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# Menstrual Personal Hygiene Behavior Among Adolescents with Physical and Intellectual Disabilities

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## Abstract

Reproductive health for adolescents with disabilities is often disregarded, and education on personal hygiene is insufficient because some people perceive menstruation as a sensitive topic and have a false belief that adolescents with disabilities have no sexual desire. This study aimed to determine the overview of personal hygiene behavior among adolescents with physical and intellectual disabilities when facing menstruation. The method used was qualitative, with case studies, in-depth interviews, and observations for data collection. The informants comprised four adolescents aged 19-21 years, two mothers, and two therapists for special needs children. This study was conducted at two growth and development clinics in South Jakarta, Indonesia, from July to September 2021. This study found a lack of apprehension about menstrual personal hygiene among mothers and adolescents with disabilities, a lack of understanding about menstrual personal hygiene in general among adolescents with disabilities, and inappropriate menstrual personal hygiene behavior among adolescents with disabilities. To conclude, this study underlines the importance of improving the ability of adolescents with disabilities in terms of menstrual hygiene behavior.

**Keywords:** adolescent, disabilities, menstruation, personal hygiene

## Introduction

The United Nations Children's Fund (UNICEF) estimates the number of children with disabilities globally at nearly 240 million children.<sup>1</sup> According to the 2018 Indonesian Basic Health Research, 3.3% of children aged 5-17 years in Indonesia have disabilities.<sup>2</sup> Adolescence is a significant stage in reproductive health with changes during puberty, a transition period from childhood to adulthood marked by hormonal changes such as menstruation.<sup>3</sup> Based on the 2013 Indonesian Basic Health Research data, 43.3 million young girls aged 10-14 years in Indonesia perform bad practices of hygiene, such as less awareness in taking care of the reproductive organs' hygiene during period.<sup>4</sup> Consequently, the incidence of infectious diseases related to the reproductive tract in Indonesia at the age of 10-18 years is by 25-42%, and 27-33% at the age of 18-22 years.<sup>5</sup> Nevertheless, problems associated with menstrual personal hygiene occur in adolescents without and with disabilities.<sup>6</sup>

Reproductive health for adolescents with disabilities is often disregarded. Most barriers to reproductive health care and education stem from the mistaken belief that adolescents with disabilities do not have sexual desire.<sup>7</sup> Furthermore, common problems related to puberty, such as mood swings and menstrual pain, are often experienced by adolescents with limited oral communication.<sup>8</sup> Female adolescents with disabilities may have a different experience of menstruation compared to those without disabilities. As reported, during menstrual cycle, female adolescents with disabilities more frequently have dysmenorrhea (menstrual pain), menorrhagia (severe menstrual bleeding), menstrual hygiene problems, and changes in mood and behavior, which is similar to premenstrual syndrome.<sup>9</sup>

Menstruation remains a taboo thing to talk about in Indonesia. According to UNICEF, one in four children in Indonesia has never received information on menstruation before having their first menstruation. Thus, the first menstrual cycle (menarche) could be a frightening experience.<sup>10</sup> Inadequate training and counseling about personal

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hygiene during menstruation and lack of information on menstrual personal hygiene for parents or caregivers provided to adolescents with intellectual and physical disabilities, result in a lack of knowledge and difficulties for the adolescents in performing personal hygiene behaviors during menstruation.<sup>11</sup> Adolescents with disabilities then should know how to maintain their reproductive health. An action to take is by practicing personal hygiene behavior.<sup>12</sup> According to UNICEF, personal hygiene behavior refers to women who practice clean menstrual management, that is, changing sanitary napkins as often as possible to absorb or contain blood during menstruation, using soap and water to wash the body as needed, having access to dispose of used sanitary napkins in the right and safe place, and can access the toilet to clean themselves comfortably while maintaining privacy. Adolescents should understand the knowledge of menstrual cycle and how to manage their menstruation without discomfort or fear.<sup>11</sup>

Studies and guidance on menstrual hygiene behavior in adolescents with disabilities are still limited; accordingly, the handling by the adolescents and parents or caregivers is less than optimal. This study aimed to determine an overview of menstrual personal hygiene behavior in adolescents with physical and intellectual disabilities, which further could be used as materials for planning and developing strategies in creating appropriate guidelines and interventions regarding menstrual hygiene behavior for adolescents with disabilities.

## Method

This qualitative study used a case study design to describe the personal circumstances or conditions of menstrual hygiene in adolescents with physical and intellectual disabilities. The major informants selected using purposive sampling were adolescents with physical and intellectual disabilities aged 15 to 24 years who had started menstruating and were willing to take part in in-depth interviews. While, criteria for supporting informants were parents and therapists who gave their consent to participate in an in-depth interview. This study took place at two growth and development clinics in South Jakarta, Indonesia, from July to September 2021.

The number of female adolescents with physical and intellectual disabilities at Clinic 1 was 16. However, only four of them had menstruation, and two were willing to participate in the study. While, at Clinic 2, of 31 female adolescents with physical and intellectual disabilities, 11 were having menstruation and only two were interviewed. The total of informants in this study was eight. The major informants consisted of four female adolescents aged 19-21 years with cerebral palsy (CP) and physical and intellectual disabilities who were having menstruation. Supporting informants included parents of two adolescents with disabilities and two of their therapists.

The severity levels of two female adolescents with CP and intellectual disabilities of the four female adolescents observed in this study were moderate and severe, respectively. For the adolescent with CP aged 19 years at moderate level, an in-depth interview could still be carried out as she was a student at SLB-D, a special senior high school for people with disabilities in Indonesia, and she was still able to communicate clearly. For the adolescent aged 21 years at severe level, an in-depth interview was taken with her mother because she was not able to speak, did not understand simple instructions, and had communication disorders. Adolescents with CP having good cognition were a 21 year-old student of Law, and a 20 year-old SLB-D student.

**Table 1. Characteristics of Major Informants**

Informant	Age	Education	Occupation	Diagnosis
In-1	21	Higher education (Bachelor's degree in Law)	Student	CP
In-2	21	-	-	CP + ID grade Profound (represented by the mother)
In-3	19	Senior high school	Student	CP+ID grade Moderate (IQ score: 49)
In-4	20	Senior high school	Student	CP

Notes: CP = Cerebral Palsy, ID = intellectual disability

In addition, this study involved supporting informants consisting of mothers and therapists of two adolescents with disabilities. Therapist informants interviewed were therapists working directly with adolescents with disabilities

and were willing to participate in the interview. Parents were included in supporting informants because they knew problems experienced by adolescents with disabilities and could provide answers from different points of view. While, the therapist informants were included to get their point of view on menstrual personal hygiene behavior performed by adolescents and parents who help with their children's menstrual hygiene.

**Table 2. Characteristics of Supporting Informants**

Informant	Description	Age	Education	Occupation
<b>Ik-1</b>	Adolescent's Mother	56	Bachelor of Chemistry	Private Employee
<b>Ik-2</b>	Adolescent's Therapist	27	Diploma IV of Physiotherapy	Physiotherapist
<b>Ik-3</b>	Adolescent's Mother	50	Vocational High School	Housewife
<b>Ik-4</b>	Adolescent's Therapist	28	Master of Reproductive Science	Physiotherapist

The research instruments used were observation guidelines and in-depth interview guidelines developed by the authors. Observation guidelines examined medical records of adolescents with disabilities to learn their diagnoses and motoric development abilities achieved. Interview guidelines consisted of general topics on personal identity and some other topics to be studied, such as knowledge of menstruation and menstrual personal hygiene, the source of information obtained by the adolescents, and personal hygiene behavior of the adolescents with disabilities. Tools used were notebooks, recording devices, and laptops for video conferencing.

The interview guidelines were tested on one adolescent with disability of the same criteria: 15- to 24-year-old adolescents, already having their menstrual cycle, and willing to conduct in-depth interviews), one adolescent with disability' parents, and one therapist for a child with special needs after filling in informed consent via Zoom platform on July 9, 2021. The time trial results required 30-45 minutes for each informant. After the trial, several questions were revised so that statements were easy to understand, questions were sorted well and added to improve the clarity.

Ethical consent was obtained from the Commission of Research Ethics and Community Engagement of the Faculty of Public Health, Universitas Indonesia on June 25, 2021. The permission for data sampling was applied by sending e-mail to the growth and development clinic managers. Approval for the research and data sampling was received on July 6, 2021. Direct observations took place in September 2021 at the two growth and development clinics in South Jakarta, Indonesia, to examine the medical records of adolescents with physical and intellectual disabilities to obtain an overview of the level of disability.

In-depth interviews were performed after the informants completed informed consent form sent via WhatsApp. Parents and adolescents were allowed to complete the consent form online. Two adolescents with disabilities completed the informed consent themselves, while the other two needed assistance from their parents due to their intellectual disabilities. The interview was taken online from July 11 to September 20, 2021, via Zoom platform (video conferencing) for  $\pm 45$  minutes for each informant. Informants' consent to be recorded during the interview had been performed by assuring a confidentiality of any information provided. Online interviews were employed because the government issued an Enforcement of Community Activity Restrictions policy to prevent an increase in COVID-19 cases; consequently, the growth and development clinics were closed from July to August.

In-depth interviews were carried out without a research assistant. The interview was then documented by Zoom Meeting recording to prevent any data loss, and the data validity could be accounted for. After the interview recording was completed, the recording was played and then transcribed verbatim. The transcribed data were coded by selecting relevant data to the topic of discussion and then summarized in a matrix form. This study used Content Analysis as an analysis method.

Confirmation and clarification of data obtained from informants after in-depth interviews were carried out to maintain the validity of the data. The triangulation method was then carried out by examining the medical records of the adolescents with disabilities. The source triangulation was also done by comparing and contrasting data from supporting informants, parents, and therapists of adolescents with disabilities.

## Results

The study results were obtained through the observation of four adolescents with disabilities as the informants. In-depth interviews were performed with three adolescents with disabilities and one representative of the mother of

adolescents with disabilities. These findings were aligned with several broad categories, including menstrual personal hygiene behavior, knowledge of menstrual personal hygiene, and source of information on personal menstrual hygiene. *Menstrual Personal Hygiene Behavior*

Based on the interview results, all adolescents changed their sanitary napkins if full of menstrual bleeding. The napkin-changing frequency was only twice a day on average because the sanitary napkins used were diapers with a greater blood capacity than sanitary napkins in general. They did not use the smaller size of napkin because it made them feel uncomfortable while sitting in a wheelchair, and they also had difficulty in positioning the napkins into the right position. However, some of them said that it was still challenging to find the right napkin because using diapers made them feel uncomfortable due to perspiration arising in the vaginal area.

The adolescents with disabilities used napkins made from towel pants as well, but it made them feel uncomfortable because it was difficult to wash and therefore unhygienic. Additionally, towel pants were reusable; then, they should be washed and sun-dried. In the end, the adolescents returned to using the 42-cm diapers during menstruation but still felt very uncomfortable because there was still a possibility of blood spilling out.

All of those adolescents complained of itching, blisters and redness in the groin area for their sensitive skin and overused diapers. To overcome this, they put olive and baby oil so their skin did not blister. According to the points of view of the adolescents' therapists, they rarely replaced diapers during both menstruation and urination; as a result, they were most likely prone to infection in the vaginal area. In addition, they also had problems like hypo-sensory. Most of them did not aware that they already had a vaginal infection.

The adolescents with disabilities needed their mothers' help in behaving hygienically because of their stiff hands. They also still used soap to clean the area of intimate organs. Most informants could not provide detailed directions for cleaning the intimate organs, but only explained that they cleaned the intimate organs using water. The adolescents needed some assistance while using sanitary napkins because it was difficult to do so in the bathroom. Unfortunately, the mothers who usually helped also needed assistance because of the unstable sitting conditions and their children having to be carried to the bathroom. The mothers were not able to easily help them since they had a record of lumbago and their children weighed more than 40 kg. This made them not to practice menstrual hygiene in their children. The adolescents with disabilities also found it challenging to practice menstrual hygiene behavior and to position their sanitary napkins comfortably due to their disability conditions, such as stiffness in hands, feet, and neck. They also could not feel anything if the napkin position was in a misplaced condition, so menstrual blood sometimes spilled out of the underwear.

In the disposal of used sanitary napkins, all adolescents still used containers wrapped in plastic. Some adolescents did not wash the napkins in advance, but immediately did wrap them in plastic and threw them in the trash for that the napkin content would fall apart when washed. Adolescents with disabilities should be educated about menstruation such as how to dispose of used napkins properly.

Table 3. Themes and Sub-themes Related to the Informant's Statement of Menstrual Personal Hygiene Behavior

Theme	Sub-theme	Informant Statement
Menstrual Personal Hygiene Behavior	Type of napkin and frequency of changing napkin	<i>"I once used towel pants, but it was uncomfortable and I can't wash them clean. Now, I'm wearing the longest 42-cm napkin. I only change the napkin when it's full." (In-1)</i> <i>"Her skin is more sensitive. You know, there are creases in diapers, right? If I don't put baby oil on her, her skin will blister." (In-2)</i> <i>"Hmm still wearing diapers during periods. Changing napkins is recommended twice a day." (In-4)</i> <i>"Napkins should be changed frequently at least every four hours. They do not so, only once a day. So, there is also risk of infection. Additionally, they also have problems such as hypo sensory, they are not aware that there is a problem of infection in the vagina." (Ik-4)</i> <i>"Diapers have to be changed frequently, I'm worried that disease will arise because it harbors bacteria due to blood and urine mixing and sticking to vital parts." (Ik-2)</i>
	How to clean the genitalia from menstrual blood	<i>"I usually only clean the front. But after defecating, I clean backwards. I just tried to stretch my hand to reach the back. Right now, I feel so itchy. I think I'm allergic to soap." (In-1)</i> <i>"The intimate organs are cleaned with soap, so it is clean. I dry her with a towel after wash, because her skin is sensitive." (In-2)</i> <i>"You know, it is quite hard to lift her, she has a large body. So, I only clean her genital only when showering." (Ik-3)</i>

Obstacles in performing personal hygiene during menstruation	<p><i>"If the napkin is misplaced, I just let it be, I don't notice it either." (In-1)</i></p> <p><i>"It's hard to take her to the bathroom. Child Z is over 40kg, and I don't have the strength to carry her." (In-2)</i></p> <p><i>"The challenge is I can't do it by myself, everything must be helped by mom. [Mom] must help put on pants and clean too. My arms, legs, and neck are stiff, you know." (In-4)</i></p>
Disposing of used pads and wearing pads	<p><i>"I throw the napkin immediately without washing. I'm afraid it will be messy, and it's gross." (In-1)</i></p> <p><i>"I washed the diapers, then I put them in plastic. Then I throw it in the trash. So, there is no longer blood in it." (In-2)</i></p>

### Knowledge of Menstrual Personal Hygiene

Based on the interview results, all informants described menstruation as the process of discharging dirty blood that monthly occurs in women, but not all the adolescents and parents can say the average length of a normal menstrual cycle. They changed the napkins only when the napkins were fully contained by menstrual blood. The proper procedure for cleaning intimate organs would be using water and soap. Only a few mothers can explain in which direction the correct way to clean intimate organs is from front to back so that feces in the anus are not carried to the front.

All the adolescents told how they felt during their menarche. They were shocked, uncomfortable because of the pain, and confused because they had never been explained about menstruation before. All the adolescents experienced complaints of irritation and blisters in the groin area, itching around the intimate organs, redness of the skin caused by using diapers too long, and allergies to the soap they used. Most adolescents had an irregular menstrual cycle (longer than 40 days) and experienced excessive pain during menstruation. Mothers gave painkillers and sour turmeric herbal medicine to make menstrual blood flow more smoothly. Even some of the adolescents stayed still and did not move much, sometimes showing symptoms of menstrual cramps.

According to therapists' point of view, the adolescents and their parents still needed the knowledge related to reproductive health, such as menstrual hygiene, because many parents had the wrong view and assumed that their children would not reproduce like typical adolescents, so they often dismissed the menstrual hygiene. Moreover, many parents assumed that their children would not get married in the future. Knowledge of menstruation is fundamental for both the adolescents and their parents to prevent adverse effects such as vaginal infections. Therefore, education in the form of seminar or counseling on how to have a proper menstrual hygiene is needed further.

**Table 4. Themes and Sub-themes Related to Informant's Statement on Knowledge of Personal Menstrual Hygiene Behavior**

Theme	Sub-theme	Informant's Statement
Knowledge	Understanding of menstruation	<p><i>"Menstruation produces dirty blood. I don't know how many days the normal menstrual cycle are." (In-1)</i></p> <p><i>"Menstruation... a monthly production of dirty blood. Menstrual cycle? Errr." (In-4)</i></p>
	Understanding of menstruation personal hygiene	<p><i>"The full napkin should be immediately changed and intimate organs are cleaned by spraying water. I don't know the direction." (In-1)</i></p> <p><i>"Wearing diapers is recommended twice a day, changed during the menstruation." (In-3)</i></p> <p><i>"Parents assume children with disabilities will not reproduce in the future, so they ignore menstrual hygiene." (Ik-4)</i></p>
	The experience of menarche and menstrual symptoms in adolescents with disabilities	<p><i>"Her menstruation got early. She had it before nine years old. I was shocked, I thought she was wounded or something. The cycle is irregular, she hasn't got it for three months. When she has her period, she likes to stay quiet, doesn't move much, sometimes she has seizures." (In-2)</i></p> <p><i>"Sometimes I have pain in my stomach and waist. When I'm on my period, I'm upset, crying and grimacing because it hurts." (In-3)</i></p> <p><i>"I had complaints of itches or blisters on the intimate organs like a red rash, but she told me it is because we change the napkin's brand." (In-4)</i></p>

### Personal Menstrual Hygiene Information Source

All the adolescents and their mothers have smartphones, social media platforms such as Facebook and Instagram accounts, and access to the internet very well. However, the mothers had never sought out information on menstrual hygiene either from social media or by participating in reproductive health seminars or trainings. The reasons were that such information could be obtained from her own experience when cleaning her period, the symptoms her daughter experienced during menstruation were not too severe to handle alone, and her adolescent daughter had a normal metabolism like children in common.

The adolescents furthermore rarely got information related to menstruation prior to their first menstruation and had not received menstrual hygiene information from parents, therapists, and teachers at school. The therapists stated



that neither the adolescents nor their mothers were seeking information on menstrual hygiene because the topic was still considered taboo and ignored related problems. The therapists suggested that they should also be educated by reproductive health professionals. Therefore, they could also comprehend the menstrual hygiene and provide true information to the adolescents and parents.

Table 5. Themes and Sub-themes Related to Informant's Statement on the Sources of Information on Menstrual Personal Hygiene

Theme	Sub-theme	Informant's Statement
Source of Information	Information obtained by the mothers of adolescents about menstrual personal hygiene	"I have never attended training on proper menstrual hygiene in children with disabilities. I think In-1 has a normal metabolism like typical children" (Ik-1)
		"I never sought information on it. If there's a problem with my child, I will learn from my experience." (In-2)
		"Err not yet, I think her symptoms are not too severe, so I don't find out more." (IK-3)
	Information obtained by the adolescents about menstrual personal hygiene	"No, not at school. [I] know menstrual information only from Google." (In-3) "I never got that information from anyone." (In-4) "They rarely seek information on menstruation, maybe because it is still taboo and still ignored." (Ik-4) "We therapists also need to be literate about menstrual hygiene." (Ik-2)

Discussion

Female adolescents with disabilities have a limited ability to practice the menstrual hygiene, resulting in a high risk of vaginal infection.<sup>12</sup> According to a cross-sectional study in India, 93 adolescents with CP stated that they used napkins (69.4%), while the rest used old rags, assisted by their mothers or caregivers to change the sanitary napkins (38.8%). Also, adolescents with CP showed signs of vaginal infection (58.3%), and some showed signs of premenstrual syndrome (25%). The pain in adolescents with disabilities is caused due to their stiff muscle conditions, muscle cramps, and joint limitations.<sup>13</sup>

The results of study by Zacharin indicated that fifty four of the 79 (68.4%) menstruating adolescents described their menstrual cycles as regular, with cycles ranging from 21 to 35 days. Twelve girls (15%) had cycle lengths of less than 21 days, and 13 (16.5%) of greater than 35 days.. Various medical co-morbidities and the use of medications that are common for people with CP might cause menstrual cycle irregularities. Irregular menstrual cycle could also be resulted by the limited mobility or wheelchair dependence and deficient vitamin D due to limited exposure to the sunlight.<sup>14</sup>

Adolescents with disabilities seriously require information on dealing with menstruation because many of them do not understand what they should do while they are on period, such as improper use of napkins, rarely changing napkins, unstable emotional changes, menstrual pain, and improper personal hygiene.<sup>15</sup> With the proper approach to menstrual management in female adolescents with disabilities, it is expected that they would be able to manage their menstruation independently.<sup>16</sup>

The cloth napkin is often not recommended due to its repeated use. In addition, it is unhygienic washing process which might result in rashes and infections. Cloth-type napkins are also risky for abnormal vaginal discharge and skin irritation. Disposable sanitary napkins are preferred because they are more hygienic, convenient, and easy to use. However, the disposal process of disposable napkins can produce much waste; hence, a proper waste management is needed to avoid some environmental issues.<sup>17</sup>

Sanitary napkins should be changed every 4-5 hours even if only a little blood comes out and can be changed more often if more blood comes out.<sup>18</sup> Adolescents often wait until the napkin is fully contained with blood to change them.<sup>18</sup> Continuous and prolonged diaper use may cause skin irritation and reproductive tract infection.<sup>19</sup> The blood released during menstruation contains bacteria that multiply within 30 minutes, so that within 1-2 hours there are too many bacteria. It is necessary to wash hands before and after changing the napkins.<sup>20</sup>

Adolescents with physical and intellectual disabilities need assistance for menstrual hygiene, such as cleaning the genitals from menstrual blood.<sup>14</sup> The proper way to clean a woman's genitals is to use clean water in the direction from the front (vagina) to the back (anus) so that bacteria from the anus do not enter the vagina.<sup>21</sup> There is no need to frequently use particular cleansing soaps since the vagina already has a natural mechanism to maintain its acidity to prevent bacteria from entering the vagina.<sup>22</sup> Frequent use of soap will kill the good bacteria in the vagina.<sup>22</sup>

The disposable napkins should be wrapped first for disposal to prevent disease transmission. If there is much menstrual blood in the sanitary napkin, it should be washed first with running water, then wrapped and thrown into a

special trash can for disposal. Wrapping the napkins should use paper instead of plastic since plastic is nondegradable so that it can pollute the environment.<sup>10</sup>

Female adolescents with disabilities are poorly informed and unprepared for menarche due to the inadequate knowledge of menstruation and menstrual hygiene behavior.<sup>6</sup> A study in Yogyakarta, Indonesia, indicated that about 61.5% of adolescents are categorized as lacking knowledge. A phenomenon that often occurs in the community is the feeling of taboo towards menstruation so that adolescents' acceptance of some physical and psychological changes related to menstruation is poorly understood. Knowledge of menstruation can influence the attitude and behavior of the following periods. Behavior towards menstruation is a response in adolescents with disabilities to symptoms that occur during menstruation, such as discomfort due to menstrual pain and emotional imbalance.<sup>15</sup>

During the first period, adolescents mostly catch discomfort feelings, such as fear and shock to see blood release or stick to their underwear.<sup>23</sup> They thought that there is a disease or injury. The feeling arises in adolescents who, when they get their first period, have not yet received information on menstruation.<sup>23</sup> Preparation for menstruation, such as knowledge and management during periods, is minimal for adolescents with disabilities.<sup>15</sup>

Moreover, a misconception that people with disabilities do not have the same reproductive system as people without disabilities makes them less likely to receive information on menstrual hygiene management.<sup>24</sup> Yet, such information is usually kept secret from people with intellectual disabilities because it is thought that they will not understand it. If this is the case, communications while providing information should be more simplified and adapted to their level of understanding to manage their periods.<sup>25</sup>

Based on the problems described, educational media are needed to elevate the knowledge of adolescents with disabilities and their parents.<sup>26</sup> Providing educational media on menstrual health management in posters, videos, leaflets, and modules can increase the adolescents' knowledge and attitude to be more positive towards menstrual symptoms.<sup>27</sup> The media provision in the form of a booklet affects an improvement in the knowledge of menstruation in adolescents with disabilities. The booklet has several advantages, including that it contains images and attractive colors and is easy to understand; therefore, children with disabilities are interested to read it. Growth and development clinics should provide information in the forms of posters, videos, and booklets about menstrual hygiene procedures to maintain the reproductive health of adolescents with disabilities.<sup>28</sup>

## Conclusion

This study underlined the significance of increasing adolescents with disabilities' independence in menstrual hygiene behavior. Evidence shows adolescents with disabilities and their caregivers receiving less information, thus they have not been practicing proper menstrual personal hygiene behavior, and they still need some assistance from mothers or caregivers. Providing information at growth and development clinics through posters, videos, and booklets on menstrual hygiene procedures provides knowledge to adolescents with disabilities to maintain their reproductive health. Interventions from therapists by creating more programs to train adolescents' independence in practicing menstrual hygiene are needed to minimize adolescents' dependence on their parents or caregivers.

## Abbreviations

UNICEF: United Nations Children's Fund; CP: Cerebral Palsy.

## Ethics Approval and Consent to Participate

The authors guaranteed confidentiality on any information provided by informants. All informants were explained about the research and requested willingness to fill out an informed consent form according to the Declaration of Helsinki, which states that the informant's participation can provide voluntary and non-coercive informed consent. Participants were allowed to continue or stop their participation in the study. Ethical approval was obtained from the Commission of Research Ethics and Community Engagement of the Faculty of Public Health, Universitas Indonesia No. Ket-353/UN2.F10D11/PPM.00.02/2021).

## Competing Interest

The authors declared that they have no competing interests in this study.

## Availability of Data and Materials

Data and materials are available upon request.

## Authors' Contribution

NKE conceived the idea and planned the research, carried out the research, discussed the results, writing a draft of the manuscript. AK, EW, and KNS directed and supervised this study, overviewed, and gave final approval to the manuscript.



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