 35/2009 on Narcotics.

The number of female prisoners at the Class II B Women's Correctional Facility in Padang City in 2024 reached 200, with an age range of 17-66 years. The cases they face include embezzlement, murder, and mainly narcotics. The prison consists of four blocks, namely blocks A, B, C and D, with each block having one room that can accommodate 40 prisoners. Conditions inside the blocks are relatively simple with mattresses on un-tiled tile floors and overcrowded mattresses. The data shows that the largest age group is 31-40 years old, making up 36% of the total prisoners, while the age group under 21 years old is only 1%.

In this study on menstrual hygiene behavior and menstrual cycle disorders in correctional facilities, it was found that the majority of respondents were aged 21-35 years (65.8%) with the highest age of menarche at 11-15 years (89%). Most education was at the high school level (46.6%), and most ongoing sentences were of 3-12 months duration (54.8%). The highest period of incarceration was more than 61 months (71.2%). A total of 56.2% of prisoners experienced menstrual cycle disorders, with a prevalence of polymenorrhea of 13.7%, oligomenorrhea of 37%, and amenorrhea of 5.5%. These findings indicate the importance of attention to the reproductive health of female prisoners, which is an integral part of their guidance and rehabilitation.

### Bivariate Analysis

#### *Relationship between Menstrual Hygiene Behavior and Menstrual Cycle Disorders in Female Prisoners in Class II B Women's Prison Padang City*

Bivariate analysis of the relationship between menstrual hygiene behavior and menstrual cycle disorders in female prisoners in class II B female prison in Padang can be seen in table 1.

Table 1. Relationship between Menstrual Hygiene Behavior and Menstrual Cycle Disorders in Female Prisoners in Class II B Women's Prison Padang City

Menstrual Hygiene Behavior	Menstrual Cycle Disorders				Total		OR	p-value
	No Normal		Normal		n	%		
	n	%	n	%				
Good	0	0	6	100	6	100	0,103	<0,001
Simply	10	34,5	19	65,5	29	100		
Bad	31	81,6	7	18,4	38	100		
<b>Total</b>	41	56,2	32	43,8	73	100		

Source: Primary Data

Table 1 shows that respondents with abnormal menstrual cycle disorders are more in respondents who have poor behavior (81.6%) while respondents with menstrual cycle disorders in adequate behavior (34.5%). Based on the results of the *chi square* test, there is a significant relationship between *menstrual hygiene* behavior and menstrual cycle disorders with a *p-value* of <0.001. The results of the *chi square* test obtained a *p-value* of 0.001 so it can be concluded that there is a significant relationship between *menstrual hygiene* behavior and menstrual cycle disorders in female inmates of class II B of Padang city. Odds Ratio (OR) of 0.103 means that inmate behavior 0.103 times affects menstrual cycle disorders.

### Qualitative Analysis

This study found a significant relationship between menstrual hygiene behavior and menstrual cycle disorders through quantitative methods, while qualitative research was conducted to explore the findings. In-depth interviews were conducted with 5 prisoners, 2 prison officers, and 1 prison health officer at Class II B Women's Prison in Padang City. The varied characteristics of the informants, including prisoners with junior high school to senior high school educational backgrounds and officers with S1 education, as well as varying lengths of detention, helped to ensure the principles of appropriateness and adequacy of the data.

## Qualitative Research Results

Researchers explain the findings and discussions related to this research. Qualitative research data collection uses instruments such as researchers themselves, interview guidelines, voice recorders, cameras, and notes. Qualitative analysis uses the Creswell analysis method where researchers provide raw data in the form of transcripts, field notes and researchers' own views, researchers organize and store data to be analyzed, read all data, do coding, arrange themes and data descriptions, construct between themes and give meaning to themes that have been arranged and researchers analyze with Nvivo 20 tools, resulting in 2 themes, 4 categories, and 15 coding as illustrated below. The results of this qualitative research are explained in 2 themes including *menstrual hygiene* behavior and menstrual cycle disorders.

### *Menstrual Hygiene Behavior*

The theme of inmates menstrual hygiene behavior aims to understand how female inmates manage their personal hygiene during menstruation in a prison setting. Description of the findings of the theme of *menstrual hygiene* behavior can be seen in table 2 as follows,

Table 2. Description of Menstrual Hygiene Results

Theme	Category	Coding
Menstrual Hygiene Behavior	Personal Autonomy Menstrual Hygiene	Intention to maintain menstrual hygiene
		Prisoner informants do not change sanitary napkins every 4 hours
		Cleaning the genitals (Cebok)
		Wash hands before and after changing sanitary napkins using soap
		Bathing Frequency
		Disposal of sorbent waste
		Situation for action
	Type of Menstrual Hygiene Material used	Disposable pads
		Cloth Pads
	Social Support	Facilities (Water, Soap, Toilet and Absorbent Materials,)
		Information Availability
		Health Workers

Source: Primary Data

The intention to maintain hygiene during menstruation reflects one's awareness and motivation to take good care of reproductive health. This includes regularly changing pads, washing hands before and after changing pads, and cleaning the genital area with water and soap. In in-depth interviews, several inmates expressed their intention to maintain menstrual hygiene, although it is often hampered by limited facilities, such as lack of water. One informant stated, "The intention to maintain is there but the situation does not allow it," while others said, "Maintain lah, so that it is clean," and "Ya know, maintain lah kak." Triangulation with prison guards also showed that water availability is a major obstacle in implementing good hygiene practices.

The recommended frequency of changing pads is every 4-6 hours to maintain hygiene and prevent irritation and infection. However, in in-depth interviews, some prisoners admitted that they were not always able to change sanitary napkins every 4 hours due to limited sanitary napkins and financial conditions. One inmate explained, "If you change the sanitary napkins

every 4 hours, many sanitary napkins run out, so you change the sanitary napkins at the same time as taking a morning shower and an evening shower." Triangulation with prison guards confirmed that limited water and facilities in the prison were the main obstacles in this menstrual hygiene practice. A prison guard stated, "If for example there is a lot of water, the cleanliness is often changing pads, maybe from morning to noon there are 2x changes, but now because of the constraints on water, maybe a little, 1x."

Based on the results of research conducted in prisons, there are several important findings regarding the menstrual hygiene practices of female prisoner informants (IFN). It was found that most IFNs use disposable sanitary napkins as the main choice for managing menstrual blood. They consider these pads to be practical and efficient, although there are also those who experience financial limitations so they are forced to use used cloth as an alternative when they cannot afford disposable pads. Nevertheless, the situation inside the prison often affects the way they maintain hygiene, especially in relation to the availability of water which is not always adequate. This suggests the need for better facilities and more intensive education on menstrual sanitation to improve IFNs' health and comfort during their days in prison.

The interview results also revealed that IFNs tend to take actions according to the situation they face in maintaining menstrual hygiene. For example, when water supply is limited or non-existent, they reduce the frequency of bathing or look for alternative ways to meet their sanitation needs and the unavailability of absorbent materials for free from the prison, but they can buy through the prison cooperative, lack of information on *menstrual hygiene* behavior and the only health workers available are midwives due to the transferred doctor and nurses who are on maternity leave. Despite the challenges of an often inadequate prison environment, IFNs still strive to maintain their personal hygiene in ways that are available, although not always ideal. In this context, the role of education and improved sanitation infrastructure is crucial to improving IFNs' health conditions and quality of life, as well as giving them better access to proper and safe menstrual hygiene kits.

### ***Menstrual Cycle Disorder***

The theme of menstrual cycle disorders in prisoners aims to understand the experiences faced by female prisoners who experience menstrual cycle disorders in the prison environment. Description of the findings of the theme of *menstrual hygiene* behavior can be seen in table 2 as follows:

Table 3. Description of Menstrual Hygiene Results

<b>Theme</b>	<b>Category</b>	<b>Coding</b>
Menstrual Cycle Disorder	Inmates experience disruptions in the menstrual cycle.	Polimenorrhea
		Oligomenorrhea
		Amenorrhea

Source: Primary Data

Based on data collected from the prison, it was revealed that female prisoner informants (IFNs) often experience menstrual cycle disorders, which include polyomenorrhea, oligomenorrhea, and amenorrhea. Polyomenorrhea occurs when IFNs' menstrual cycles occur more frequently than usual, often with less than a 21-day interval between periods. IFNs who experience polyomenorrhea often face economic challenges in meeting the need for sanitary pads, leading to the use of used cloth as an alternative. On the other hand, oligomenorrhea is a condition where IFNs' menstrual cycles are longer than normal, often more than 35 days. This condition is also influenced by stress and hormonal imbalances in the prison environment that affect IFNs' overall reproductive health.

In addition, some IFNs also experience amenorrhea, which is a condition where menstruation does not occur for at least 3 consecutive months. This condition may be influenced by previous contraceptive use or stress experienced in the prison environment. Nonetheless, awareness of reproductive health issues such as menstrual cycle disorders still needs to be increased among female prisoners, with a more holistic approach to their health care within the correctional system. Improved sanitation infrastructure and more intensive reproductive health education are expected to improve the overall well-being and quality of life of IFNs in this often inadequate environment.

### **Menstrual Hygiene Behavior**

Based on the results of the study of 73 inmate respondents, 38 (52.1%) respondents showed poor menstrual hygiene behavior. They rarely changed pads every 4 hours, did not wash their hands with soap before and after changing pads, and sometimes cleaned their genitals in an inappropriate way. The majority used disposable sanitary products, but also sometimes used cloth pads. This behavior is similar to Nabiryo's (2023) findings in Uganda, which showed poor menstrual hygiene practices due to inadequate resources and lack of privacy, highlighting the need for improved hygiene education and facilities in prisons. This data reflects the lack of awareness of inmates towards menstrual hygiene. According to Greed (1985) in Fitriani (2011), behavior is influenced by genetic and environmental factors. This is supported by Rabi'u's (2018) study, which found that the majority of prisoners only bathed once a day and changed menstrual absorbents twice a day.

A total of 6 respondents (8.2%) had good behavior in maintaining menstrual hygiene, such as always changing pads every 4 hours, washing hands before and after changing pads, and using cotton underwear. This behavior is in line with the menstrual hygiene standards discussed by UNICEF and Parikh's research (2022), which showed that 79% of respondents had good knowledge and behavior about menstruation. However, this finding contradicts Garedew's (2023) study which found more than half of the inmates in Gondar City Prison, Ethiopia, demonstrated good personal hygiene practices. Good menstrual hygiene practices are essential for reproductive health and avoiding disorders such as dysmenorrhea and amenorrhea (Rihardini, 2019).

### **Menstrual Cycle Disorder**

The results showed that out of 73 respondents, 41 prisoners (56.2%) experienced menstrual cycle disorders. This disorder includes 27 prisoners (37%) with oligomenorrhea, where the menstrual cycle stops for more than 35 days, often related to polycystic ovary syndrome and immaturity of the hypothalamic-pituitary-ovarian-endometrial axis (Pibriyanti et al., 2021). A total of 10 inmates (13.7%) experienced polymenorrhea, which is a menstrual cycle of less than 21 days, often caused by a short luteal phase, which inhibits egg maturation (Ilham et al., 2023). Four respondents (5.5%) experienced secondary amenorrhea, where menstruation stops for more than three consecutive months (Fatimah & Ayu, 2023). Meanwhile, 32 inmates (43.8%) had a regular menstrual cycle, although some of them had poor hygiene behavior, which may be influenced by hormonal factors (Haryanti, 2023).

Most prisoners experience menstrual cycle disorders, reflecting the adverse impact of inadequate menstrual hygiene and limited facilities in prison. These disorders such as oligomenorrhea, polymenorrhea, and amenorrhea can affect women's quality of life and fertility (Alghani, 2024). Research shows that poor menstrual hygiene can lead to menstrual disorders (Nwimo et al., 2022; Larki, 2022; Majeed et al., 2022). Lack of information on menstrual hygiene, inadequate facilities, and limited absorbent materials place women in prisons at high risk of menstrual cycle disorders, with the WHO reporting that 45% of women aged 10-49 year's experience irregular menstrual problems (Gadama et al., 2020; Shiku, 2022; Syamsiah, 2022).

## **Relationship between Menstrual Hygiene Behavior and Menstrual Cycle Disorders in Female Prisoners in Class II B Women's Prison Padang City**

Based on the Chi-square test results, there is a significant relationship between menstrual hygiene behavior and menstrual cycle disorders in female inmates of class II B Padang City ( $p$ -value  $< 0.001$ ). Respondents with poor behavior experienced more abnormal menstrual cycle disorders, with 31 respondents (81.6%) not changing pads every 4 hours, not washing hands before and after changing pads, and using disposable pads or unhygienic cloth products. Some inmates did not clean their genitals properly or use cotton underwear, and only bathed once a day. In addition, lifestyles such as smoking and certain activities are also associated with menstrual cycle disorders in prisoners with moderate behavior (Donna, 1999).

A total of 7 respondents (18.4%) had a normal menstrual cycle despite poor hygiene behavior, which may be due to hormonal factors such as estrogen and progesterone that regulate the menstrual cycle (Haryanti, 2023). Research shows that poor menstrual hygiene can cause menstrual disorders, as stated by Nwimo et al. (2022), Larki (2022), and Majeed et al. (2022). Persistent menstrual disorders can lead to abnormal cycles and increase the risk of infections and other reproductive health problems (Mutairi, 2021; Kafle, 2016; Nabiryo, 2023). These studies emphasize the importance of good menstrual hygiene practices to prevent menstrual disorders and infections (Unicef, 2020; Nwimo, 2022).

### **Menstrual Hygiene Behavior**

In a qualitative study on the menstrual hygiene behavior of prisoners who experience menstrual cycle disorders, it was found that limited facilities in prisons greatly affect the hygiene behavior of prisoners. The personal autonomy of prisoners in maintaining menstrual hygiene, such as changing pads every 4 hours, washing hands before and after changing pads, and bathing regularly, is often hampered by the lack of adequate facilities, such as the availability of water and disposable pads. The limited water in prisons means that prisoners have to conserve water for personal hygiene activities, such as urination and defecation. As a result, they are often only able to shower once a day or even skip a shower for several days when water is not available. In addition, the limited disposable sanitary napkins that prisoners have to buy themselves without support from the prison also forces them not to change their sanitary napkins regularly, which increases the risk of infection.

The hygiene behavior of prisoners is also influenced by early social and educational factors, such as improper genital cleaning, which can lead to bacterial contamination and infection. Lack of social support, both from families and prison facilities, exacerbates this situation. In addition, the use of unhygienic absorbent materials, such as used cloths, by some prisoners suggests the need for further education on good menstrual hygiene. This condition is exacerbated by inadequate toilet facilities, without barriers and doors, which reduce the comfort and privacy of prisoners. This study highlights the importance of improved sanitation facilities and material support from prisons to help prisoners maintain good menstrual hygiene, thereby preventing the risk of infection and improving their well-being.

### **Menstrual Cycle Disorder**

The menstrual cycle is a sign of the maturity process of the reproductive organs which is influenced by the body's hormones and is related to the level of female fertility (Islamy, 2019). Based on the results of the study, it was found that two informants experienced polymenorrhea menstrual cycle disorder, which is a condition in which the menstrual cycle occurs with a span of less than 21 days and/or the volume of blood is the same or more than normal menstruation. Polimenorrhea indicates a problem with the ovulation process, especially the short luteal phase, which causes anovulation because the egg cannot mature completely, making fertilization difficult (Ilham et al., 2023). The other two informants experienced oligomenorrhea menstrual cycle disorder, a condition in which the menstrual cycle stops for more than 35 days.



Oligomenorrhea often occurs in polycystic ovary syndrome, which is caused by an increase in androgen hormones that interfere with ovulation, and can also occur in young people due to immaturity of the hypothalamic-pituitary-ovarian-endometrial axis (Pibriyanti et al., 2021). One more informant experienced amenorrhea menstrual cycle disorder, which is the absence of menstrual bleeding for at least 3 consecutive months (Fatimah and Ayu, 2024).

The female reproductive system exhibits regular cycles that prepare the body for pregnancy, but disruptions in these cycles, such as amenorrhea, polymenorrhea, and oligomenorrhea, can be a sign of underlying health problems and affect a woman's quality of life and fertility (Alghani, 2024). Informants who experienced amenorrhea did not menstruate for more than 3 months as many as 4 respondents (5.5%), and secondary amenorrhea occurs when a woman of reproductive age who has experienced menstruation suddenly stops menstruating for at least 3 consecutive months. Normal menstrual function includes four anatomically and functionally distinct structural components: the hypothalamus, anterior pituitary gland, ovaries, and genital outlet consisting of the uterus/endometrium, cervix, and vagina. If any of these components are dysfunctional or abnormal, menstrual bleeding cannot occur (Klein DA, Paradise, 2019). Menstrual cycle disorders in prisoners are in line with Sirait's research (2018) which found that women in correctional institutions experience irregular menstrual cycles due to stress and limited facilities such as toiletries, menstrual needs, and cleanliness of underwear (WHO, 2009). Research by Rabi (2020) stated that of the 83 inmates studied, most, 85.6%, took a shower only once during the menstrual period, and more than 4/5 of them changed pads only twice during the period. Female inmates tend to show a pattern of poor menstrual hygiene practices, which can have an impact on menstrual disorders (House in Haver 2017). An article by Nikita (2019) found that menstrual disorders and hygiene behavior during menstruation have a significant effect on the health of women of reproductive age group with the prevalence of pain (5.4%), irregular menstruation (4.2%), followed by polymenorrhea, oligomenorrhea, and amenorrhea, as well as the use of unhygienic tools such as cloth (37%).

This study has several limitations, including limited literature related to menstrual hygiene and menstrual cycle disorders, as well as limited informant documents in qualitative research. Limited access to the prison block was also an obstacle for the researcher, including taking pictures and documenting inmate activities. In addition, the limited time and energy of the researcher limited in-depth exploration of all relevant aspects, and research in a prison setting faces ethical challenges, including maintaining confidentiality and safety for participating inmates.

## Conclusion

Based on the results of the study, it was found that most prisoners were aged between 21-35 years, with most experiencing menarche at the age of 11-15 years and having a high school level education. The ongoing detention period was 3-12 months, with the most detention period being more than 61 months. A total of 27 prisoners experienced oligomenorrhea, 10 prisoners experienced polymenorrhea, and 4 prisoners experienced amenorrhea. Female prisoners in Class II B Women's Prison mostly have poor behaviors related to menstrual hygiene, such as not changing pads every 4 hours, using disposable sanitary products as well as cloth and reusable pads, not washing hands with soap before and after changing pads, sometimes cleaning the genitals before and after changing pads, sometimes cleaning the vagina from front to back, not using cotton underwear, disposing of menstrual hygiene materials out of place, and only bathing once a day. A total of 41 inmates experienced abnormal menstrual cycle disorders, while 32 inmates experienced normal menstrual cycles. This study found a significant relationship between menstrual hygiene behavior and menstrual cycle disorders in female inmates of class II B Padang City. The behavior of inmates while in prison affects menstrual cycle disorders, with the theme of menstrual hygiene behavior categorized as personal autonomy, menstrual hygiene materials, and social support. In addition, this study also

constructs the theme of menstrual cycle disorders with categories of inmates who experience menstrual cycle disorders such as polymenorrhea, oligomenorrhea, and amenorrhea.

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