

# 'It's all about self-reliance': North Korean Adolescents' Menstruation Experiences and Management

Curie Lee<sup>1</sup> and Alan Bairner<sup>#</sup>

<sup>1</sup>Dwight School, Seoul, South Korea <sup>#</sup>Advisor

#### ABSTRACT

In low-income countries such as North Korea, adolescents experience a decreased quality of schooling and health as a result of poor menstrual health management. The purpose of this study was to explore menstrual health management among North Korean adolescents through interviews with North Korean defector women who have settled in South Korea. Semi-structured interviews with seven participants were conducted from November 2021 to January 2022. The findings showed that North Korean adolescents lacked knowledge of menarche and that menstruation was merely perceived to be a bodily excretion. Moreover, North Korean adolescents received little or no support from their families or society during menstruation. The bodies of male and female students were not differentiated, resulting in female adolescents becoming desensitised to the physical and mental pain of menstruation. Furthermore, the participants recalled resorting to suboptimal alternatives to hygiene products and inappropriate menstrual practices. The findings suggest that it may take a long time to address menstrual poverty among North Korean adolescents and that measures to strengthen human rights for North Korean adolescents' health should be prepared at an international level. Improved education for North Korean youth and active support from parents and teachers regarding menstrual practices are also necessary.

#### Introduction

According to the North Korean Refugees Protection and Settlement Support Act, the term 'North Korean defector' refers to "persons who have their residence, lineal ascendants and descendants, spouses, workplaces, etc. in the area north of the Military Demarcation Line (hereinafter referred to as "North Korea"), and who have not acquired any foreign nationality after escaping from North Korea" (2019). A total of 33,752 North Korean defectors entered South Korea from 1998 to 2020 (Ministry of Unification, 2021). The Ministry of Unification reports that 72.0% of all North Korean defectors since 1998 have been women. Their primary motives for defecting are (1) access to adequate food (22.8%), (2) freedom from monitoring and control in North Korea (20.5%) and (3) a better living environment for their families (13.1%) (Korea Hana Foundation, 2021).

It is difficult to know how these women managed their menstruation during the defection process. Studies on menstruation management among refugees (Kemigisha et al., 2020) have reported that hygiene products are often distributed by camp facilities. However, North Korean defector women do not always have access to such facilities during defection. Thus, to understand the menstruation experiences of North Korean defector women, it is necessary to first examine their adolescent menstruation experiences and management.

Adolescence is the transition from childhood to adulthood, and is accompanied by physical, psychological and social changes. During this transition, according to Stanford Children's Health, "hormonal changes"

(n.d.) accompany the appearance of secondary sexual characteristics. Menstruation is a sign that the female adolescent body is growing well and is capable of pregnancy.

In general, 'menstruation is a physiological process that happens every month to about 1.8 billion people worldwide from menarche to menopause' (Carneiro, 2021). A woman usually menstruates for a combined period of seven years (UNICEF, 2018). For most women, the menstrual cycle usually involves physical and psychological distress, such as premenstrual syndrome and ovulation pain. Thus, under normal circumstances, managing the menstrual experience requires consideration and support from family and society.

The World Health Organization (WHO) and UNICEF define menstrual hygiene management as follows:

"Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear" (UNICEF 2019).

'Menstrual poverty' is an important issue that is not limited to North Korea. During July 2021, the Menstrual Product Price Stabilization Act came into effect in South Korea (Kang, 2021). This was five years after a news story involving low-income adolescents using shoe insoles and toilet paper for menstrual management because they could not afford sanitary pads (Kim, 2016). In 2020, Scotland passed the world's first legislation to provide free menstrual products in public places and introduced policies and support measures to alleviate menstrual poverty at the national level (Diamond, 2020). In North Korea, the eradication of menstrual poverty will require more than just providing menstrual products and basic hygiene facilities.

Health should be guaranteed regardless of race, nationality or gender, meaning that North Korean adolescents and defector women also deserve a healthy menstrual experience. Previous studies have provided insights into the quality of menstrual hygiene and management among women and girls in low- and middle-income countries (LMICs) (Hennegan et al., 2019; Kemigisha et al., 2020;). The four factors related to menstrual poverty among low-income women are a lack of access to sanitary products, a lack of wash facilities, a lack of dignity and a lack of education about menstruation (Tull, 2019). However, few studies have described the knowledge and experiences of menstruation and MHM among refugees and displaced young females (Kemigisha et al., 2020).

Studies on North Korean adolescents' and defector women's menstrual experiences and management are particularly scarce. Relevant research on North Korean defectors to South Korea is scant due to difficulties in accessing them. With the growing international interest in empowering girls and women through Sustainable Development Goals, there is a need to investigate menstruation and MHM in the North Korean context. Therefore, this study aimed to examine North Korean adolescents' menstrual experiences and management through qualitative interviews with North Korean defector women.

# **Research Method**

#### Participant selection and data collection

The participants in this study were seven women who had defected from North Korea. As most North Korean defector women in South Korea wish to live without revealing their identities, contacting these individuals was difficult. Interviews were made possible only with the support of people encountered while conducting volunteer medical work at an organisation engaging with North Korean defectors (Saejowi). Establishing rapport was necessary to obtain accurate and meaningful responses from these women. Participants of various ages were selected to obtain information representative of their diverse experiences. As shown in Table 1, the selection criteria also considered the wide range of the participants' personal histories, such as geographical origins or

former occupations in North Korea. However, certain cells are empty at the participants' requests. The participants had spent their teenage years in North Korea and defected to South Korea via China, Laos and Thailand. Their ages, hometowns and times of defection varied, and their motives for defecting included searching for adequate food resources and freedom.

	Name	Year of Birth	Hometown	Defector Period	Age During Men-
		(Age)			arche
1	Song Ji-young	1993 (30)	Baekdusan side	2012	16
2	Jang Yoon-mi	1983 (40)	Hyesan	2000	14
3	Kim Min-jung	1974 (49)	Chongjin		19
4	Park Su-young	1973 (50)	Hamkyungdo	2015	14
5	Han Min-a	1973 (50)	Hyeryeong	2010	15
6	Lee Jung-ok	1958 (64)	Yeongil	2008	14
7	Jung Geum-ja	1948 (72)	Hamkyungdo		14

**Table 1**. North Korean defector women's backgrounds

This qualitative study was conducted in Seoul, where the participants resided. Interviews were conducted from November 2021 to January 2022. As most North Korean defector women are psychologically traumatised by the defection process, the interviews were initially scheduled to last no longer than 30 minutes to avoid causing anxiety and fear. The interviews were continued if the participants consented, or another appointment was made to ask additional questions if they desired a break. The interviews were conducted either remotely (by phone) or in a face-to-face setting, and a semi-structured interview format was used to allow flexibility. The interviews were conducted in private settings (e.g. homes and restaurants). Notes were taken during each interview and were checked with the participant after the interview to ensure accuracy.

The interview questions centred on two main questions:

1. What are North Korean adolescents' menstrual experiences?

2. What is adolescent menstrual hygiene management like in North Korea?

#### Ethical considerations

In consideration of the ethical issues arising in field research, after obtaining consent from the participants, the interviews were conducted in places and at times convenient for them. To ensure anonymity and confidentiality, all participants are referred to by pseudonyms in this paper.

#### Data Analysis

The interview data were transcribed and systematically classified. This was followed by a six-step analysis procedure, following Marshall and Rossman (2006): (1) organising and familiarising oneself with the data, (2) generating categories, subjects and patterns, (3) coding the data, (4) confirming the initial understanding and interpretation of the data, (5) finding alternative interpretations and explanations and (6) drafting the article. By analysing the transcribed interview content, repeated words, phrases, topics and situations were categorised, and the content was interpreted within these categories to reveal North Korean defector women's menstrual experiences and management. This process was used to identify connections between the interviews. The analytical methods of Hennegan et al. (2019) and Kemigisha et al. (2020) were used to describe the most important



themes and the relationships between them. The topics and subtopics emerging from the interviews are presented in Table 2.

Category	Topics		
North Korean adolescent men-	Menarche and menstrual experiences		
struation experiences	Social support: family and school		
	Physical and mental pain		
North Korean adolescent men-	Shortage of menstrual hygiene management supplies		
strual hygiene management	Hygiene practices		
and practices	Asking for help: medical professionals, family and friends		

# Results

#### North Korean adolescents' menstruation experiences

In North Korea, the term for menstruation has varied over time, including 'hygiene', 'menstruation' and *dalgeori* (a term used by the older generation). The interview data reveal that most North Korean defector women did not have accurate knowledge of menstruation during adolescence, nor did they understand the importance of menstruation to women. Thus, they lacked any understanding of hygiene management.

#### Menarche and menstrual experiences

Most participants reported that menarche occurred after the age of 14. Although they received 'female student hygiene education' or 'female student training' in North Korean middle schools, they were not provided with accurate information about menarche, menstruation or management thereof. According to one interviewee, a myth about the cause of menstruation was circulating among students at the time, which was the result of inaccurate knowledge.

"When we were young, I think we heard that a woman can get pregnant even if she holds a man's hand... A friend had an early menstrual period and blood just dripped under her chair. The kids called her an idiot, saying she had done stuff with boys" (Lee Jung-ok).

The participant wondered, "I've never touched a man's hand, so why is this happening to me?" (Lee Jung-ok).

Menarche was associated with emotions such as surprise, shock, embarrassment and shame at the sight of blood. At the same time, the emotions and pain related to menstruation were not socially acceptable, and North Korean women had no choice but to become apathetic towards the changes in their bodies during menstruation.

#### Social support: family and school

Despite the influence of the menstrual experience on the growth of adolescents, the participants received little familial support and were not prepared for menarche. Menstruation was an uncomfortable topic among family members. Mothers and daughters did not discuss their menstrual experiences with one another and were expected to solve their menstrual problems independently. In middle school, information on menstruation was taught only in the subject 'Female Student Training', which provided no valuable information on menstruation and management but was limited to instructions for making sanitary pads. Thus, the participants learned almost nothing from their schools or parents other than this, beyond which the bodies of male and female students were not differentiated in a school environment, as the bodily demands of menstruation were not recognised.

# Journal of Student Research

One interviewee commented, "No, there is no such thing at all... There is no process to take care of each and every little thing. It's all about self-reliance" (Jung Geum-ja).

Another said, "My parents didn't even know how to teach me about it and hid it from us after that. They hid it from us, and we hid it from our mothers. We both hid it from each other" (Lee Jung-ok). She added, "There is a subject called female student training. The book teaches us how to make clothes, and sanitary pads at the end. But there is only one page, so the teacher just skips it. Because it's the last one" (Lee Jung-ok).

#### Physical and mental pain

The feelings of surprise, shock, fear, embarrassment and shame that the participants felt when they experienced menarche did not worsen, as these feelings were not recognised by their families or society. All participants reported that they had never thought about or felt menstrual cramps during their teenage years. For North Korean adolescents, menstruation was nothing more than 'excrement'. Additionally social considerations for managing this mental and physical menstrual pain, such as an absence from school, did not exist. As regards to support, one participant stated simple that there was "None at all" (Kim Min-jung).

#### Menstrual hygiene management and practices in North Korea

#### Shortage of menstrual hygiene management supplies

The participants recalled that most of their sanitary pads were made from household towels or cloths. Disposable sanitary pads were available only to the wealthy (such as the wives of Workers' Party officials) and could be purchased only in Pyongyang. In addition, as a participant called, the military provided female soldiers with small quantities of disposable sanitary pads.

"When you go to the army, you get supplied with a few things. Since I was supplied with a lot of cotton underwear, I used it as it was, and later, I would take a cotton towel and bring it home" (Gang Hwa-ok).

During the 2000s, sanitary pads, previously available to a small number of women, were supplied through the market, and it seems that students were no longer taught how to make their own. Song Ji-young, who was born in 1993, reported using disposable sanitary pads during menarche and said that she did not receive the 'Female Student Training' education at school. She stated, "There is such a thing as hygiene education, but we didn't make sanitary pads".

Unfortunately, the price of sanitary pads limited the number of people who could afford them. One participant stated, "In North Korea, until I left, sanitary pads were only in Pyongyang and not in the provinces, so I used cloth... My monthly salary was 50 won, but the sanitary pad was 6 won" (Han Min-a)

The younger participants stated that people living outside Pyongyang could purchase *jongtongpyeon* (Chinese painkillers available in North Korea) and sanitary pads from Chinese merchants in local markets (*jangmadang* in North Korean). Despite this, sanitary pads were still difficult to obtain, and even women from households that could purchase them could only afford to use one or two while travelling.

As previously noted, students were at one time taught how to make sanitary pads through the school subject 'Female Student Training'. The participants reported that, due to the scarcity of disposable sanitary pads, most women reused sanitary pads, bras and panties that they had made during their teenage years. Those struggling to make a living had never seen a sanitary pad as teenagers and had to make their own using any available fabrics and cloths (such as cotton blankets, fathers' underwear or socks). Women from relatively wealthy families could use household towels, but most poor families could use only old cloths and fabrics. Regarding the reuse of sanitary pads, the participants recognised the importance of proper cleanliness but had no access to detergents and merely rinsed with water.

"There is hygiene education. I made bras, and then I make panties like this, and so on. The teachers taught me how to even make sanitary pads. It's a female student's training" (Jang Yoon-mi).

#### Hygiene practices

Hygiene practices during menstruation involved making sanitary pads. However, the participants never considered using appropriate hygiene products, and people who lacked food could not afford sanitary pads. There were no resources (water) or spaces to wash oneself in many North Korean households. The participants recalled washing their hair with cold water at home when necessary and visiting public baths once a month to wash their bodies. Some participants became accustomed to this situation and desensitised to the unpleasantness of being unable to wash themselves, the smell of menstruation and menstrual blood stains on their clothes. The lack of resources to remove stains from clothing meant that these stains were not uncommon, meaning it was difficult to create shame about them.

As an interview commented, "Where is the hot water in the house? It is heated in a cauldron. I went to a public bath once a month. It's like a *dotegi* market with how crowded it is" (Kim Min-jung) Another participant added that these conditions made bedbugs common. She said, "I bet you have never seen bedbugs in the house. Bed bugs would crawl around everywhere" (Kim Min-jung).

#### Asking for help: medical professionals, family and friends

The participants had no appreciation of protecting their bodies, so they had never considered receiving support from their families or society. When experiencing pain, they were able to purchase traditional Chinese painkillers.

The participants recalled that there were local doctors, but visits to obstetricians were considered forbidden. Lee Jung-ok, who had worked as a nurse in North Korea, would have considered visiting the obstetrician only if she had been on the verge of death.

Another woman remarked, "I've never been to a hospital when I was sick. There is no such thing as a pain reliever when it comes to headaches or chills, but we would get *jongtongpyeon* from China. Chinese people would come to my house ... Sometimes delivering medicine for us to buy" (Jang Yoon-mi).

# Discussion

The purpose of this study was to investigate through interviews the menstrual health practices of North Korean defector women during their teenage years in North Korea. The findings show that the participants had little to no knowledge of menstruation when they experienced menarche. Furthermore, they received little or no social or familial support and viewed menstruation as nothing more than bodily excretion (like urine). They were unable to recognise the physical and mental pain that accompanies menstruation, mainly because it was an unacceptable way to feel in North Korean society. Essential knowledge of the body, hygiene management and supply of hygiene products were also not guaranteed, even at a minimal level. If asked what they needed most, the participants would have named food, not sanitary pads.

Three main themes emerged from the interview data: knowledge and experience related to menstruation among North Korean adolescents, sociocultural factors related to menstruation and a lack of social support systems for North Korean adolescents to manage menstruation.

First, studies conducted in other LMICs have reported limited knowledge of puberty among young females before the onset of menarche (Ivanova et al., 2018; Kemigisha et al., 2020). Similarly, this study found a lack of knowledge regarding adolescent menstruation and premenstrual management among North Korean defector women. However, contrary to previous studies on low-income countries and refugees, which have described anxiety or fear resulting from a lack of preparation for menstrual management, these experiences were not long-lasting as North Korean adolescents were forced to view menstruation as nothing more than a

bodily excretion. In North Korea, a female student's body was not differentiated from a male student's body, so it was not socially protected. Basic knowledge of the primary sexual characteristics of girls, such as breast and uterus development, and the supply of sanitary pads were not taken seriously. The participants recalled that menstruation experiences and knowledge were not important to them and that they were apathetic to menstrual problems to the extent that these problems were not voiced.

Second, negative sociocultural attitudes towards menstruation did not allow North Korean adolescents to show signs of physical inability. Research on adolescents in Nepal has revealed how myths and taboos surrounding menstruation led to an illegal menstrual practice called *chhaupadi*, whereby many adolescents choose to menstruate outside of their homes due to negative sociocultural attitudes (Thomson et al., 2019). This shows how social and cultural beliefs can negatively affect the lives of females and exacerbate gender inequality and discrimination (Thomson et al., 2019). In North Korea, there was also a tendency to believe that menstruation suggested promiscuousness, and menstruating women were forbidden from taking a taxi. Additionally, as in Ghana, where shame surrounding menstruation led to "secretive coping strategies" (Rheinländer et al., 2019), adolescents in North Korea could not share their feelings of shame or fear of being teased during menstruation. However, other studies have reported that extreme menstrual pain, severe bleeding and poor hygiene led to absenteeism among girls (Kemigisha et al., 2020). Conversely, the physical activity of North Korean adolescents was not allowed to be affected by their menstruation, and it was inconceivable to miss school or take a break due to menstruation. Thus, female adolescents became desensitised to menstrual pain and receiving medical treatment for menstruation was unthinkable.

Third, as reported by other studies on menstruation in other low-income countries, refugees and displaced individuals (Schmitt et al., 2017; Kemigisha et al., 2020), the supply of sanitary products in North Korea was insufficient. Panties, bras and female hygiene products (sanitary pads) were available only to wealthy women, such as Workers' Party officials. Although they are currently available on the market, they are too expensive for most women. Consequently, women use old fabrics and rags to make sanitary pads. The participants in this study recalled using cold water to rinse these sanitary pads and being unaware of concepts such as infection, disinfection and hygiene. This lack of hygiene products leads to self-reliance. Moreover, North Korean adolescents solve these problems independently rather than by seeking help. Despite being at an age during which they require help and support from their parents and society, they have been taught *ja-lyeog-gaeng-saeng* ('self-reliance') from birth. 'Self-reliance' is the basic principle of life that North Korean society demands of its members, which is almost certainly a response to the scarcity of livelihood resources.

# Conclusion

This study examined North Korean adolescents' menstrual health practices as reported by North Korean defector women to better understand their experiences. Safe and healthy conditions for menstruation must be guaranteed for all women, and North Korean adolescents and women should also enjoy these rights. It will take a long time for North Korean adolescents to receive proper menstrual education and hygiene resources. Thus, at an international level, it is necessary to introduce measures to strengthen the human rights and health of North Korean youth. Comprehensive menstrual education and active support from parents and teachers in North Korea are also necessary.

The valuable data provided by North Korean defector women can be used as a starting point for further research into menstrual poverty among North Korean adolescents. Furthermore, to gain a deeper understanding of the menstrual health and practices of North Korean defector women, future studies should investigate their menstrual experiences and management during their migration and integration into South Korean society. It is hoped that research on North Korean youth will continue and will produce meaningful results.

# Limitations

This study relied on a qualitative analytical method, and the small sample size of participants limits the generalisability of the findings to all North Korean youth. Nevertheless, qualitative research can be conducted with small samples and obtain in-depth, detailed results. Each interview provided insights into menstrual health as understood by a participant, in addition to the issues and needs that North Korean youth may face today.

If the cases of North Korean defectors in their 20s had been included, this study could have also examined the menstrual experiences of more recent North Korean youth. However, the COVID-19 crisis has made it difficult for people to leave North Korea due to increased border security and the implementation of facial recognition devices in transport in China (BBC News Korea, 2021). This has reduced the number of North Korean defectors to South Korea and, consequently, limited the possible sample size of this study.

## Acknowledgments

I must first express my utmost gratitude towards my advisor for his immeasurable guidance and wisdom. This research would also have been impossible without the responses and support from the North Korean defector women interviewed, and the assistance of Saejowi, through which these participants were contacted.

# References

BBC News Korea. (2021, July 1). " $\Box \Box \exists 33 \Box$ " [North Korea: '33 North Korean defectors entered South Korea in the first half of this year']. BBC News  $\Box \Box \Box$ . https://www.bbc.com/korean/news-57677894.amp

Carneiro, M. M. (2021). Menstrual Poverty: Enough is Enough. *Women & Health*, *61*(8), 721–722. https://doi.org/10.1080/03630242.2021.1970502

Diamond, C. (2020, February 24). Are Scots going to get period products for free? *BBC News*. https://www.bbc.com/news/uk-scotland-scotland-politics-51629880

Hennegan J, Shannon AK, Rubli J, Schwab KJ, Melendez-Torres GJ (2019) Women's and girls' experiences of menstruation in low- and middle-income countries: A systematic review and qualitative metasynthesis. PLoS Med 16(5): e1002803. https://doi.org/10.1371/journal.pmed.1002803

Ivanova, O., Rai, M., Mlahagwa, W., Tumuhairwe, J., Bakuli, A., Nyakato, V. N., & Kemigisha, E. (2019). A cross-sectional mixed-methods study of sexual and reproductive health knowledge, experiences and access to services among refugee adolescent girls in the Nakivale refugee settlement, Uganda. *Reproductive health*, *16*(1), 35. https://doi.org/10.1186/s12978-019-0698-5

Kang, M. (2021, June 1). 장혜영, 생리대가격 안정화법 발의..."모든 여성 월경권 누려야" [Hyeyoung Jang, proposes a method to stabilize the price of sanitary napkins..."All women should enjoy the right to menstruation"]. 연합뉴스 [Yonhap News]. https://www.yna.co.kr/view/AKR20210601130900001?input=1179m

Kemigisha, E., Rai, M., Mlahagwa, W., Nyakato, V. N., & Ivanova, O. (2020). A Qualitative Study Exploring Menstruation Experiences and Practices among Adolescent Girls Living in the Nakivale Refugee



Settlement, Uganda. *International journal of environmental research and public health*, *17*(18), 6613. https://doi.org/10.3390/ijerph17186613

Korea Hana Foundation. (2021). 탈북동기 [North Korean Defector Motives]. In *Korean Statistical Information Service*. https://kosis.kr/statHtml/statHtml.do?orgId=437&tblId=DT\_43701N\_011&conn\_path=I3

Marshall, C., & Rossman, G. B. (2006). Designing Qualitative Research. In *Google Books*. SAGE. https://books.google.co.kr/books?id=Wt3Sn\_w0JC0C&lpg=PP1&dq=inauthor%3A%22Gretchen%20B.%2 0Rossman%22&hl=ko&pg=PR8#v=onepage&q&f=false

Ministry of Unification. (2021). 북한이탈주민 입국인원 현황[Current Status of North Korean Defectors Entering the Country]. Ministry of Unification. https://www.unikorea.go.kr/unikorea/business/NKDefectorsPolicy/status/lately/

North Korean Refugees Protection and Settlement Support Act, 2 (2019). https://www.law.go.kr/LSW/lsInfoP.do?chrClsCd=010203&lsiSeq=206648&viewCls=engLsInfoR&urlMod e=engLsInfoR#0000

Rheinländer, T., Gyapong, M., Akpakli, D. E., & Konradsen, F. (2019). Secrets, shame and discipline: School girls' experiences of sanitation and menstrual hygiene management in a peri-urban community in Ghana. *Health care for women international*, 40(1), 13–32. https://doi.org/10.1080/07399332.2018.1444041

Schmitt, M. L., Clatworthy, D., Ratnayake, R., Klaesener-Metzner, N., Roesch, E., Wheeler, E., & Sommer, M. (2017). Understanding the menstrual hygiene management challenges facing displaced girls and women: findings from qualitative assessments in Myanmar and Lebanon. *Conflict and Health*, *11*(1). https://doi.org/10.1186/s13031-017-0121-1

Stanford Children's Health. (n.d.). *Puberty: Teen Girl.* Stanford Children's Health. Retrieved January 31, 2022, from https://www.stanfordchildrens.org/en/topic/default?id=puberty-adolescent-female-90-P01635

Thomson, J., Amery, F., Channon, M., & Puri, M. (2019). What's missing in MHM? Moving beyond hygiene in menstrual hygiene management. *Sexual and Reproductive Health Matters*, 27(1), 12-15. https://doi.org/10.1080/26410397.2019.1684231

Tull, K. (2019). Period poverty impact on the economic empowerment of women. K4D Helpdesk Report 536. Brighton, UK: Institute of Development Studies.

UNICEF. (2018, May 25). FAST FACTS: Nine Things You Didn't Know About Menstruation. UNICEF. https://www.unicef.org/press-releases/fast-facts-nine-things-you-didnt-know-about-menstruation#\_ednref6

UNICEF (2019). *Guidance on Menstrual Health and Hygiene*. https://www.unicef.org/media/91341/file/UNICEF-Guidance-menstrual-health-hygiene-2019.pdf