
THESIS / DISSERTATION SUBMISSION

Title: Social and Environmental Aspects of Menstruation

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Declaration

I, Jani-Mari Ferreira, declare that the Master's Degree research dissertation or interrelated, publishable manuscripts/published articles, or coursework Master's Degree mini-dissertation that I herewith submit for the Master's Degree qualification Master of Arts with specialisation in Sociology at the University of the Free State is my independent work, and that I have not previously submitted it for a qualification at another institution of higher education.



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Sociology

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Abstract

Menstruation is a multifaceted phenomenon that carries significant social and environmental implications, especially in the Global South, where period poverty prevails. An estimated seven million girls in South Africa cannot afford adequate menstrual products due to resource limitations, which forces them to use rags or newspapers to manage menstruation (O'Reilly 2023). This study focused on exploring the experiences and perceptions of menstruation among menstruating university students at the University of the Free State. Together with this, the social aspects (embodied experiences and emancipatory discourses and practices) and environmental aspects (awareness that menstruators have regarding menstrual product choices and options) of this complex phenomenon were explored.

The study adopted a qualitative research design, which aids in exploring a phenomenon from a subjective perspective through phenomenological inquiry. A total sample of 15 participants was utilised, which comprised registered students at the University of the Free State who identify as female and menstruate. A semi-structured interview schedule, utilised in focus groups and one-on-one interviews, was employed to obtain qualitative data. Thematic analysis was conducted using ATLAS.ti (version 25) to analyse and categorise the data into themes and subthemes.

The findings revealed that the majority of the participants held a problematic view of menstruation, which was influenced by various factors, including extreme menstruation-related symptoms, stigma that evokes feelings of shame and the need for concealment, and pessimistic cultural and religious perspectives. Additionally, the study found that most participants were aware of and concerned about the environmental harm associated with menstrual products, particularly disposable menstrual products (DMPs). However, only a minority of the participants indicated that they took, or would consider taking, measures to actively reduce menstrual product waste. Despite their concerns about the environmental impact of DMPs, the majority of the participants were not open to switching to reusable menstrual products (RMPs), instead opting for single-use sanitary pads and/or tampons due to considerations of comfort and hygiene.

Moreover, the reviewed literature indicates the need for adequate menstrual health management (MHM) practices, as many individuals lacked education on how to manage menstruation appropriately. Additionally, many individuals, especially in the Global South,

do not have adequate access to clean water, soap, and menstrual products, which increases the risk of developing health issues such as infections. The participants also emphasised the importance of MHM concerning menstruation-related conditions, such as endometriosis and polycystic ovary syndrome, as awareness of these conditions, including the symptoms, diagnosis, and treatment, is limited in the Global South. It is therefore essential to study the social and environmental aspects of menstruation and the experiences and perceptions related to the topic.

Keywords: menstruation, Global South, period poverty, menstrual stigma, environmental concern, disposable menstrual products, reusable menstrual products, menstrual product waste, menstrual health management.

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List of Abbreviations

\$	United States dollar
ACMHM	African Coalition for Menstrual Health Management
AI	Artificial intelligence
AUB	Abnormal uterine bleeding
DMP	Disposable menstrual product
DSP	Disposable sanitary pad
IE	Intersectional environmentalism
mg/kg	Milligram(s) per kilogram
MHM	Menstrual health management
ml	Millilitre(s)
PCOS	Polycystic ovary syndrome
PFAS	Per- and polyfluoroalkyl substances
PMDD	Premenstrual dysphoric disorder
PMS	Premenstrual syndrome
RMP	Reusable menstrual product
SDG	Sustainable Development Goal
UFS	University of the Free State
UN	United Nations
UNICEF	United Nations Children's Fund
USA	United States of America
VOC	Volatile organic compound
WASH	Water, sanitation, and hygiene
WHO	World Health Organization

Chapter 1: Introduction

1.1 General Introduction

Menstruation is a complex phenomenon with far-reaching social and environmental implications. Examples of the social and environmental complexities related to menstruation include the concept of “period poverty” and menstrual stigma. Michel et al. (2022) define period poverty as the lack of access to menstrual products, waste management, hygiene facilities, and education. This issue affects many menstruators globally and causes emotional, mental, and physical challenges, as well as menstrual stigma, which refers to the negative perceptions of menstruation and those who menstruate (Olson et al. 2022).

Menstrual stigma is fundamental to understanding why and how menstruation matters, as it can have significant impacts on menstruators’ lives by potentially affecting their social, economic, and personal well-being, despite being a natural biological phenomenon experienced by those born with female reproductive organs. According to Michel et al. (2022), approximately 800 million individuals worldwide menstruate daily. Research shows that 30% of girls living in rural areas of South Africa miss school during their menstruation due to inadequate access to sanitary products, which leads to feelings of shame and humiliation (O’Reilly 2023). O’Reilly (2023) states that in South Africa, roughly seven million girls are unable to afford adequate sanitary products due to resource constraints. These girls must often rely on uncomfortable and unsafe substitutes, such as rags or newspapers, during menstruation. In many informal settlements, menstruators share an outside toilet with others apart from their household members, which highlights how financial hardship and social circumstances shape menstruation experiences.

Additionally, there is a growing concern and awareness regarding environmental sustainability in relation to disposable menstrual products (DMPs), as most of these products have a significant environmental impact. Pednekar et al. (2022) state that menstrual health management (MHM) practices play a role in promoting environmental sustainability. They explain that menstruators who live in poverty often lack adequate infrastructure to manage their menstruation, such as water and sanitation facilities, which makes the use of reusable menstrual products (RMPs) difficult. As a result, DMPs frequently end up in landfills, sewage systems, and rivers. While poverty can hinder one’s ability to switch to RMPs, this does not mean that only individuals who experience period poverty are responsible for DMPs ending

up in landfills and other locations. In South Africa, 52.4 million kilograms of sanitary product waste is produced annually, destined for landfills and sewage systems, with some components of these products taking an estimated 800 years to biodegrade (Moodley 2023). This waste is generated not only by individuals experiencing period poverty but by all menstruators who use DMPs as a means of managing menstruation.

Another factor that impacts the environment is the stigma associated with menstruation. In conceptualising stigma, Goffman (1963 cited in Rarity 2024) identifies three types of stigma: physical deformities, blemishes of character, and tribal stigma, all of which can relate to the menstrual experience. Firstly, because bodily fluids, such as menstrual blood, are often considered unclean and unhygienic, menstruators may be seen as possessing bodily abominations (Rarity 2024). Taylor (2023) explains that, historically, blood has been a marker of social ill; menstrual blood therefore signals that menstruating individuals are dirty, immoral, and impure. Secondly, menstrual leakage is often associated with shame and humiliation, as it is a visible sign of menstruation and therefore a blemish on one's character (Rarity 2024). Lastly, given that only biological females menstruate, these individuals are distinguished from those who do not menstruate (biological males), with menstrual blood functioning as a tribal identity marker of "femaleness" (Rarity 2024).

Despite menstrual activists reframing menstruation as an economic, political, and social issue, visibility (leakage and odour) still triggers feelings of shame and concealment. Menstruators may feel ashamed to dispose of their sanitary products publicly, which can lead to burning the products, a phenomenon that heavily impacts rural areas (Roxburgh et al. 2020). Furthermore, reusing DMPs is common among menstruators everywhere, and hanging these products in public spaces to dry may be perceived as shameful. Additionally, the stigma of dirtiness may be associated with individuals who reuse DMPs, even though this may be their only option for managing menstruation due to socio-economic circumstances. Regarding period poverty, menstruators who do not have adequate MHM in place may harm their overall and reproductive health. There is growing emphasis on increasing awareness to change menstruation practices, one of which is the development of different types of RMPs and other items designed to address health and environmental concerns.

1.2 Research Problem/Problem Statement

Even though menstruation is an inevitable biological occurrence, it is often framed in negative terms, shrouded in secrecy, dissimulation, and shame. Goffman (1963 cited in Owen

2022) identifies stigma as a stain that marks an individual as spoiled; menstrual blood can literally stain when a leakage occurs, which reinforces the idea of concealing the menstrual body in silence. Shame, on the other hand, is internalised by menstruators when they perceive themselves as “inadequate” (Garofalo et al. 2025), which shapes feelings of embarrassment, fear, and the need to hide their menstrual experiences. Menstruation is therefore positioned as a private matter to be controlled, rather than a naturally occurring biological phenomenon. This engages with ideas of inevitability and ineluctability. Menstruation is inevitable because it is a natural biological occurrence for those born with female reproductive organs, which emphasises biological certainty. Conversely, menstruation is ineluctable as it may be an inescapable embodied experience. This may be due to various cultural, social, medical, environmental, and socio-economic influences, including religion, poverty, stigma, and health conditions. To add to this phenomenon, an estimated seven million menstruators in South Africa do not have regular access to hygienic and satisfactory sanitary products due to poverty (O'Reilly 2023). Among many menstruators, there is often a lack of proper and sustainable MHM practices, as they are not fully aware of the spectrum of health and environmental implications surrounding widespread and accepted practices to manage menstruation. One such example is the lack of awareness of the health and environmental concerns of using mainstream DMPs. These complex socio-environmental issues are therefore important to understand through the examination of the experiences and perceptions of menstruators.

1.3 Aim of the Study

The overarching aim of this study was to analyse the complex phenomenon of menstruation from social and environmental experiences and perspectives.

1.4 Research Objectives

Flowing from the above aim, the following objectives were set:

1. To explore the experiences, perceptions, and sense of agency of university students relating to menstruation, mostly through their socialisation around issues of menstruation.
2. Given the heightened awareness of climate change and human-induced effects on the environment, to describe if students are aware of and concerned about the

environmental outcomes associated with the use and disposal of single-use sanitary products.

3. To determine the extent to which menstruating university students are aware of the potential health implications associated with conventional disposable menstrual products.

1.5 Outline of the Study

The study is organised into five chapters, each serving a specific purpose in exploring the social and environmental aspects of menstruation. The outline of the thesis is as follows:

Chapter 1: Introduction

This chapter starts with a brief overview of menstruation from a social and environmental perspective, followed by a statement of the research aim and objectives. An overview of the outline of the study is also provided.

Chapter 2: Literature Review and Theoretical Framework

This chapter presents a comprehensive overview of existing literature on menstruation, including a discussion of the medicalised, cultural and religious, environmental, and social aspects thereof. This chapter provides an examination of the experiences with and perceptions of menstruation among university students. Thereafter, an in-depth overview of an ecofeminist lens on menstruation is offered.

Chapter 3: Research Methodology

This chapter provides a description of the qualitative research design employed in the study. This includes an explanation of the sample population, sampling procedure, and sample size. The researcher recruited 15 registered students at the University of the Free State who identify as “female” by employing purposive and snowball sampling. Thereafter, a detailed overview of the data-measuring instruments is presented, followed by a discussion of the data-analysis methods employed. An outline of the ethical considerations taken into account is then offered. Lastly, this chapter presents an overview of the value of the research.

Chapter 4: Results and Discussion

This chapter presents the research findings, including an analysis and interpretation of the results in relation to the existing literature. A discussion of the significance of the findings for menstruating university students is also provided.

Chapter 5: Conclusion and Recommendations

This chapter provides a conclusion that synthesises the study's key findings. Thereafter, the identification of the limitations of the study is presented, followed by recommendations for future research studies. Lastly, the chapter provides an overview of the study's significance.

By following this outline, the study aims to provide valuable insights into the social and environmental aspects of menstruation in the South African context and to offer potential avenues for further research and interventions to improve menstruation-related challenges.

1.6 Conclusion

This chapter provided an overview of the research study. It began by discussing the widespread issue of menstruation and its impact on the daily lives of menstruating individuals, particularly in the context of students in the Global South. The research problem and aim of the study were introduced, and the chapter highlighted the importance of investigating the social and environmental aspects of menstruation as a topic that has been largely understudied in South Africa.

The research objectives were clearly outlined, focusing on the experiences and perceptions of menstruation among university students, as well as their awareness of and concern with the environmental harm that different menstrual products may cause.

Chapter 2: Literature Review and Theoretical Framework

2.1 Introduction

This chapter provides a global and national context for the complex phenomenon of menstruation by outlining its medicalised, cultural and religious, environmental, and social aspects. It is important to examine all the contributing factors surrounding menstruation, as it is multifaceted in nature. Literature on perceptions of menstruation is also discussed, specifically focusing on these perceptions among university students. Furthermore, research conducted on menstruation is often too narrowly focused on issues such as the medicalisation of menstruation and period poverty and frequently reflects experiences and perceptions from the Global North. There is thus a need to further examine the experiences and perceptions of menstruators, specifically in the Global South.

2.2 Global Overview of Menstruation

Menstruation is a natural biological phenomenon experienced by those born with female reproductive organs. Michel et al. (2022) state that worldwide, 800 million individuals menstruate daily; however, menstrual health and hygiene needs are globally overlooked. Infrastructure and emotional readiness for menstruation are important to address, given the global lack of education and resources for managing menstruation. The necessary infrastructure to establish a safe and sanitary environment for menstruators includes bathroom facilities, separated toilets, bins for disposing of sanitary products, soap, and water, often referred to as WASH (water, sanitation, and hygiene) (Asumah et al. 2022). Notwithstanding these prerequisites, less than 50% of schools in low-income countries have sufficient WASH facilities (Asumah et al. 2022). Kaur et al. (2018) suggest that schools should raise funding to provide menstruators with private and secure infrastructure to manage menstruation with ease and safety.

Although emotional readiness and preparedness for menstruation are crucial, they are often overlooked. Kaur et al. (2018) explain that, especially in developing countries, menstrual education is frequently avoided, which hinders the education and opportunities for menstruators. This situation arises from menstruation being a culturally sensitive and often silent issue in menstruators' lives, which is further impacted by teachers' attitudes, school environments, and, as discussed above, infrastructure. Kaur et al. (2018) highlight that, due to the overwhelmingly negative connotations associated with menstruation, teachers may feel

too embarrassed or shy to openly discuss menstruation-related topics in class. Moreover, because of the neglect of sex education in schools, students may receive misinformation and misconceptions about menstruation from books, friends, and especially the Internet (Kaur et al. 2018; Rotinsulu and Ait 2025). This could lead to taunting and teasing, which make it difficult for menstruators to thrive in such an environment. Consequently, girls may choose to be absent from school when menstruating to avoid these challenges. Kaur et al. (2018) suggest educating teachers on menstruation and MHM practices to enable them to pass this knowledge on to students.

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) (2024) published a report on menstrual health between, which found that only 31% of schools worldwide have sanitary bins in girls' bathrooms, dropping to 17% in least developed countries and 11% in sub-Saharan Africa. The United Nations (UN 2023) also highlights that millions of menstruators lack access to safe sanitation, both at school and at home. Consequently, the UN (2023) is committed to achieving the Sustainable Development Goal (SDG) Target 6.2 (Human Right to Water and Sanitation) under the 2030 Agenda, which aims to ensure the availability and sustainable management of water and sanitation for all (WASH). Additionally, the report found that millions of menstruators globally receive no menstrual education prior to menarche, which leaves them feeling confused, scared, and shocked at the onset of menstruation (WHO and UNICEF 2024). This highlights the lack of education and resources pertaining to menstruation from a global perspective and underscores the need for further study of these issues. Firstly, it is important to discuss the medicalised aspects of menstruation to better understand this complex biological phenomenon and the possible health issues associated with it.

2.3 Medicalised Aspects of Menstruation

Menstruation is a multifaceted and complex phenomenon that consists of medical, cultural and religious, environmental, and social discourses. It is often depicted in individualised terms, leaving the menstruator to grapple with menstruation as a hidden and shameful experience (Olson et al. 2022). To fully understand menstruation, one must examine all its aspects, starting with the medical dimensions. From a health perspective, menstruation is a vital indicator of reproductive health that prepares the body for pregnancy. It is also important to understand other menstrual-related issues that affect reproductive health, as this will bring us closer to the goal of personalised care.

According to Critchley et al. (2020, p.625), what is considered to be biologically “normal” menstruation refers to “cyclic bleeding that occurs from the uterine corpus between menarche and menopause”. Mikes et al. (2025) state that so-called “normal” menstruation occurs approximately every 24 to 38 days and lasts for around two to seven days, with blood loss averaging 5 to 80 ml. The use of the word “normal” indicates that, while not all menstruators share the same experiences, this is considered the typical cycle length. Critchley et al. (2020) and Mikes et al. (2025) note that up to 30% of menstruating individuals experience variations in the pattern or volume of menstrual blood flow, which is referred to as abnormal uterine bleeding (AUB). Mikes et al. (2025) classify AUB into two categories: acute and chronic menstrual bleeding, and agree with Critchley et al. (2020) that 3% to 30% of menstruators have experienced or are experiencing this type of menstrual bleeding. Furthermore, for many menstruating individuals, menstruation is accompanied by other symptoms, including acne, anxiety, bloating, cravings, depression, dysmenorrhea, excessive hair growth, fatigue, headaches, nausea, pain, and tender breasts (Whelan 2022). These symptoms may vary between menstruators and may worsen depending on the biological cycle. Menstruators who experience one or more of these symptoms severely may require medical attention to diagnose reproductive health issues associated with AUB (Whelan 2022). These health issues could include endometriosis, premenstrual dysphoric disorder (PMDD), premenstrual syndrome (PMS), and polycystic ovary syndrome (PCOS), which are outlined below.

2.3.1 Endometriosis

The WHO (2023, p.1) defines endometriosis as “a disease in which tissue similar to the lining of the uterus grows outside the uterus”. This condition leads to inflammation and the formation of scar tissue in the pelvic region. This causes severe pain in the pelvis, often accompanied by fertility issues. According to the WHO (2023), it is estimated that 10% (190 million) of menstruating individuals of reproductive age are affected by endometriosis. Although the causes of endometriosis are unknown and there is no cure, its symptoms can be managed through medication or surgery. However, in many under-resourced contexts, especially within the Global South, early diagnosis and effective treatment are not always possible, and access to treatment is limited.

2.3.2 Premenstrual Dysphoric Disorder (PMDD) and Premenstrual Syndrome (PMS)

According to Clay (2023), both PMDD and PMS cause menstruators to experience emotional and physical symptoms approximately one week before the onset of menstrual bleeding. These symptoms include bloating, increased hunger, mood swings, and tender breasts. However, PMDD is an aggravated form of PMS, as it severely disrupts the daily lives of menstruating individuals through intense emotional symptoms. Furthermore, PMDD can damage personal and work relationships due to severe anger, anxiety, depression, and mood swings. Clay (2023) reports that PMDD is classified as a mental disorder in the Diagnostic and Statistical Manual of Mental Disorders and affects roughly 6% of menstruators.

2.3.3 Polycystic Ovary Syndrome (PCOS)

The WHO (2025) describes PCOS as “a common hormonal condition that affects women of reproductive age”. PCOS may cause hormonal imbalances, irregular menstrual bleeding, a lack of ovulation, excess androgen levels, and cysts in the ovaries, which can lead to difficulties in falling pregnant. Like endometriosis, the causes of PCOS are unknown, and it is incurable. However, symptoms can be improved through fertility treatments, lifestyle changes, and medication (WHO 2025). The WHO (2025) estimates that between 8% and 13% of reproductive-aged women are affected by PCOS; however, up to 70% of affected women globally remain undiagnosed.

Menstruation can therefore be complicated when it is accompanied by various menstruation-related health issues, the severity of which may vary among menstruating individuals. Moreover, the aforementioned health conditions may potentially pose a threat to the reproductive health of a menstruator, together with many DMPs. Menstrual products also impact the environment in various ways, as outlined below.

2.4 Environmental Aspects of Menstruation

Numerous environmental impacts are associated with the management of menstruation, including the manufacturing, use, and disposal of sanitary products, each affecting the environment in different ways. Menstrual products are categorised into two distinct types: disposable and reusable. Additionally, there are environmental health implications related to the use of various types of products, which are outlined below.

2.4.1 Environmental Implications and Disposal Challenges

Not only is MHM an essential component of individual and population-level health, but its proper management is also important for the environment. Winter et al. (2022) explain how MHM practices, including the use and disposal of menstrual products and materials, may impact the environment. For example, a lack of adequate disposal options for menstrual products and materials may lead to disposal practices that contribute to the pollution of land and waterways due to the materials used in many disposable products. Menstruating individuals without access to clean, safe, and sanitary toilet facilities may need to use alternative sites for managing menstruation, including urination and defecation (Winter et al. 2022). According to Winter et al. (2022), this includes the use of open or public spaces, which intensifies the risk of community exposure to human waste and could therefore contribute to the contamination of local natural environments. Winter et al. (2022) also describe other challenges regarding menstruation management, including a lack of water for flushing and/or cleansing during menstruation, unaffordability due to pay-per-use toilet facilities in some contexts, and insufficient privacy when changing menstrual products. Some menstruators have no choice but to manage menstruation at home using basins or buckets in the absence of adequate sanitation facilities. For example, a menstruator in such a situation explained: “I just come for that bucket... you just put it here in the house. When it turns to night, you pour it outside [into nearby open drainage ditches]” (Winter et al. 2022, p.4). Other menstruators indicated that they used plastic bags or newspaper for managing menstruation: “It is a must, I put a paper bag there [pointing to spot in home] ... I cannot go to help myself [at the toilet]. It is a must, I just do this” (Winter et al. 2022, p.4). Furthermore, public toilet facilities do not necessarily provide disposal bins for sanitary products. This may have significant implications for both public health and the environment, as buckets are emptied, and plastic bags, newspapers, and sanitary products are discarded in nearby open spaces, rivers, rubbish piles, or drainage systems, which can lead to blockages.

Khorsand et al. (2023) state that MHM and climate change are interrelated, as climate change may exacerbate issues related to inaccessible, inadequate, and unsanitary MHM. During and after severe weather events, such as floods and storms, which are predicted to increase in intensity and frequency due to climate change, access to menstrual products, disposal options, privacy, clean water, sanitation, and toilet facilities may be disrupted (Khorsand et al. 2023). Certain regions, such as South Africa, will become significantly drier and hotter, potentially leading to more droughts and water scarcity, which could further impact access to sanitation

and hygiene. Furthermore, Khorsand et al. (2023) explain that ongoing MHM initiatives may be suspended during such disaster periods to prioritise access to food and shelter.

2.4.2 Disposable Menstrual Products (DMPs)

Sustainability is a major concern regarding menstruation, as the use of DMPs contributes to environmental pollution due to their plastic content and other harmful compounds. Bildhauer and Owen (2023) suggest that waste from DMPs is expected to increase rapidly in the coming years, as more menstruators opt for DMPs over makeshift products that are often unsafe for use. Davis (n.d. cited in Rimmer 2018), a member of the British Medical Association, voiced her concern about the effects of DMPs on the environment by saying:

Pads take between 500 and 800 years to biodegrade, some of them contain the same amount of plastic as three carrier bags. Tampons take about six months to degrade. Throughout your lifetime as a menstruating person, you can expect to use about 11 000 disposable products.

Moodley (2023) estimates that, in 2023, menstruating individuals in South Africa produced 52.4 million kilograms of sanitary product waste. Menstruators who experience heavy bleeding spend around R180 a month, or R2 160 a year, on disposable sanitary pads (DSPs). Because DSPs are often non-biodegradable and non-recyclable, improper disposal may lead to DSPs polluting beaches, landfills, sewage systems, and waterways, and they break down into microplastics (Khorsand et al. 2023). Moreover, Khorsand et al. (2023) state that the majority of the environmentally harmful chemicals used in the production of DSPs are allergenic, carcinogenic, or endocrine-disrupting, and contribute to climate change, geopolitical conflict, and non-biodegradable waste.

Not only does the disposal of DMPs impact the environment, but they also contribute to resource scarcity. Input materials, such as cotton, cellulose, and synthetic fibres like polypropylene and polyethylene, as well as energy, are needed to manufacture sanitary products. The use of sanitary products, especially DMPs, has a double environmental impact due to the resource intensity required for their production. Additionally, energy and other resources must be used to dispose of these products. However, menstrual product advertisements rarely acknowledge or highlight the environmental destructiveness of DMPs, thus promoting hyper-consumerism and teaching menstruators that menstrual stigma and taboo can be overcome by using DMPs (Przybylo and Fahs 2020). Before discussing RMPs,

it is important to review the absorbency of DMPs, as this may be significantly different from what the labels suggest.

2.4.3 Menstrual Product Absorbency

When discussing (disposable) menstrual products, it is important to review studies conducted on the absorbency of these products, as product labels may be deceiving. The fluid used to test menstrual product absorbency is not necessarily the same consistency as menstrual blood. For example, a recent study conducted by a team of researchers at Oregon Health & Science University found that many menstrual products, including single-use sanitary pads and tampons, had a much lower or higher liquid capacity than advertised when real blood was used instead of a saline solution (a mixture of water, salt, and bicarbonate), which is more commonly employed in the product development process (Thompson 2023). Thompson (2023) highlights that blood and saline solution are absorbed at different rates due to their contrasting viscosities, which emphasises the gap in how doctors determine heavy bleeding and the need to update the absorbency metric. This may result in single-use “heavy flow” pads or tampons not absorbing as much blood as the menstruator expects, which can potentially lead to blood leaking through the pad or tampon. Moreover, Taylor (2023) explains that menstrual product advertisements do not describe or show what these products are designed to do: capture blood. Instead of showing blood, most advertisements use a blue liquid to demonstrate the absorbency of different menstrual products, which, as previously mentioned, may not accurately depict the real absorbency of these products. The use of blue liquid to represent menstrual blood further symbolises the shame and secrecy associated with menstruation.

Supporting the aforementioned study, the chemistry department at the University of the Free State conducted a similar experiment to determine the absorbency of blood plasma. One of the chemists in the laboratory, Janine Blignaut, explained to the researcher in a face-to-face interview that the superabsorbent polymer she created was tested with distilled water and a saline solution with a pH of 4.4 (J. Blignaut, informal interview, 21 October 2024). However, she stated that it is important to test it with a pH similar to that of blood, which can be replicated in the laboratory using various salts and acids that occur naturally in the body. The chemist then prepared this blood plasma in the laboratory and subsequently tested its absorbency with the superabsorbent polymer. In a follow-up interview the researcher conducted with Blignaut via WhatsApp, she indicated that she had found that the super

absorbent polymer absorbs more than 800 times its own weight in distilled water (J. Blignaut, informal interview, 24 October 2025). She further explained that with a 0.9% saline solution, it absorbed around 40 times its own weight and in the artificial plasma solution around 120 times its own weight. After four hours (which is the maximum duration advised to wear a sanitary pad), it reached half of its maximum absorbent capacity in the plasma solution.

2.4.4 Reusable Menstrual Products (RMPs)

Because DMPs are environmentally harmful, menstrual health and rights advocates are attempting to promote the use of RMPs to not only encourage environmental sustainability but also to alleviate menstrual stigma (Bildhauer and Owen 2023). These products include reusable pads, period underwear, and menstrual cups¹. However, the issue with these products is that menstruating individuals may feel uncomfortable or self-conscious when having to remove or replace them in public spaces. Furthermore, some RMPs, such as menstrual cups, require more privacy when changing, involve more invasive techniques to use, and necessitate access to safe water, hygienic conditions, and proper sanitation (Khorsand et al. 2023). Although the long-term use of RMPs may benefit menstrual health and equity, as well as the environment, these options may not be feasible for all menstruators, particularly those living in the Global South.

The majority of RMPs show physical evidence of blood on one's fingers when being removed, whereas with a DSP or tampon, they can simply be removed and thrown away without as much messiness. Despite a survey conducted by Zero Waste Scotland (2019 cited in Owen 2022) on consumer attitudes towards RMPs finding that "having to see the menstrual blood" was a main barrier to using RMPs, Owen (2022) states that some of the participants in her study conducted on the menstrual cup did not mention this fear. Instead, they found the increased contact with blood to be a "beautiful" and useful experience. One participant explained: "When I like pour it [menstrual blood] into the toilet and see the colours, it can be like actually quite an authentic, beautiful experience." A similar study was conducted by Kubovski and Cohen Shabot (2024) to explore the perceptions that menstruating individuals (aged 18 to 50) in Israel have of RMPs. The findings reported three major themes, all of which were positive, namely improvement in menstrual experience, acceptance of the menstrual body, and changes in feelings towards and because of the products (Kubovski and Cohen Shabot 2024). The participants reported that positive feelings,

¹ Refers to menstrual discs, which are also RMPs, but little is known about them in South Africa.

including cleanliness, fearlessness, safety, and shamelessness, emerged from using RMPs. One participant stated: “Before the cup, I felt unpleasant, like it smelled all the time, and using the cup made me feel cleaner. Menstruating was a burden, and now it doesn’t bother me anymore” (Kubovski and Cohen Shabot 2024, p.912). The study found that these positive perceptions are related to comfort with the body and body image because of the direct contact with menstrual blood. One participant explained: “There’s something raw about it. I see it and feel it: Wow, what a woman I am, what a beauty, the wonder of creation” (Kubovski and Cohen Shabot 2024, p.911). This may lead to positive feelings towards menstruation and the biologically female body, as well as a better understanding of the menstrual cycle, fertility, and sexual life. Moreover, Owen (2022) explains that by using RMPs, menstruators become detached from the disposability market economy and, to some extent, from its stigmatising narrative.

However, reusable pads or period underwear must be washed and dried. Electricity access and a microwave or boiled water, which are not always readily available in rural areas, are also needed to rinse a menstrual cup to ensure sanitation. One is less likely to find these products in low-income settings as they are more expensive and luxurious because they are a once-off purchase, whereas pads or tampons are purchased monthly, depending on one’s cycle. The initial cost of purchasing a reusable product is an important barrier that hinders the widespread adoption of reusable sanitary ware as menstruators, particularly in resource-constrained settings, cannot necessarily afford to spend a large amount of money at once (Moodley 2023).

Given that RMPs are newer to the market, menstruating individuals may be less educated about their existence, as well as how to use them properly. This may result in menstruators’ ignorance or avoidance of these products and them rather opting for DMPs, such as pads and tampons, as these are more commonly known (Johnson et al. 2025). However, RMPs are shown to be better for the environment as these purport to not contain plastic or harmful chemicals, and Khorsand et al. (2023) state that they may even help to reduce skin irritation and diseases, such as candidiasis.

When comparing the impact of DMPs and RMPs on the environment, Ramsay et al. (2023) report the following statistics over the period of one year: “The environmental impact of a menstrual cup is equal to less than 1.5% of the environmental impact of a disposable product, at only 10% of the cost of disposables.” Furthermore, the use of menstrual cups comprises

only 7% of the cost and 6% of the plastic waste of tampons (Ramsay et al. 2023). In the United States of America (USA), Ramsay et al. (2023) suggest that using RMPs is estimated to save \$205 and the use of 1 300 disposable tampons over the period of one year. Despite these benefits, DMPs remain more popular as there is limited marketing and education of RMPs (Kubovski and Cohen Shabot 2024). Furthermore, those living in the Global South do not necessarily have access to or the financial ability to purchase these once-off products, opting to use RMPs instead or anything else that is available, such as cloths and rags.

It is evident that different menstrual products have different impacts, both negative and positive, on the environment. Despite socio-economic circumstances impacting which products menstruators use, cultural and religious aspects may determine how menstruating individuals perceive menstruation, as discussed below.

2.5 Cultural and Religious Aspects of Menstruation

Cohen (2020) states that the behaviours of menstruators, both positive and negative, may be influenced by culturally and religiously motivated practices. Maharaj and Winkler (2020) note that the practices and traditions of cultures and religions can also affect the interactions, activities, and experiences of menstruating individuals, as discussed below.

2.5.1 Menstruation and Purity

In various cultures, such as Orthodox Judaism, Brahmanical Hinduism, and Islam, menstruation is associated with impurity. In Orthodox Judaism, this belief is derived from Chapter 15 of Leviticus, a book in the Hebrew Bible (*Tanakh*), which “renders a person unfit to approach the altar” (Cohen 2020, p.117) and engage in temple-related rituals when menstruating. Consequently, in this culture, a menstruator and their spouse refrain from any intimate activities from the onset of menstruation until seven days after it has ended, at which point the menstruator immerses in a *miqvah* (ritual bath) for purification (Maharaj and Winkler 2020). According to Cohen (2020, p.119), although it is a rare occurrence, children conceived during menstruation or before *miqvah* are regarded as “severely defiled”.

In Brahmanical Hinduism, menstruators are regarded as “low-caste” individuals during their menstrual period and are to be avoided. This perspective is rooted in the *Manu Smriti*, the most definitive and authoritative work of Dharma literature, which outlines menstruation as one of the 12 impurities of the body (Cohen 2020). Consequently, anyone encountering menstruators is also categorised as impure. Similar to Orthodox Judaism, Brahmin men are

expected to avoid engaging in any intimate activities with menstruators. Children conceived during menstruation are considered “untouchable or cursed” (Cohen 2020, p.121).

Conversely, in non-Brahmanical Hinduism, menstruation, along with menarche and childbirth, is viewed as favourable and *ananku* (a sacred power) (Cohen 2020). Additionally, there are menarche rituals that honour menstruators as goddesses, symbolising protection, purity, and strength, as the joy of menarche is celebrated (Cohen 2020). Thus, within this culture, menstruation confers status and power upon the menstruating individual, as they are sexually mature and capable of reproduction.

Similar to non-Brahmanical Hinduism, the Islamic culture views menstruation as a celebration. Both in the Qur’an, where the womb is honoured, and in the Walking Qur’an by Prophet Muhammad, where he lovingly and regularly interacted with menstruators, is menstruation viewed in a positive light. Blake (2023) supports this by quoting the conversation between Allah and the womb:

Allah created the creations, and when He finished from His creations, the womb said, ‘(O Allah) at this place I seek refuge with You from all those who sever me.’ Allah said, ‘Yes, won’t you be pleased that I will keep good relations with the one who will keep good relations with you, and I will sever the relation with the one who will sever the relations with you.’ It (i.e. the womb) said, ‘Yes, O my Lord.’ Allah said, ‘Then that is for you’ (Sahih al-Bukhari 5987).

From a Christian perspective, similar to the Hebrew Bible, Leviticus is a book in the Old Testament that states that sexual contact occurring during menstruation is considered unclean (Mazokopakis 2020). However, although menstruation is not directly addressed, Pastor Piper (2021) explains that these laws no longer apply in the New Testament because Christians are freed from the old covenant:

My brothers, you also have died to the law through the body of Christ ... Now we are released from the law, having died to that which held us captive, so that we serve in the new way of the Spirit and not in the old way of the written code (Romans 7:4-6).

Therefore, under the new covenant, menstruation is viewed as sacred and a source of power ordained by God, as when the blood runs out of the body, the blood itself is “the god spilling over” (Bauman 2022). The womb is a wellspring; Bauman (2022) explains that the woman’s womb is seen as a body of water that continues to feed the earth with life-giving water, as

God the Creator grants her the ability to bring life into the world. Moreover, Bauman (2022) states that Christians view menstruation as a gift from God to create new life and produce offspring, continuing to preach His word to the world.

2.6 Social Aspects of Menstruation

When examining menstruation from a sociological perspective, several social issues are predominantly associated with it: stigma, gender and power, and poverty. Menstruation quintessentially distinguishes women from men from a young age. Because of this distinction, numerous gender-based issues arise in connection with menstruation. Moreover, discomfort and disadvantage are related to menstruation, particularly in contexts of poverty and deprivation. Furthermore, although menstruation is a biological phenomenon that indicates reproductive maturity, it is often stigmatised. Despite extensive research conducted on menstruation, damaging misconceptions and discrimination persist, which are addressed in the following section. These issues can lead to menstruating individuals missing out on valuable childhood and adulthood experiences and activities, and even skipping school or work while menstruating. This illustrates how negative perceptions surrounding menstruation affect the daily lives of menstruators.

2.6.1 Menstrual Stigma

Because menstrual stigma is an overarching issue associated with menstruation, it is important to consider it from a broader perspective. Goffman (2022, p.3) defines stigma as an “attribute that is deeply discrediting” – a term originating from Greek – which refers to physical signs designed to expose something negative and unusual about an individual’s moral status. Goffman (2022, p.1) states that individuals who are stigmatised are characterised as being “ritually polluted, to be avoided, especially in public spaces”. This is where menstrual stigma originates, as, according to Van Lonkhuijzen et al. (2023, p.365), menstrual stigma is conceptualised as “the negative perception of menstruation and those who menstruate”, considering it a hidden occurrence because discovery would lead to shame and stigma. This culture of concealment is further encouraged by companies that sell menstrual products, which design items aimed at absorbing bodily fluids and odours, being invisible through one’s clothes, and being small enough to be discreetly carried and disposed of in a sanitary dustbin (Wiggleson-Little 2024). Menstruation is accompanied by various myths, taboos, and stigmatising, negative, and shameful attitudes. Euphemisms such as “that

time of the month”, “Aunt Flo”, and “on the rag” are often used by both men and women to refer to menstruation, which indicates the stigma associated with it (Van Lonkhuizen et al. 2023).

The stigma associated with menstruation is often communicated from a young age through various socio-cultural and socio-economic channels. Olson et al. (2022) state that menstruating individuals are characterised as being “irrational”, “too emotional”, and “hysterical”, which makes them appear less capable of participating in public life and economic opportunities while menstruating. This was evident in a psychological study conducted by Olson et al. (2022), where women who indicated their menstrual status by dropping a tampon in front of others were rated as less competent and less likeable than someone who dropped an object perceived as neutral, such as a hairpin. Vora (2020, p.35) interviewed menstruating individuals, most of whom described menstruation as an “emotional and painful period, rife with negative sensations, such as irritability, stress, vulnerability, and symptoms of low mood, as well as anxiety and depression”. One participant explained how the experience of stigma constructed her body as “malodorous and deviant” (Vora 2020, p.35), which created internalised feelings of discomfort, embarrassment, guilt, and shame.

Olson et al. (2022) state that menstrual stigma may significantly affect the daily lives – emotionally, mentally, physically, and socially – of menstruating individuals, as they are restricted from participating in certain activities. One of the most profound impacts of menstrual stigma is that many schoolgirls skip school during their menstruation to avoid the lack of access to products to contain the blood. According to UNICEF (n.d. as cited in Rueckert 2018), it is estimated that one in 10 girls in Africa regularly skips school in a given year due to menstruation. Furthermore, around one in five girls in India drops out of school after the onset of menstruation because of the menstrual stigma they experience (Rueckert 2018). However, menstrual stigma is not the sole reason for schoolgirls missing or dropping out of school. The lack of access to clean water, adequate sanitation, toilet facilities, and sanitary products, as well as education on MHM, may also influence menstruators to skip or drop out of school, especially in the Global South (Rueckert 2018).

2.6.2 Gender and Power

“Women are not men, cannot be men, and as so cannot exist in the world as men do” (Vora 2020, p.34). This statement emphasises the elements of sexism and the lack of power associated with menstruation as “the normal body is not a bleeding body” (Vora 2020, p.33).

Issues of gender and power intersect with menstruation and religion, as studies often focus on ritual impurity and the instructions regarding what a menstruator should and should not do (Cohen 2020). An example of this is the ban imposed by the Supreme Court of India, which prevented girls and women of menstruating age (between 10 and 50) from entering the Sabarimala Temple in Kerala, India because menstruation is implied to be an impure phenomenon (Cohen 2020). Due to menstrual activism, this ban was overruled, which allowed menstruating individuals to enter the temple at any time during their cycle.

However, menstruation may also be viewed as a positive phenomenon, with menstruating individuals considered to possess power, as it serves as a “literal and symbolic marker of sex and sexuality, fertility, age, and health” (Hasson 2020, p.763). Furthermore, menstruating individuals may have the agency to decide how to manage their menstruation. One example is menstrual suppression through hormonal birth control. This, however, sparked a controversial debate in the 20th century in the USA among physicians, politicians, and scholars regarding the definition of menstruation. It was questioned whether hormonal birth control regulates menstruation and reproduction, as the first hormonal birth control pill, Enovid, suppressed both ovulation and menstruation between 1957 and 1960 (Hasson 2020). To emphasise the naturalness of the pill and to increase its acceptability, a systematic plan involving a pill-free break was designed, which produced bleeding similar to menstruation. These pills have been available since 2003 in the USA (Hasson 2020). They allow menstruators to control their cycles by enabling them to either suppress or induce monthly menstruation.

Link and Phelan (2001) highlight that it takes power to stigmatise, as those in power are often the stigmatisers who discriminate against a stigmatised “them” (in this study relating to menstruators). Expanding on this social power, Olson et al. (2022) explain how menstrual stigma relates to power relationships in a society characterised by misogyny and sexism. Menstrual stigma carries an invisible power to dictate what is considered acceptable and normal and what is not (Olson et al. 2022). It is so prevalent in daily life and so deeply rooted that it remains largely invisible, which results in its entrenchment in the “social dynamics

which (re)produce unequal power structures that impact the realisation of human rights” (Olson et al. 2022, p.3). Link and Phelan (2001) elaborate on this by stating that if stigmatised groups internalise the negative stereotypes and taboos associated with them, they are less likely to challenge or resist structural forms of discrimination that hinder the opportunities they desire. If menstruators accept that menstruation is dirty and shameful, they will not fight for change and will continue to face limited opportunities (i.e., in education, healthcare, and the workplace). Therefore, according to Olson et al. (2022, p.3), menstrual stigma is seen as “natural, necessary and desirable” by large segments of society, which highlights power differences.

Socio-cultural norms, defined by UNICEF (2021) as the perceived expectations or rules that dictate acceptable and appropriate actions in a community or group, reinforce menstrual stigma through the emphasis on concealment and hygiene. This fosters the belief that menstruation should be hidden, controlled, and managed because it is deemed shameful. Furthermore, Houppert (1999 cited in Wood 2020) coined the phrase “the culture of concealment” to characterise how menstrual stigma and taboos shape the experience of menstruation for menstruating individuals, which compels them into secrecy and shame. The “bloody, leaky, messy” process of menstruation is regarded as “dirty, disgusting, and defiling” (Olson et al. 2022, p.3), despite being a naturally occurring and healthy phenomenon. Olson et al. (2022) use verbs with negative connotations, such as “leak” and “seep”, to describe the discharge of bodily fluids during menstruation, rather than portraying it as hygienic and sanitary. Vora (2020, p.33) employs the terms “nausea, disgust, and horror” to characterise responses to encounters with bodily fluids and describes menstruation as the act of “spill[ing] blood from between her legs”. Moreover, Olson et al. (2022) assert that menstruating individuals are perceived as being “abject and out of control” – the epitome of the “monstrous feminine” (Ussher and Perz 2020), which supports the notion that they are crazy and overemotional.

Iris Marion Young, a political theorist and social feminist, explains that

the normal body, the default body, the body that everybody is assumed to be, is a body not bleeding from the vagina. Thus, to be normal and to be taken as normal, the menstruating woman must not speak about her bleeding and must conceal evidence of it. The message that the menstruating woman is normal makes her deviant, a deviance

that each month puts her on the other side of a fear of disorder, or the subversion of what is right and proper (cited in Olson et al. 2022).

Therefore, because the normal body is considered male and non-menstruating, menstrual products serve to conceal menstruation, emphasising control and power over a body that is seen as a “site of deficiency and disease” (Ussher and Perz 2020, p.215). Furthermore, the fact that menstrual products are advertised to eliminate all odours and ensure that menstruating individuals stay “fresh” perpetuates the notion that menstruation is abnormal, unhygienic, and unsanitary (Olson et al. 2022). Wood (2020, p.319) elaborates on this topic by stating that the advertising of menstrual products manipulates menstruation through “feminine hygiene” care, which continues to promise new and improved ways for menstruators to keep themselves “clean” and their menstruation a secret. Wood (2020) adds that this is achieved through menstrual suppression or by using products that render menstruation invisible.

Because of stigmas like these, menstruators feel obliged to ensure that nobody sees them carrying any form of menstrual product in public spaces. Moreover, menstruating individuals may feel ashamed to change menstrual products in public toilet facilities, as being seen doing so reveals that they are menstruating, which reinforces the perception that they are “abnormal” and unclean. However, this is a complex issue. As discussed in the next section, many trans women, who cannot biologically menstruate, carry menstrual products to emphasise their womanhood. Conversely, many biological females who do menstruate feel ashamed to acknowledge their menstruation. Although there is a stigma that menstruation should be concealed, it is often menstruators themselves who convey this message of secrecy and taboo, rather than it being solely an imposition by men. This emphasises women’s self-surveillance and the internalisation of certain behaviours. Menstruating individuals often complain about the stigmas and taboos surrounding menstruation, yet they tend to be the ones who impose such restrictions. For example, in certain cultures, such as contemporary Gambian society, menstruation symbolises maturity, womanhood, and the ability to conceive (Bakoto Sawo 2020). Bakoto Sawo (2020) explains that some mothers prepare their daughters for marriage as soon as they reach menarche, as they are then considered ready for marriage. This perpetuates the stigma of associating menstruation with childbearing, which can lead to stress and added pressure on young menstruators from their mothers. This demonstrates that some mothers not only educate their daughters about menstruation from a biological perspective but also from a social expectations standpoint.

2.6.3 Transgender and Genderqueer Individuals' Perceptions of Menstruation

It is important to examine transgender individuals' perceptions of menstruation, as this adds to the complexity of the topic from a sociological perspective. The Diagnostic and Statistical Manual of Mental Disorders defines gender dysphoria as a "marked incongruence between their experienced or expressed gender and the one they were assigned at birth" (cited by Garg et al. 2023). This is especially relevant among transgender individuals concerning menstruation, as menstrual cycles are conventionally gendered and imbued with deeply ingrained social meanings about femininity and what it is to be a woman (Lowik 2021).

Lowik (2021) explains how the management of menstruation and gender dysphoria intersect among transgender individuals, affecting both trans men and women. Among female-to-male transgender individuals, there is a lack of bins for disposing of sanitary products in men's bathrooms. Additionally, the tell-tale sound of a pad or tampon wrapper, when heard in a men's bathroom, can expose the individual as transgender. Furthermore, this may result in discrimination and stigma against trans men, as they may not be perceived as biological men due to menstruation.

On the other hand, although they do not menstruate in the biological sense, some male-to-female transgender individuals carry sanitary products to emphasise their identity as women. However, this may also lead to discrimination and stigma against trans women, as they may not be perceived as biological women due to their inability to menstruate.

Lowik (2021) conducted a study to examine the perceptions of menstruation among male-to-female transgender individuals. It was found that trans women undergoing gender-affirming hormone therapy reported experiencing period-like symptoms, including bloating, food cravings, nausea, and mood swings. One of the participants, Sophia, a trans woman in her early 60s, explained that just because she did not bleed did not mean that she did not experience menstruation; she experienced what she referred to as a "bloodless menstruation". She added that, identifying as a woman, she would have loved to experience the bleeding that accompanies menstruation, but "I don't do the bleed, but I do have the other issues, and I can deal with that" (Lowik 2021). Lowik (2021) states that Sophia's desire for menstrual bleeding emphasises the gendered connotations of menstruation, as menstrual bleeding would affirm her identity as a woman.

Like Sophia, many other trans women believe they experience PMS-like symptoms and bloodless menstruation, including research participants in a study conducted by Brabaw

(2020). Being able to discuss these symptoms openly with friends who acknowledge that they can tell when they are “on their period” provides a sense of validation that affirms their identity as women.

Frank and Dellaria (2020) conducted research on trans and genderqueer individuals aged 19 to 29 across the USA. They found that depictions of menstruation impact social interactions for these individuals in four dominant realms of social life: gender/sex identity, public bathroom attendance and navigation, product marketing and messaging, and healthcare (Frank and Dellaria 2020). The first category describes how menstruation can affect gender identity for trans and genderqueer individuals, as both the body and the self are socially constructed. This means that menstruating trans and genderqueer individuals must shape their identity in the context of the persistent socially constructed female body during interactions with others and institutions (Frank and Dellaria 2020). This suggests that trans and genderqueer individuals may struggle to validate their identity because gender identity is contested; while an individual senses their own gender, society dictates what is considered “normal” and “acceptable” and what is not. The second category describes how public bathrooms are sites of contested gender identity in the context of menstruation, as menstrual products are gendered as female products and are rarely made available in men’s bathrooms. There are seldom disposable bins in men’s bathroom stalls, which signals that trans and genderqueer individuals are unwelcome there (Frank and Dellaria 2020). Furthermore, Frank and Dellaria (2020) explain how the audible sound of opening a menstrual product may reveal the status of a trans or genderqueer individual as a menstruator, not adhering to the binary of gender and sex alignment. This may result in trans and genderqueer individuals opening a menstrual product before entering the bathroom or waiting to change a menstrual product until the bathroom is empty, burdening menstruators with heightened anxiety, awareness, stress, and vigilance (Frank and Dellaria 2020). The third category emphasises the feminisation of menstrual products, which mainly consist of pink wrappers covered with flowers and containing words such as “curved to fit your feminine body” (Frank and Dellaria 2020). This serves as a reminder to trans and genderqueer individuals that a biological aspect of their bodies is deeply tied to social expectations and norms of femininity and womanhood (Frank and Dellaria 2020). The fourth category describes how trans and genderqueer individuals may have negative interactions with healthcare professionals. Frank and Dellaria (2020) state that healthcare professionals may misgender individuals or ask about

menstruation, which may be triggering for some. Together, these four categories illustrate the gendered symbolic interactions that trans and genderqueer individuals often have to navigate.

2.6.4 Hegemonic Discourses Framing Menstruation

Vora (2020) states that a considerable amount of literature regarding menstruation has been produced in the Global North, specifically focusing on white, middle-class, cisgender women, while largely excluding women living in poverty in the Global South. According to Vora (2020), discussions around the lived experience of menstruation are divided. They either address privileged middle-class individuals in the Global North or the socio-economically marginalised in the Global South. Moreover, the focus on menstruators in the Global South often centres solely on “period poverty”, to the detriment of other important factors such as patriarchy, gender imbalances, agency, and activism. However, raising awareness of these factors through menstrual activism could lead to menstruation being viewed differently – as a naturally occurring biological phenomenon – with the potential to overcome the stigma associated with it. Menstruation and the “abject and out of control” body (Olson et al. 2022) are predominantly viewed from a traditional Western perspective, which has been shaped by many years of colonialism and imperialism (Røstvik 2022). Røstvik (2022) explains that the social consequences of this viewpoint result in the exclusion of culturally diverse biological females as models for menstrual product marketing and a lack of inclusion of different cultural perspectives. Consequently, the Global North is perceived to be more progressive than the Global South, with numerous countries, including Canada and Scotland, placing greater emphasis on ethical menstrual products (Røstvik 2022). In these contexts, there is an emphasis on questioning the economic, social, and environmental dimensions of the menstrual industry, which highlights the persistent global issue of inequality surrounding menstruation.

A study conducted by Schweizer et al. (2022) examined the approach to menstrual discrimination by menstrual movements in the Global North (the Menstrual Health Hub) and the Global South (the African Coalition for Menstrual Health Management [ACMHM]). According to Schweizer et al. (2022), the focus in the Global North predominantly lies on the biological and hygiene aspects of menstrual discrimination, such as limited access to menstrual products. In contrast, the Global South adopts a more holistic perspective on menstrual discrimination. Schweizer et al. (2022) describe various forms and causes of menstrual discrimination, including cultural and social norms. Moreover, in the Global South,

the consequences of menstrual discrimination for menstruators are addressed, along with its impact on their mental health, opportunities, and participation in society, as well as the importance of menstrual education (Schweizer et al. 2022). Schweizer et al. (2022) therefore highlight an evolution in the discourse on menstruation in the Global South, which contradicts the views expressed by Vora (2020) and Røstvik (2022). Both Vora (2020) and Røstvik (2022) assert that dominant perceptions of menstruation and menstrual issues are exclusive to the Global North, thereby ignoring the voices of menstruators in the Global South. However, Schweizer et al. (2022) explain how comprehensive menstrual movements in the Global South address menstruation and related issues, such as discrimination, while these are approached in a limited way in the Global North. The ACMHM in the Global South recognises the importance of linking proper MHM to reproductive and sexual rights, as well as other human rights (Schweizer et al. 2022).

Although menstruation is predominantly viewed from a Western perspective, due to the Global North being perceived as more progressive and equipped to propagate a certain discourse, the Global South adopts a more holistic view that emphasises how menstruation forms part of menstruators' access to and embodiment of basic human rights. This may stem from a better understanding of the complex issues surrounding menstruation, such as menstrual stigma and period poverty. Despite menstruators feeling the need to conceal visible bleeding and the use of sanitary products, this is not possible for everyone. Those living in poverty, particularly in the Global South, often lack the financial means to purchase sanitary products. This can lead to the use of unhygienic alternatives, such as rags and even leaves, which can pose a serious threat to their reproductive health.

2.6.5 Period Poverty

Period poverty is a major global issue. In South Africa alone, 83% of female learners struggle to access sanitary products (Pikoli 2023), which is alarmingly high. However, many people are either unaware of this or do not understand its seriousness. According to economist Dr Rossouw (n.d. cited in Leech 2023), period poverty is multifaceted and extends beyond a lack of access to sanitary products. She states that it includes a lack of education about menstruation, poor diagnosis and treatment of menstrual disorders, and insufficient access to clean and private WASH facilities (Leech 2023). Furthermore, the same research indicates that pain management is another disruptive factor that extends beyond access to sanitary products, as it affects the daily lives of menstruating individuals (Leech 2023).

In a study conducted by O'Reilly (2023), Tamara Magwashu, who grew up in poverty, had to use rags when menstruating. She stated that period poverty is not just a women's issue but a societal issue that affects society as a whole (O'Reilly 2023). Period poverty is a serious issue because, according to Michel et al. (2022), 16.9 million menstruators in the USA alone live in poverty and do not have the financial means to purchase adequate sanitary products.

Because period poverty is a major global issue, an annual day, Menstrual Hygiene Day, was established on 28 May to raise awareness of menstruation and the various issues associated with it, including period poverty, menstrual stigma, and MHM (Lehaha 2023). Bobel (2020) states that Menstrual Hygiene Day is dedicated to raising awareness of the importance of menstrual health education and resources in the Global South. Lehaha (2023) indicates that Procter & Gamble, the home of Always sanitary products, launched a campaign in South Africa called #AlwaysBloodSisters, which aims to dismantle the barriers to education caused by period poverty.

There is a global call to make sanitary products free of charge so that all menstruating individuals, especially those living in low-income countries, can access clean and effective sanitary products. In a study conducted by Rimmer (2018), a participant, who was a medical student, proposed that patients in hospitals should have free access to sanitary products:

We do not ask patients to bring in toilet paper or food [to hospital], so why are we asking them to bring in their own sanitary products? ... By providing sanitary products for free... it also makes the statement that access to sanitary products is a human right for all, uniting our population in a shift towards equality (cited in Rimmer 2018).

This is a powerful statement because all humans, both male and female, have the right to sanitation. The participant in Rimmer's (2018) study emphasised the need for free access to sanitary products, as the risk of developing infections or transferring viruses increases when using sanitary products for longer than indicated. This is particularly relevant for menstruators living in the Global South, where menstruation-related products are not readily available. Although sanitary products are not free in South Africa, they have been exempt of value-added tax since April, 2019, which makes them more affordable (Rodriguez 2018).

2.7 Implications of Period Poverty

“Being on your period is the worst time for a woman to be homeless – it gives you that extra blow” (Vora 2020, p.31). Society deems menstruators who live in poverty as “dirty, deviant, and transgressive” (Vora 2020, p.34) because they may not be able to conceal menstrual bleeding and may not have access to clean and sanitary water, menstrual products, and toilet facilities. The implications of period poverty are multifaceted, as it may affect the daily lives of menstruators in various ways, including absenteeism, emotional distress, lack of dignity, and health implications.

2.7.1 Absenteeism

According to Benshaul-Tolonen et al. (2020), the educational achievement of menstruating individuals predominantly living in the Global South is hindered by absenteeism. Numerous factors related to menstruation contribute to the absenteeism of these individuals. These include a lack of suitable changing facilities and lavatories in schools, universities, and workplaces, a lack of resources that leads to the use of unhealthy or ineffective products, and the fear of leaking, which results in reduced concentration (Benshaul-Tolonen et al. 2020).

Although limited scientific research has been conducted on menstruation-related absenteeism in the Global South, the following statistics were reported in a 2021 study published in the *Journal of Sexual and Reproductive Health Matters*, which surveyed biological females in three African countries. In Burkina Faso, 17% of those who attended school had missed school due to menstruation in the past year, with this figure being 15% in Niger and 23% in Nigeria (Leech 2023). Leech (2023) states that a study conducted in Uganda in 2018 found that 19.7% of schoolgirls reported missing at least one school day during their most recent menstruation. Very little research on this topic has been conducted in South Africa; however, researchers at Rhodes University conducted a study in 2020. Leech (2023) reports that it was found that 22.4% of biological females surveyed, aged between 13 and 24, had missed school due to menstruation.

Because menstruation-related absenteeism is prevalent, Spain recently announced the adoption of menstrual leave. This is a workplace policy that allows approved absence from work due to menstruation- and/or menopausal-related symptoms (Letsebe 2023). Although there are various factors to consider, including whether the leave is paid or unpaid, who is entitled to menstrual leave, how much leave individuals are entitled to, and issues of unfair

treatment and employee privacy, South Africa is in the process of considering implementing this policy. According to gender and social activist Chirwa (n.d. cited in Letsebe 2023), it is purported to promote gender and workplace equality. Chirwa (n.d.) further states that it contributes to a culture that supports and values the health and well-being of all employees, regardless of gender (cited in Letsebe 2023).

2.7.2 Emotional Distress

Jaafar et al. (2023) state that menstruation may lead menstruating individuals to develop anxiety, depression, social isolation, and stress. This is largely due to menstrual stigma and poverty, and includes inaccessible toilet facilities, lack of privacy, unclean water, inadequate sanitation, and unhygienic menstrual products. Cardoso et al. (2021) assert that fulfilling one's basic needs, such as food, shelter, and water, is fundamental to health and well-being, as the inability to meet these needs can negatively affect mental health, which may lead to emotional distress. In an attempt to analyse the lived experiences of homeless menstruating individuals, Vora (2020 cited in Taylor 2023) found that most participants viewed menstruation as an emotional and painful experience, characterised by anxiety, depression, irritability, stress, and vulnerability. Consequently, the basic needs of menstruating individuals who live in poverty may remain unmet, which results in emotional distress.

2.7.3 Lack of Dignity

Jaafar et al. (2023) state that comfort, dignity, privacy, and safety surrounding menstruation are global issues. Due to these challenges, menstruators may lack access to clean and sanitary toilet facilities and water, which can lead to feelings of shame and a loss of dignity. Furthermore, a lack of privacy when changing menstrual products can result in menstruators feeling undignified. Many women who live in low-income areas do not use DMPs; instead, they resort to using cloths, newspapers, or rags because they cannot access or afford adequate menstrual products. This situation contributes to a loss of dignity. Tull (2019) explains that the Water Supply and Sanitation Collaborative Council believes that ignoring the menstrual hygiene needs of biological females is a violation of their rights, particularly the right to human dignity, as well as the rights to bodily integrity; equality; freedom from degradation, abuse, and violence; health; non-discrimination; and privacy.

2.7.4 Health Implications

There are potential health implications for menstruators who live in poverty, as the lack of access to clean and sanitary products may lead to diseases and infections. Furthermore, menstruators may not have the financial means to purchase menstrual products, which results in the protracted use of these products or the use of unsanitary alternatives, such as rags or cloths. A 2021 study conducted by Thinx and Period to examine the need for menstrual products in schools and universities found that 51% of students reported having used menstrual products for longer than recommended (Taylor 2023). Jaafar et al. (2023) indicate that this may lead to infections, including urinary tract infections and bacterial vaginosis. Taylor (2023) adds that it may also result in toxic shock syndrome and sepsis. In addition to infections, the risks of skin irritation, vaginal itching, and white or green discharge may also occur (Jaafar et al. 2023).

The implications of period poverty are interconnected, which demonstrates how it likely affects menstruators in multiple aspects of their lives by stripping them of their rights as human beings. However, society and institutions have responded to period poverty on both a national and global scale, as discussed below.

2.8 Societal and Institutional Response to Period Poverty

Given the seriousness of period poverty on a global scale, society and institutions have responded with the hope of improving and overcoming this issue to effect global change. Menstrual activism has also risen, with the aim of ending period poverty and menstrual stigma by raising awareness of the complex and healthy phenomenon of menstruation.

2.8.1 Societal Response

Bobel and Fahs (2020, p.1001) define menstrual activism as a movement that focuses on “seeing the body not as trivial or unimportant, but as something foundational, urgent, and politically relevant”. Menstrual activism has the potential to change the way menstruation is viewed by fighting for gender equality and social justice, which, according to Røstvik (2022), surged in 2010. This resulted in the creation of the hashtag *#menstruationmatters* (https://twitter.com/i/flow/login?redirect_after_login=%2Fhashtag%2Fmenstruationmatters), as well as the Instagram account *@menstruationmatters* (https://www.instagram.com/menstruationmatters_/?hl=en), which united “the personal and the political, the intimate and the public, the minutiae and the bigger stories about the body” (Bobel and Fahs 2020,

p.1001). The Instagram account aims to create awareness surrounding menstruation-related topics, including menstrual stigma and period poverty, while allowing menstruators worldwide to share their stories and offer advice regarding menstruation-related issues. Stevenson (2022) opines that the creation of the hashtag derives from the second-wave feminist slogan created in the 1960s, “the personal is political”, which aimed to promote social justice, especially for biological females. During the 1960s, more than 1 000 women gathered in the USA to share their experiences of sexual harassment in the workplace, body image, pregnancy, and menstruation (Stevenson 2022). Stevenson (2022) adds that they also gathered to rid themselves of the toxicity ingrained by widespread patriarchy and to use individual pain to uncover collective truths. Furthermore, individuals such as activist, artist, drummer, and electronic music producer Madame Gandhi advocate against menstrual stigma and period poverty. She ran the 2015 London Marathon visibly bleeding:

I ran with blood dripping down my legs for sisters who don’t have access to tampons and sisters who, despite cramping and pain, hide it away and pretend like it doesn’t exist. I ran to say, it does exist, and we overcome it every day (cited in Røstvik 2022).

This statement emphasises the seriousness of period poverty and menstrual stigma and the need to raise awareness so that these issues may be seen as normal rather than abject.

2.8.2 Institutional Response

According to the WHO and UNICEF (2012 cited in Pednekar et al. 2022, p.1), MHM refers to

women and adolescent girls ... 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.

MHM may therefore be the key factor in reducing menstruation-related challenges from a social and environmental perspective. Furthermore, MHM may help to reduce period poverty and menstrual stigma, as it allows individuals to understand the menstrual cycle while meeting their sanitation needs during menstruation. MHM advocates for freedom from socio-economic and socio-cultural restrictions, as well as accessible, affordable, hygienic, and safe

menstrual products and facilities. However, Pednekar et al. (2022) explain that menstrual hygiene is a global public and social health concern, as menstruators worldwide face challenges related to menstruation. A study conducted in Australia found that menstruating individuals encountered logistical challenges related to using menstrual products, including concerns about concealing purchases of sanitary products, high financial costs, and the need for sufficient female-friendly infrastructure (e.g., working toilets, accessible disposal facilities, and privacy) (Pednekar et al. 2022).

Moreover, the fact that the packaging of menstrual products is predominantly in one language may hinder the advancement of addressing menstrual-related challenges, as not everyone may understand the language used. In addition, the menstrual product label should include information about the ingredients used in each component of the product to allow menstruators to know what is in the products they use and to ensure that the products are safe (Scranton and Women's Voices for the Earth 2022). Scranton and Women's Voices for the Earth (2022) outline three key pieces of information that should be provided for each ingredient used in the production of menstrual products: the chemical name of the ingredient, the component of the menstrual product in which this ingredient is used, and the function of the ingredient. Menstrual product information should be available in the official language(s) of the country, as well as in English, the universal language, to ensure that all individuals can understand the information provided. This will enable menstruators to see what the product is made of to allow them to determine whether the product is environmentally and reproductively friendly or harmful. The three key pieces of information advised for inclusion were determined after Women's Voices for the Earth conducted a field study between November 2021 and February 2022 on ingredient disclosures on period product labels in New York and across the USA. They found that while some brands and products provide a list of ingredients, these tend to be vague, as not all ingredients and their functions are listed on the packaging (Scranton and Women's Voices for the Earth 2022).

Given the seriousness of the need for MHM, UNICEF (2018) is working to overcome menstruation-related challenges and promote positive MHM. This is achieved through research and the provision of information about menstruation, breaking down stigmas, and encouraging positive hygiene habits. UNICEF (2018) addresses this in four key ways: social support, knowledge and skills, facilities and services, and access to absorbent materials and supportive supplies. Additionally, UNICEF (2018) provides adequate facilities and supplies, including soap, toilets, and water, to schools in the Global South. Furthermore, it supports all

menstruating individuals, regardless of sexuality, to reinforce gender equality. As a result of these efforts, perceptions of menstruation are changing for the better.

2.9 Students' Perceptions of Menstruation

Students have varying perceptions of menstruation, both positive and negative, depending on their individual experiences. To make comparisons and identify contrasts, it is important to review the literature on how students perceive menstruation. This section outlines studies conducted on students' attitudes, awareness, knowledge, and perceptions regarding DMPs and RMPs, as well as menstrual health and hygiene in various parts of the world.

2.9.1 Global Overview of the Use of DMPs and RMPs

Ramsay et al. (2023) state that a survey was conducted on 5 658 nurses in South Korea, which found that the majority of them used DMPs (89%) and few reported the use of RMPs, including cloth menstrual pads (5%) or menstrual cups (2%), as a means of managing menstruation. The main reasons for the widespread use of DMPs were their convenience for changing and ease of disposal. Despite the low percentage of participants using RMPs, those who did, reported using them for their comfort, eco-friendliness, and health reasons (Ramsay et al. 2023). Another study, conducted in 2020 at an unnamed Australian university, found that 65% of the respondents mostly used pads, 24% used tampons, 8% used a menstrual cup, and 2% used period underwear (Ramsay et al. 2023).

In contrast, a 2021 study conducted in Spain on menstruators (aged 18 to 55) found that 55% used RMPs to manage their menstruation (Ramsay et al. 2023). Among the participants, 48% used menstrual cups, 15% used reusable pads, and 9% used menstrual underwear. The use of these products varied by age, educational attainment, gender identity, place of birth, and wealth. Interviews were conducted with 34 of these participants, who perceived menstrual cups as hygienic, comfortable, environmentally friendly, and healthier than DMPs. However, the participants also noted difficulties in using menstrual cups, including physical pain after prolonged use and insufficient space for cleaning and management, particularly when around others at home.

2.9.2 Attitudes, Awareness, Knowledge, and Perceptions of Menstruation

Padmanabhanunni and Fennie (2017) state that studies have been conducted in numerous African countries, including Kenya, Tanzania, Malawi, and Ghana, which reported that young

menstruating individuals considered menstruation the most significant social stressor and barrier to schooling. This is due to menstruation-related physical symptoms, psychological distress stemming from menstrual stigma, and period poverty resulting from limited or no access to adequate sanitary products (Padmanabhanunni and Fennie 2017). These factors restrict menstruators from reaching their full potential and lead to missed school days or even dropping out, especially among those from historically disadvantaged backgrounds. Padmanabhanunni and Fennie (2017, p.54) identify five attitudinal aspects regarding menstruation from existing literature: menstruation as “a debilitating event”, “a bothersome event”, “a natural event”, “an event that can be predicted and anticipated”, and “denial of the effect of menstruation”.

A study conducted by Ismail, K. et al. (2016) explored the perceptions of university students from the University of the Western Cape regarding menstruation. The study revealed three major themes. Firstly, menstruation was viewed as a hygiene concern; a phenomenon that is seen as dirty and that requires women to monitor themselves (Ismail, K. et al. 2016). Some participants expressed a desire to wash away menstruation with perineum soap and water, as they felt dirty and believed they smelled bad. Feelings of concealment, secrecy, and shame as forms of social control were evoked, as some participants mentioned that they did not want anyone to know when they were menstruating, especially not their fathers. Ismail, K. et al. (2016) state that these feelings of shame and concealment may persist into adulthood and potentially affect the well-being of menstruators.

Secondly, religious discourse as a form of social control aligns menstruation with both purity and impurity (Ismail, K. et al. 2016). For some participants, menstruation was celebrated; one mentioned that menstrual blood was the purest blood, and another stated that menstruation was a blessing despite the pain that may accompany it (Ismail, K. et al. 2016). However, Ismail, K. et al. (2016) note that for some participants, religion-based negative social control views menstruation as a sin, with one participant even perceiving it as punishment. This reveals contradictory views between purity and dishonour.

Lastly, menstruation was regarded as a medical discourse, which evoked beliefs about menstrual control and the body as a machine (Ismail, K. et al. 2016). Ismail, K. et al. (2016) state that the participants viewed menstruation as a natural process that indicates that the body is healthy and functioning as it should.

Fennie et al. (2021) conducted a study similar to that of Ismail, K. et al. (2016), but focused on menstruators in the Global South who lived in poverty. Despite most of the results evoking negative perceptions of menstruation, some individuals reported feelings of happiness and pride as they “were now women” (Fennie et al. 2021, p.413). It is evident that individuals experience and perceive menstruation differently, depending on a range of factors, including socio-economic circumstances, cultural and religious beliefs, menstrual education, and social interactions.

In conclusion, menstruation is a complex phenomenon, as there is a multifaceted range of aspects to consider when examining menstruation and how it is perceived by menstruating individuals. Each aspect – medicalised, cultural and religious, environmental, and social – showcases the different perspectives (or combinations thereof) from which menstruation may be viewed. How menstruators experience menstruation from a social perspective shapes their perceptions, which can be positive, negative, or ambivalent. However, these perceptions are seemingly transforming, given the heightened awareness of this complex biological phenomenon.

2.10 Theoretical Framework

Puleo (2017, p.30) defines ecofeminism as “an attempt to outline a new utopian horizon, addressing the environmental issue from the categories of patriarchy, androcentrism, care, sexism and gender”. Singh and Rai (2022) state that ecofeminism centres on the fact that all forms of oppression are interconnected and that the structure of oppression is identical. Vijayaraj (2017) adds that the oppression of women and the abuse of the earth are caused by the social disposition of male domination, which indicates the connectedness between both women – the Other – and the environment. However, this does not mean that all men are exploiters; rather, it is suggested that Western capitalist and colonialist ideals of masculinity may foster a “masculinist insensitivity to the bonds between human beings and ecogenic environments [that are] triggering and driving climate change” (Gaard 2017, p.145). In addition, desertification, displacement of people, droughts, extreme weather, floods, and loss of cultivatable land and species may occur. Ecofeminism therefore criticises the social construct developed by the patriarchal system, which considers the self, culture, man, and white as superior, and the biological female, nature, animal, and non-white as inferior (Vijayaraj 2017). Ecofeminism advocates rebuilding the relationship between humanity and

nature, as well as between men and women, to achieve the dual liberation of women (women's liberation movement) and nature (ecological protection movement) (Ling 2014).

There are three branches of ecofeminism, each possessing a unique connection to menstruation. Radical ecofeminism acknowledges the oppression of women and the environment due to patriarchy, which makes them, the Other, inferior, while men are framed as "superior". Radical ecofeminists believe that women's liberation and ecological survival can only be achieved through dismantling the current patriarchal society. Socialist ecofeminists, on the other hand, advocate for social justice and gender equality for women, as well as the protection of the environment. Focusing on women's biological functions, cultural ecofeminists view menstruation as a celebration, as it strengthens women's connection to "Mother Nature" by enabling them to bring forth and sustain life. Considering these similarities between women and nature, menstruation can be understood as an embodied experience that parallels environmental degradation when viewed from an ecofeminist perspective. To make this comparison, the inevitability of menstruation, as well as the lack of awareness, choice, education, and means, is discussed in relation to environmental exploitation.

As highlighted by ecofeminists, both women and the environment are often treated as resources to be controlled or stigmatised. Menstruation is an inevitable phenomenon, yet the lack of choice in how it is socially regarded and managed is reflected in the limited options individuals often face when living in a degraded environment caused by patriarchal-capitalist systems. In addition to lacking access to menstrual products, menstruators who live in low-income areas seldom have access to safe and sufficient WASH facilities to manage their menstruation (Winter et al. 2022). Because of this, menstruators are not always able to safely dispose of the materials used, whether they be rags, cloths, newspapers, or sanitary pads, which results in these products ending up in rivers or sewage systems, or being burned, which contributes to ecological destruction (Khorsand et al. 2023). This destruction largely stems from legacies related to colonialism and industrialisation rooted in capitalism, which creates safety hazards for both individuals and the environment. Moreover, individuals who live in low-income areas are not always aware of or educated on how to adequately manage menstruation through MHM practices. Although menstruation is an unavoidable phenomenon, and environmental exploitation is socially produced, both conditions largely reflect patriarchal dominance and control.

Despite menstruating individuals, particularly those living in poverty, suffering the most, ecofeminism suggests that women should take ownership of themselves and of nature. This can occur in various ways, including menstrual suppression, which serves as a means of alleviating painful symptoms associated with menstruation. Gunson (2016, p.320) conducted a study to explore menstruators' perceptions of menstrual suppression through oral contraception and found that for some participants, it "felt normal, instinctive and necessary for existence, even for survival". Another way to take ownership is by advocating for menstrual and reproductive justice, as well as environmental justice, as outlined by socialist ecofeminists, particularly in the Global South. Amery et al. (2023) explain that this advocacy can empower women to take control of their bodies by addressing access to menstrual products, menstrual health education, and broader issues surrounding hygiene and sanitation. Amery et al. (2023) add that to promote environmental justice, menstruators should use environmentally friendly menstrual products and properly dispose of them. However, this may be problematic in the Global South, where women may not have access to environmentally friendly menstrual products or adequate disposal methods. In a survey conducted by Amery et al. (2023) in Nepal, disposing of sanitary pads was problematic due to a lack of local waste disposal services. Of the 88 menstruating individuals surveyed, 35% disposed of their used products outside, in the jungle, field, or river. Amery et al. (2023) report that another 35% of menstruators buried their used sanitary pads, which is also environmentally harmful, while 17% burned them, which creates potentially toxic fumes. The remainder flushed them down the toilet or threw them in the bin. Not only can DMPs be harmful to the environment, but they may also pose risks to the women using them. One participant stated, "When they [pads] are deposited in riverbanks, flies sit on them, and the same flies might sit on our food. Hence, the food gets contaminated, and we suffer from diseases" (Amery et al. 2023, p.9). Therefore, although it may be difficult under certain socio-economic circumstances, such as living in poverty, ecofeminism suggests that women should take control of their experiences and of nature, as this may allow them to feel liberated in their own bodies. Furthermore, by taking ownership of their embodied experiences, they contribute to actively protecting the environment around them, which promotes environmental, menstrual, and reproductive justice.

When discussing ecofeminism, it is important to also consider intersectional environmentalism (IE) as this approach advocates for the protection of both individuals and the planet (Thomas 2022).

2.10.1 Intersectional Environmentalism (IE)

Thomas (2022) states that IE argues that environmental and social justice are interconnected, and that environmental advocacy that overlooks this connection is both dangerous and insufficient. IE not only focuses on achieving environmental justice (of which climate justice is a part), but also promotes environmental activism, education, and policy with equity, inclusion, and restorative justice in mind, while reinforcing historically excluded voices. Therefore, whereas ecofeminism primarily concentrates on how gender, gender roles, the patriarchy, and sex negatively impact the environment, IE encompasses a broader spectrum of marginalised groups and social injustices in the discourse (Thomas 2022), particularly from historically marginalised individuals such as those living in the Global South.

Thomas (2022) explains that IE argues that the systems of oppression that subjugate people are the same systems that degrade and oppress the planet. This is evident in the Global North, where extractive industries and profit are prioritised over planetary well-being. This prioritisation interlinks social inequality with environmental degradation, as the negative impact on individuals is often disregarded in the process (Thomas 2022). These adverse consequences frequently affect poor and vulnerable groups first, who have limited means to cope with them.

A historic example of this degradation is evident in colonialism and industrialisation, both rooted in capitalism, whereby both humankind and the natural environment are negatively impacted, which ultimately causes the contemporary climate crisis. McQuade (2019) explains that colonialists took control of dependent territories and regarded these areas as places with unlimited resources to exploit, without considering the long-term impacts that this exploitation might have on the environment, which culminates in phenomena such as climate change. The environment has been negatively affected by colonialism in several ways, including deforestation through clear-cutting rainforests for industrial rubber and the extraction of Africa's gemstones and minerals, which has led to land degradation, pollution of local water sources, and a reduction in air quality (McQuade 2019). Another detrimental impact of colonialism is desertification, which refers to the loss of soil moisture and vegetation due to colonisers forcing rural communities to chop down forests to make way for cotton plantations and other cash crops (Varanasi 2022). Moreover, industrialisation impacts the environment and its inhabitants in four major ways: firstly, by generating increasing air pollution, which causes a range of illnesses in individuals and takes a toll on the health of

humans, animals, and the environment. Secondly, soil pollution leads to the destruction of vegetation and causes chronic health issues among those exposed to contaminated soil. Thirdly, water pollution occurs when harmful chemicals and radioactive waste are dumped into open oceans or rivers, which causes widespread damage and poses a threat to both the ecosystem and individuals who come into contact with such water. Lastly, habitat destruction disrupts natural patterns and rhythms, which leads to the extinction of species as habitats are lost (Goswami 2021).

Despite colonialism and the onset of industrialisation occurring many years ago, the lasting and ongoing effects, such as climate change, continue to impact the planet and its inhabitants. Furthermore, these impacts are not felt equally by all of humankind; for example, those who are poor and female are more likely to suffer the consequences of environmental destruction.

Because of the degradation of both the earth and its inhabitants, IE aims to embrace all cultural contributors to environmentalism and sustainability, as many indigenous groups worldwide have been better custodians and protectors of the planet for centuries (Thomas 2022). By embracing these traditions, historically marginalised groups will be able to share their own stories and advocate for both environmental and social justice.

As IE aims to include the marginalised, such as those living in poverty, their voices may be heard, and their struggles for access to adequate water, sanitation, and toilet and disposal facilities regarding MHM may be addressed.

Having introduced ecofeminism and IE, it is vital to examine their origins, as this will provide an understanding of how they emerged as theoretical frameworks.

2.10.2 Origins of Ecofeminism

According to Merchant (2005), the term “ecofeminism” was first defined by French feminist Françoise d’Eaubonne in 1974 in her work *Feminism or Death*, after she founded the Ecology-Feminism Centre in Paris in 1972. D’Eaubonne called upon women to lead an ecological revolution to save the planet, which would involve new gender relations between women and men, as well as between humans and nature (Merchant 2005). She viewed the destruction of the environment as an issue that stems from a patriarchal culture (Merchant 2005). Furthermore, a conference titled “Women and Environment” was organised by geographers Sandra Marburg and Lisa Watkins in Berkeley, California, in 1974 to discuss solutions to the most pressing threats to life (Merchant 2005). As a result, connections

between women and nature were explored in works by Sherry Ortner (1974), Rosemary Ruether (1974), Susan Griffin (1978), and Carolyn Merchant (1980) (Merchant 2005).

Thomas (2022) explains that ecofeminism derives from the environmental and second-wave feminist movements of the 1970s and 1980s. The Chipko movement, a forest conservation initiative that originated in India in 1973, is particularly regarded as one of the first ecofeminist demonstrations, where over 2 000 women surrounded trees hand in hand to protest the destruction of nature (Thomas 2022). According to Thomas (2022), this movement resulted in women continuing to advocate for environmental protection while honouring the connection between nature and the systemic inequalities faced by women. Additionally, credit has been given to Ynestra King, who popularised the term with her article titled “What is ecofeminism?” in 1987. Thomas (2022) states that King challenged readers of the article to reflect on how their belief systems, shaped by society, contributed to the negative treatment of both women and the environment.

Thomas (2022) indicates that by the late 1980s, three branches of ecofeminism began to develop, namely cultural, radical, and socialist ecofeminism. These are explained below.

2.10.2.1 Cultural Ecofeminism

Cultural ecofeminists often draw on gender roles (biological females being considered nurturers), biology (breastfeeding, childbirth, menstruation, and pregnancy), and spirituality (goddess worship) as the basis for the belief that women share a strong connection with nature (Thomas 2022). These elements are viewed as sources of empowerment. Consequently, women are seen as more closely associated with nature than men (Vijayaraj 2017), which makes them more likely to live harmoniously with the environment.

Vijayaraj (2017, p.74) explains how, in prehistoric times, women were worshipped as goddesses, regarded as “giver[s] of life” and held in high esteem. Numerous cultures explore the connection between women and nature, worshipping earth goddesses, including Gaea, who was seen as the first mother goddess and a personification of the earth in Greek mythology (Thomas 2022). According to Thomas (2022), the following cultures also have their own versions of earth goddesses whom they worship: Asase Ya of the Bono people of Ghana – the earth goddess of creation, fertility, and truth; Maya-Akna – the mother goddess of the Maya civilisation, embodying childbirth and fertility; Lepcha-Bunoo – the mother creator deity; Maori-Papatūānuku – the land that gives birth to all things; Native Hawaiian-

Papa – the Earth Mother; and Huichol-Tatei Yurianaka – a fruitful Mother Earth. Thomas (2022) explains that earth goddesses like these, which emphasise the connection between women and nature, are deeply embedded in cultures worldwide and laid the foundation for ecofeminism. Moreover, Merchant (2005) explains that this vision of worshipping earth goddesses serves as a source of empowerment and inspiration for ecofeminists, celebrating the connection between women and nature through the revival of ancient rituals centred on animals, goddess worship, the female reproductive system, and the moon.

However, due to the emergence of a patriarchal culture, mother goddesses were overthrown and replaced by male gods, which led to the subjugation of these goddesses. Moreover, Merchant (2005, p.202) states that during the scientific revolution of the 17th century, nature was further degraded by “replacing Renaissance organicism and a nurturing earth with the metaphor of a machine to be controlled and repaired from the outside”. Although the earth is historically depicted as female, regarding it as a machine to be controlled by male-developed industry, science, and technology results, according to cultural feminists, in Mother Earth being viewed in an exploitative and masculinist manner (Merchant 2005).

2.10.2.2 Radical Ecofeminism

Radical ecofeminism centres on the practice of dismantling patriarchy, as well as the belief that women and nature are objects that may be exploited (Thomas 2022). This perspective arises from the conviction that patriarchy is the root cause of both women’s oppression and ecological destruction. Thomas (2022, p.44) states that radical ecofeminists combat the negative portrayals of women and nature, which are viewed as “chaotic, emotional, and weak”, in contrast to portrayals of men as “ordered and rational decision-makers and leaders”. Radical ecofeminism therefore argues that gender differences are instilled by patriarchy, which degrades and undervalues both women and nature (Vijayaraj 2017). Moreover, both Vijayaraj (2017) and Plumwood (1993) assert that radical ecofeminists recognise a strong connection between the various forms of exploitation: class, gender, race, and nature. Plumwood (1993) further explains that patriarchy operates through the construction of dualisms, including male/female, master/slave, civilised/primitive, and reason/nature, which establish a foundation for the connections between different forms of oppression. Consequently, Plumwood (1993) underscores the necessity of dismantling patriarchy’s hierarchical dualisms to achieve women’s liberation and ecological survival.

Because ecofeminism emphasises the connection between women and nature, stemming from a shared structure of oppression (Singh and Rai 2022), it is believed that women have a closer connection to nature than men (Vijayaraj 2017). However, some ecofeminists oppose this view, arguing that this metaphorical connection exacerbates the oppression of both women and nature by framing nature as feminine.

2.10.2.3 Socialist Ecofeminism

The main aim of socialist ecofeminism is to analyse and disrupt systems of both domination and oppression along multiple axes, including gender, class, capitalism, imperialism, and patriarchy (Carlassare 2000). Carlassare (2000) states that socialist ecofeminists argue that capitalism, patriarchy, and environmental exploitation are interconnected systems of oppression; systems of domination, such as capitalism and patriarchy, are ecologically destructive. Both women and nature are regarded as “raw materials” or “natural resources” that should be freely or cheaply available; they are merely seen as sites of development and improvement (Mies and Shiva 2014). To further explain this connection of power, Mies and Shiva (2014) refer to how pregnant women are viewed as a “raw material” from which the “product” – the baby – is extracted. In the case of a caesarean section, the doctor is seen as having “produced” the baby, rather than the mother. Instead of focusing on the love and connection between mother and baby, the emphasis is placed on the “foetal outcome” controlled by the doctor, which demonstrates the shift in power from the mother to the doctor, from women to men (Mies and Shiva 2014). Similarly, industrially produced seed and fertiliser have rapidly transformed soil fertility and plant life into a non-renewable resource, as nature’s way of renewing plants is considered too slow and “primitive” (Mies and Shiva 2014). This is evident in the way that a seed – the source from which plant life rises again – is turned into a “genetic resource” to be engineered and owned for profit, which demonstrates the shift from ecological reproduction to technological production (Mies and Shiva 2014). As the seed is colonised, women’s bodies are also colonised. This branch of ecofeminism therefore fights for social and ecological justice by focusing on the material conditions of women’s lives and the environment.

2.11 Women and Nature

Ismail, H. et al. (2016) mention that Aristocles stated that “a man is not entitled to anything”, which reflects the idea that nature belongs to all living beings, regardless of gender.

Therefore, as women are part of nature, they are just as important in protecting the environment as men. Moreover, it is believed that women have a closer connection to nature than men due to their physiology: “women are closer to nature biologically because their menstrual cycles coincide with nature’s seasonal and cyclic patterns” (Vijayaraj 2017, p.73). This refers to the “body-based argument”, which claims that the unique bodily experiences of women, including breastfeeding, childbirth, menstruation, ovulation, and pregnancy, enable them to connect with nature more readily (Archambault 1993). Furthermore, Brisson (2017) states that women’s bodies are more affected by nature than men’s, for example, through the influence of the moon.

Another way in which women are believed to be closer to nature is through the “oppression argument”, which is based on the belief that the way women experience life, resulting from a sexual division of labour and associated oppression, has led them to develop a certain insight into and connection with nature (Archambault 1993). This argument is deeply rooted in the fact that women and nature share a common threat: masculine violence, i.e., patriarchy. Brisson (2017, p.16) states that “patriarchal gender relations in society correspond to androcentric environmental ethics”. This means that the way women are treated by men, through processes of domination, reflects and reinforces the way the environment is treated by society – through processes of domination.

Some ecofeminists, specifically socialist ecofeminists, hold contradicting beliefs about this close connection between women and nature. Archambault (1993, p.20) argues that “the claim that women are biologically closer to nature reinforces the patriarchal ideology of domination and limits ecofeminism’s effectiveness”. Socialist ecofeminists believe that this connection is merely the result of social construction and that the association of nature as “feminine” and a “mother” is harmful to both women and the environment.

However, not all ecofeminists view the connection between women and nature as a driver of oppression; rather, they see it as empowering. Cultural ecofeminists believe that this connection is powerful because the ability to bring forth life has been passed down from Mother Earth to women (Brisson 2017). Given that men cannot biologically bring life into the world, this emphasises women’s special connection with nature, as both women and nature are “the source of life” (Brisson 2017, p.18), which enables women to connect more deeply with nature.

Since the environment is regarded as “Mother Nature”, a feminine entity, it becomes easier to exploit the environment and its resources when viewed through a patriarchal cultural lens that traditionally assigns meaning and function to the “mother” (Brisson 2017). Brisson (2017) explains that the traditional, idealised mother figure gives continuously without expecting anything in return, which characterises the mother/child relationship as an imbalance of giving and receiving. This symbolises how the environment is treated – as if an unending depletion of its natural resources enables humans to use these resources freely and without concern. This leads to the belief that humans are entitled to take from nature without consequences (Brisson 2017). By regarding nature as feminine, the idea of exploiting both women and the environment is supported. Patriarchy views women as having value based on their capacities as mothers and their ability to bring life into the world, rather than being recognised as fundamentally valuable in their own right (Brisson 2017). Consequently, according to Brisson (2017), when the environment is viewed in a motherly manner, it is valued solely for what it can produce rather than for what it is. This means that, like women, the environment is considered inferior in a patriarchal culture. Moreover, it suggests that nature is regarded as “being less than ‘culture’ or anything man-made” (Brisson 2017, p.21). Some ecofeminists argue that attributing motherly characteristics to the environment may perpetuate dangerous hierarchical thinking (Brisson 2017), especially in the existing patriarchal culture. Brisson (2017) states that characterising the environment as “Mother Nature” may imply an entity that is easily taken advantage of and taken for granted, which emphasises helplessness. Ecofeminists believe that this kind of relationship with nature may lead to the exploitation of the earth’s resources, which can potentially result in the rapid depletion of its natural wealth.

This argument about whether nature should be regarded as feminine and whether metaphors related to the “mother” are appropriate is complex. Although feminising and viewing the environment as a mother figure emphasises women’s connection to nature and their ability to bring forth life, the forces of nature are not always gentle and loving. Brisson (2017) highlights that extreme weather conditions, natural disasters, and wild animals do not fit the nurturing “Mother Nature” narrative that some have constructed.

The way humans feel about the environment directly impacts how they live their daily lives (Brisson 2017). The conception that humans have of nature is of great significance because it directly affects how they treat their environment, whether positively or negatively. Brisson (2017) states that it is important and powerful to view nature with reverence, as this may lead

to humans being gentler with the environment, including the land on which homes are built and crops are produced. This may result in a greater understanding of nature, without the need to dominate it.

Because ecofeminism advocates for the dual liberation of women and nature, menstruation plays a role in achieving this liberation, as menstruators are often viewed as inferior due to the stigmas and taboos surrounding menstruation. Some ecofeminists believe that biological women have a closer connection to nature because of their physiology; specifically, their ability to menstruate and bring forth life. Examining menstruation from an ecofeminist perspective could therefore provide a useful framework to grapple with this complex phenomenon.

2.12 Conclusion

In conclusion, by implementing ecofeminism as a theoretical framework, this study sought to interpret the ancient connotations between women and nature. Furthermore, it explains the reasons for a widespread, often ineffable discourse that depicts both women and nature as being oppressed by and inferior to men. Ecofeminism advocates for the liberation of both women and the environment and promotes menstrual, reproductive, and environmental justice. By viewing menstruation through an ecofeminist lens, one can see how both women and nature may be affected by nefarious discourses constructed over many generations, as well as by environmentally harmful menstrual products and practices.

3.1 Introduction

The research methodology forms a critical component of a study as it provides the overall framework that guides data collection and analysis (Mahawar 2023). Additionally, it ensures that the research is conducted in a credible, ethical, reliable, and valid manner, thereby contributing to the field of study. The chapter first explains the phenomenological research design. Subsequent sections detail the study sample, data-collection instrument, data analysis, and interpretation of the study findings. Lastly, the chapter addresses the ethical considerations and limitations of the study.

3.2 Social Constructivism

This study is underpinned by social constructivism, which is defined by Bryman (2012, p.33) as an ontological position that “asserts that social phenomena and their meanings are continually being accomplished by social actors”. This means that the social phenomenon of menstruation, relevant to this study, is not only produced through social interaction but also takes shape in a constant state of revision, as menstrual experiences and perceptions, including stigma, are not definitive. Several factors may influence these experiences, such as medication, new research on menstrual products, social media, changing perceptions, and menstrual activism. Societal assumptions about the biological female body, as well as medical perspectives, influence how individuals view menstruation (Agrusa 2019). Agrusa (2019) highlights that menstruation is characterised by feelings of embarrassment and shame, as the physical transition from “girlhood” to “womanhood” should be kept a secret, including the accompanying blood, odour, and sanitary products.

According to Creswell (2014 cited in Chirambo 2019), the worldview related to social constructivism focuses on understanding the specific context in which individuals live and how culture and experiences shape the meanings they create. This is relevant to this study because the researcher aimed to understand the meanings that menstruators construct regarding their experiences and perceptions of menstruation. A limitation of the constructivist view is that the researcher’s assumptions and background may interfere with interpreting the experiences and perceptions of the individuals studied. However, Begoray and Banister (2019 cited in Chirambo 2019) state that heightened objectivity may be achieved if researchers

continually examine their own experiences and ideas, which may influence the interpretation of the research findings.

3.3 Phenomenological Enquiry

Phenomenology was employed in this study, which focused on the lived experiences of menstruating university students, to allow the researcher to gain insight into these experiences. According to Neubauer et al. (2019, p.90), phenomenology is defined as “a form of qualitative research that focuses on the study of an individual’s lived experiences within the world”. The aim of phenomenology is to describe the meaning of these experiences – both in terms of *what* was experienced and *how* it was experienced (Neubauer et al. 2019). For this study, the goal was to describe the experiences of menstruating individuals concerning menstruation. Neubauer et al. (2019) state that by examining an experience as it is subjectively lived, new meanings and insights can be developed to inform or shift how that experience – menstruation – is understood from an embodied perspective. In an interview the researcher conducted with Bobel via Zoom, she stated that “sociologically, embodied means how we engage with the body ... It’s not just the experience of, let’s say, flow, but it’s how we interact with our bodies ... We always engage with our bodies through culture, through social contexts” (C. Bobel, informal interview, 29 September 2025). Therefore, to gain a better understanding of the nuanced experiences and perceptions of menstruation, different aspects were considered, such as the social and environmental dimensions of menstruation.

With menstruation in particular, there are various stigmas and taboos associated with it, which lead to a negatively stereotypical view of menstruation in society. This highlights its embodied nature. This could result in a sensitive study, as menstruators may have different embodied experiences, both positive and negative, of menstruation, with stigma being an influential factor that reflects forms of socialisation and societal expectations. This may determine the perceptions that menstruating individuals have of menstruation, as well as other factors relating to biological females. However, using phenomenology as a methodology may enable the reader to better understand the perceptions and experiences of menstruation, by viewing it as a complex phenomenon with ambivalent and contradictory experiences. Phenomenology therefore allowed the researcher to better understand the nuanced experiences and perceptions of menstruation, which was the focus of this study, including the different aspects of menstruation, such as social and environmental factors, as discussed in the literature review (see Chapter 2).

3.4 Researcher's Positionality

In a qualitative study, it is important for the researcher to reflect on how their role in the study, along with their personal background, culture, and experiences, can potentially shape their interpretations, specifically the themes they advance and the meanings they ascribe to the data (Creswell and Creswell, 2018, p.296). Creswell and Creswell (2018, p.299) state that reflexivity requires commenting on the following points: past experiences and how these experiences shape interpretations. I was directly tied to the study as I am a registered, menstruating student at the University of the Free State (UFS) and have my own personal experiences and perceptions of menstruation. I have adequate access to WASH facilities, including clean water, private sanitation, and reliable means of menstrual waste disposal. I also have access to a range of menstrual health products, enabling me to choose which products I wish to use. However, these forms of access are not adequately available to all menstruators due to socio-economic circumstances. My own menstrual experiences may therefore have influenced the interpretations I made during the study, as well as the power dynamics throughout the research process. Given the sensitive nature of menstruation, I remained attentive to moments when participants appeared hesitant and reminded them that they could skip questions they were uncomfortable answering.

Moreover, my own environmental outlook and everyday practices regarding waste informed my awareness of the environmental dimensions of menstruation. I, therefore, remained attentive to the risk of interpreting participants' menstrual practices through a lens of individual responsibility or environmental moralising, rather than recognising the structural, economic, and infrastructural constraints that shape menstrual experiences.

3.5 Research Design

The study design was qualitative in nature, given its phenomenological focus. Creswell (2014 cited in Chirambo 2019) states that a qualitative research design aims to examine experiences from the perspective of the individuals who experience a specific phenomenon; in this case, menstruation. The researcher selected a qualitative research design not only for exploratory purposes but also to allow the participants to express their embodied menstrual experiences in their own terms. The researcher interacted with the participants to develop a better understanding of their experiences and perceptions of menstruation. The researcher attempted to recruit participants from all three campuses to conduct focus groups at the UFS, in the natural setting of the participants, who were registered students at the university.

Because this study was qualitative, an inductive reasoning approach was suitable. Bryman (2012) describes inductive reasoning as an approach whereby theory is the outcome of research; i.e., the experiences and perceptions of menstruation, deriving from the researcher's data rather than being formed prior to data collection. In contrast to inductive reasoning, deductive reasoning is an approach whereby a hypothesis, subject to empirical scrutiny, is inferred and tested (Bryman 2012).

3.6 Population and Sampling

Purposive sampling was used to select focus group participants. Bryman (2012) states that purposive sampling involves selecting units (such as departments, documents, organisations, and people) with direct reference to the research objectives. For this study, the researcher focused on a specific group of participants: diverse menstruating students at the UFS. Some students who participated in a 2024 survey expressed interest in further contributing to the study; they were thus contacted about participating in the focus group. However, none of these individuals were willing to take part. Consequently, the researcher had to reach out to students who were enrolled in a sociology module taught by one of her supervisors. Because the topic of menstruation may be sensitive and is often shrouded in secrecy, it was a tedious process to recruit participants. The researcher recruited 15 participants and conducted focus group discussions with them until data saturation was reached, with all focus groups largely having the same outcomes. Some of the sociology students expressed their willingness to participate and referred the researcher to other potential participants. Snowball sampling was therefore also employed. Bryman (2012) defines snowball sampling as a technique in which the researcher initially samples a small group of people who are relevant to the research aims and objectives. These participants then nominate others who might have had similar experiences related to the research aims and objectives.

The following checklist provides a detailed description of who the researcher targeted, as well as the criteria for inclusion:

- Identifies as “female”
- Menstruates (regularly or irregularly)
- Registered student of the UFS (Bloemfontein, South, and Qwaqwa campuses)

The aforementioned criteria were met by all 15 participants.

In an email, the researcher clearly stated the research objectives and provided an overview of the study to ensure that potential participants were fully aware of its purpose, as well as how data would be collected, analysed, and stored.

The researcher interacted with the study population by conducting three focus group discussions. Babbie (2016, p.314) explains that a focus group, also referred to as a group interview, involves bringing a group of individuals together in a private, comfortable environment to engage in a guided discussion on a specific topic; in this case, menstruation. In response to explicit requests for one-on-one interviews, the researcher also conducted three individual interviews to gather data, which enabled all interested students to participate. All discussions took place on the Bloemfontein campus, in the Main Building, South Block B, Room S17. The focus groups and one-on-one interviews comprised menstruating students from different socio-economic backgrounds. These served as the data-collection methods to develop a better understanding of their experiences and perceptions of menstruation. According to Bryman (2012, p.201), focus groups involve interviewing a group of people, emphasising a specific topic (in this case, menstruation), which is explored in depth. The inclusion of a heterogeneous socio-economic and age cohort in the groups allowed for reflection on potentially contrasting and shared experiences. The researcher was also interested in how the participants would respond to one another's views and built a perspective from the interactions that took place within the group, using a semi-structured interview schedule. This interview schedule was used to prompt discussion, as the researcher was particularly concerned with exploring the participants' interactions and building a perspective from the exchanges that occurred among them. Consequently, some of the questions posed during the focus groups were adjusted based on the participants' reactions and responses. The researcher utilised insights from part of a completed 2024 survey among UFS students on a similar topic (Department of Sociology 2024), which complemented the qualitative findings of this study and served as a form of triangulation that deepened the discussion with the participants. The findings of the survey were employed to enhance the results of the focus group discussions. Although this is a sensitive topic, the completed survey indicates that menstrual stigma is not a significant concern among those who participated.

Bryman (2012, p.501) states that the focus group technique involves interviewing a group of at least four individuals, based on a specific topic. In this research, the topic of menstruation was explored in depth. This research was qualitative, as the researcher was particularly

concerned with revealing how the participants viewed the issues they faced and therefore provided an open-ended setting for the extraction of their views and perspectives.

As an introduction to the focus groups and one-on-one interviews, the researcher utilised visual prompts to emphasise the impact of non-biodegradable plastic, which is a significant component of DMPs, on the environment. These visuals served as discussion prompts and illustrated the extent of plastic pollution linked to human consumption. According to the results obtained, the students who participated in the survey were not particularly concerned about environmental degradation. This is therefore an underdeveloped area of research.

3.7 Interview Guide

When conducting a research study, it is important to use a suitable measuring instrument to collect data that are both reliable and valid. This ensures the stability (reliability) and truthfulness (validity) of the findings, increases transparency, and decreases the possibilities of researcher bias (Mohajan 2017). The measuring instrument used in this study was a semi-structured interview schedule, which facilitated focus group discussions, as the researcher was interested in the experiences and perceptions of a group of selected participants regarding the topic of menstruation. The researcher utilised a predetermined survey conducted on a similar topic (Department of Sociology 2024), which allowed her to incorporate those insights into the creation of her own interview schedule.

As mentioned previously, the researcher conducted three focus group discussions and three one-on-one interviews with menstruating university students at the UFS. With the consent of the participants, the researcher audio-recorded the interviews as a means of collecting the data, which were then transcribed.

3.8 Data Analysis

The researcher employed thematic analysis through coding to analyse the data. With the participants' consent, the researcher audio-recorded the interviews with her cell phone using the Voice Memos application to ensure quality and to obtain and interpret the findings as accurately as possible. The researcher transcribed the recorded interviews and subsequently coded the transcriptions. The data were organised into headings, sub-headings, and major themes, which facilitated the analysis.

Babbie (2016) defines the key process of coding in the analysis of qualitative research data as the categorisation or classification of individual pieces of data, coupled with a retrieval system. In this study, ATLAS.ti was used as the tool to code and store the data. The researcher also employed human-centric open coding to ensure accuracy, reliability, and validity. Babbie (2016) describes open coding as the process of breaking down collected data into distinct sections, closely examining it, and comparing similarities and differences. Similar actions, interactions, events, occurrences, and objects are grouped together into categories (Babbie 2016).

Different cycles of coding ensured the most accurately coded data. Firstly, pre-coding took place. Layder (1998 cited in Saldaña 2013) states that pre-coding involves bolding, circling, colouring, highlighting, and/or underlining participant quotes or passages that are “codable” to make the first cycle of coding easier, as the researcher already has an idea of what codes would be created. Secondly, first-cycle coding was conducted, which involved using ATLAS.ti to initially summarise segments of data. This was achieved through generating an artificial intelligence (AI) coding process, as well as an intentional AI coding process. Since the researcher conducted focus groups and one-on-one interviews, the transcriptions served as the data that were coded. Thirdly, second-cycle coding was undertaken, which involved grouping the summaries generated on ATLAS.ti during the first-cycle coding into smaller categories, concepts, or themes, thereby coding the data into more meaningful units of analysis. Human-centric or manual (open) coding also took place. This consisted of the researcher manually reviewing the data and creating codes by highlighting words or phrases to form categories, concepts, or themes. The researcher was then able to analyse and interpret the stable coded data.

Thematic analysis involves analysing data according to themes. Bryman (2012) states that a theme is a category identified by the analyst through their data, relating to their research focus. This process builds on codes identified in transcripts and provides the researcher with a basis for a theoretical understanding of their data, which enables them to make a theoretical contribution to the literature related to their research focus. Ryan and Bernard (2003 cited in Bryman 2012) recommend looking for repetitions, transitions, similarities and differences, linguistic connectors, missing data, and theory-related material when searching for themes, which is the approach the researcher took in this study.

3.9 Ethical Considerations

When it comes to focus groups, there are certain ethical considerations that researchers must take into account to ensure that the process of obtaining information from the participants is reliable, valid, and ethical, while also ensuring participant protection. The most important ethical requirement is obtaining ethical clearance, which the researcher successfully obtained (UFS-HSD2024/2057). Another vital ethical concern is informed consent, by which participants grant researchers permission to use their information. Sim and Waterfield (2019) state that there are four essential elements that must be fulfilled for consent to be valid: disclosure, comprehension, competence, and voluntariness. The researcher ensured that these elements were met by being transparent and honest with the participants, which enabled them to remain aware of what was happening, and by providing them with the opportunity to voluntarily withdraw from participation at any time.

Confidentiality is also a crucial factor when conducting focus groups. The researcher encouraged the participants not to disclose any identifiable information shared among them to ensure confidentiality (Sim and Waterfield 2019). Anonymity is another important consideration in focus groups. Although the researcher had no control over whether the participants would reveal the information or identities of fellow participants, she could only impose ground rules before each focus group, such as respecting one another's views and not divulging individuals' revelations along with their identities. The researcher used pseudonyms when referring to the participants in the study and informed the participants of this. By ensuring these concerns were addressed, the researcher's research process was conducted in an ethically considered manner.

Based on Creswell and Creswell (2018), the following steps were taken to ensure participant safeguarding and protection. Firstly, the research objectives were clearly articulated to ensure that the participants understood how the data would be used and stored. Secondly, the researcher obtained written permission from the participants to proceed with the data collection. Thirdly, the participants were informed of every step of the process to ensure their comprehension, including all data-collection activities and devices, as well as access to the recordings, transcriptions, and the final dissertation. Fourthly, participant interests, rights, and wishes were prioritised when decisions were made regarding the reporting of the data. Meeting the wishes of some participants for a one-on-one interview indicated adherence to

their preferences, which deviated from the researcher's original plan. Lastly, the final decision regarding participant anonymity rested with the participants.

As previously mentioned, the focus group discussions and one-on-one interviews were audio-recorded and subsequently transcribed. The researcher stored the data on a password-protected laptop, as well as on an external flash drive, to ensure that the data would not be lost in case the laptop encountered technical issues. Since the researcher utilised ATLAS.ti for the coding process, the data were also stored in ATLAS.ti itself, which allowed the researcher to share it with the participants. Additionally, the researcher endeavoured to be as sensitive as possible while conducting the focus group discussions and one-on-one interviews, being aware of the potential triggers that could arise among participants when discussing the lived experiences of menstruation. In this context, the researcher hoped that the participants would be authentic in disclosing their experiences, considering the impact of social desirability in research, which often arises when discussing sensitive topics.

3.10 The Value of the Research

This research aimed to expand knowledge and advance our understanding of menstruation, including its various aspects, such as growing social and environmental concerns. Despite the common occurrence of menstruation, it is often overlooked as a serious topic of investigation, especially when the research is non-medical in nature. Research is vital for societal progress and the development of new ideas, which the researcher believed would be achieved by conducting a study of this nature, as it would allow for a better understanding of menstruation and the experiences and perceptions surrounding it. Moreover, by conducting this study, the researcher aimed to build on the previously mentioned completed survey by adding in-depth knowledge and reflecting on the participants' lived experiences.

In addition, the researcher aimed to raise awareness of different ways of managing menstruation that might empower some menstruators who may not be aware of RMPs. These practices also offer environmental benefits. Furthermore, the focus groups would provide a holistic approach to discovering the lived experiences of menstruation, as well as understanding menstrual-related aspects, including period poverty, menstrual stigma, and DMPs and RMPs.

Furthermore, the UFS has six values, of which two, care and social justice, directly relate to menstruating students at the university. Regarding care, the UFS is

committed to creating circumstances that are not only conducive to high-quality teaching, learning, and scholarship, but doing this in ways that emphasise the well-being and happiness of the University community. We are therefore committed to caring for ourselves, our fellow humans, and the natural environment. We seek a new citizenship and new ways of belonging to the UFS that are premised on respect, inclusivity, listening, and empathy (UFS 2023).

With regard to social justice, the UFS

seeks to advance the values of human dignity through ethical and transparent institutional responsiveness. We interpret social justice within the South African historical context to entail an emphasis on inclusiveness, the reduction of inequality, and the creation of opportunities and pathways out of poverty and dispossession. Our commitment to social justice is our call to everyone to build on the productive foundations laid by all, and to build new structures in the pursuit of truths and practices that will grant human dignity to everybody (UFS 2023).

Despite the UFS acknowledging these core values, it is essential to determine whether the university is actively providing care and protection to its students, or if there are areas lacking in the delivery of care and protection, particularly for menstruating students. The researcher therefore also explored the participants' experiences regarding the university, including treatment by staff members, sanitation facilities, and hostels.

3.11 Conclusion

This chapter outlined the methodology of the study by describing the research design, study population, sample size, data-collection approach, and analysis. A qualitative design was employed to explore the participants' experiences and perceptions of menstruation. The researcher purposefully recruited 15 registered UFS students who identify as female, as they menstruate and would be able to provide data relevant to the study. A semi-structured interview guide was used for data collection, with open-ended questions that allowed the participants to respond in their own terms. The researcher used her mobile phone to record the face-to-face focus groups and one-on-one interviews to ensure that important issues raised were not forgotten.

Chapter 4: Results and Discussion

4.1 Introduction

This chapter presents the findings of the research. It focuses on the overarching aim of the study, which was to analyse the complex phenomenon of menstruation from a social and environmental experiences and perspectives. The chapter begins with a descriptive overview of the participants. The collected and analysed data are discussed under three overarching categories: attitudes towards menstruation, environmental awareness of and concern with menstrual products, and the potential health implications associated with menstruation and menstrual products. The qualitative data are analysed and discussed in each category to provide a comprehensive and integrated overview of the research findings. In addition, the theoretical framework of ecofeminism is incorporated into the results to offer an in-depth discussion.

4.2 Participant Overview

The following sections provide a brief description of each participant (all participants were registered students at the UFS at the time the research was conducted). To protect their anonymity, each participant was assigned a pseudonym for reference during the discussion of the findings.

Anna is an undergraduate Humanities student. Due to her diagnosis of endometriosis, her preferred menstrual products are DSPs and tampons, as she experiences a heavy flow.

Lebo is an undergraduate Humanities student who was diagnosed with both endometriosis and PCOS, which result in severe menstrual pain. She uses DSPs to manage her menstruation.

Katie is an undergraduate Humanities student. She uses DSPs for comfort, as she has severe sensory issues. She revealed that she once tried using a menstrual cup but decided to revert to DSPs. She mentioned that she burns her DSPs as a means of disposal, believing that this is a better method than allowing the products to end up in the ocean.

Olivia is a postgraduate Health Sciences student. She uses a combination of DSPs and tampons. As a dancer, she finds tampons easier to use when she is active, while opting for DSPs when she is at home.

Ayanda is an undergraduate Humanities student. Although she did not share her preferred product(s) for menstruation, she explained how overwhelmed she felt when she experienced menarche. This was primarily due to her not having received prior education on menstruation, as it was a topic never discussed at home. She also mentioned that she experiences extreme menstrual pain, which leads her to view menstruation as problematic.

Kaya is a postgraduate Humanities student and the only participant who actively used an RMP, specifically period panties, to manage her menstruation. She explained that she does not like using disposable tampons due to the discomfort they cause her.

Amelia is a postgraduate Health Sciences student who prefers disposable tampons for menstruation management. As an active individual who frequently goes to the gym, she feels more comfortable wearing a tampon while exercising.

Sophia is an undergraduate Humanities student who uses DMPs for their comfort, specifically opting for longer sanitary pads to prevent leakages. Diagnosed with PCOS, she experiences irregular periods and severe acne. She mentioned her willingness to try using reusable period panties and reusable pads.

Esihle is a postgraduate Natural and Agricultural Sciences student. Similar to Ayanda, she did not mention which menstrual product(s) she uses. However, she explained how scared she was when menarche occurred, revealing that she “thought she was dying” as she was only 11 years old at the time. Like Katie, Esihle burns her menstrual products, believing that it is better than them ending up in the ocean. Additionally, she explained that concealment is a major factor in her decision to burn her menstrual products, as it is seen as a disgrace not to dispose of them properly.

Anele is a postgraduate Natural and Agricultural Sciences student who uses DMPs to manage her menstruation because of their comfort. Although she has not yet used an RMP, she mentioned that she was willing to try them.

Lethabo is an undergraduate Humanities student. She uses DSPs during her menstruation for comfort. She is an activist for menstrual awareness and education, as conditions such as endometriosis and PCOS can be life-threatening, yet menstruators may not be aware of the associated symptoms.

Amina is an undergraduate Humanities student who uses DSPs to manage her menstruation. She shared her first experience with menarche, when she was in Grade 9. Thanks to her older

sister, she understood what was happening and did not panic. However, she also expressed feelings of hopelessness when considering menstrual waste.

Mila is an undergraduate Health Sciences student. Her preferred menstrual products are DSPs, as she fears getting an infection from disposable tampons. She holds a neutral perception of menstruation; she neither celebrates it nor views it negatively. Instead, she sees it as a part of growing up and becoming a woman.

Charlotte is an undergraduate Theology and Religion student who, similar to Sophia, uses DMPs for comfort and prefers longer sanitary pads to prevent leakage. She shared that she is in the process of purchasing period panties and is open to trying them. Additionally, she is uncomfortable using disposable tampons.

Bandile is an undergraduate Humanities student. She uses DSPs to manage her menstruation and mentioned that she burns her menstrual products. Although she is willing to try RMPs, she opposes disposable tampons, believing they would worsen her menstrual pain.

This overview of the participants provides insight into their overall feelings towards menstruation and various menstrual products. The following section offers a deeper analysis of the participants' attitudes towards menstruation.

4.3 Attitudes Towards Menstruation

Like ageing and death, menstruation is an inevitable natural phenomenon. Despite such natural and unavoidable occurrences, elements of stigma and shame may be associated with them. Altıntaş and Şahin (2025) conducted a study to evaluate the effects of attitudes towards ageing. They explain that stigma and shame stem from individuals developing certain attitudes towards ageing (i.e., inevitable phenomena) and internalising these negative associations due to exposure to societal expectations. This may lead individuals to experience feelings of anxiety, depression, inadequacy, loneliness, or social isolation. Similarly, if menstruators internalise these feelings, shame and stigma may contribute to their embodied experience of menstruation and create feelings of concealment and embarrassment. In addition to being an inevitable phenomenon, for some, menstruation may be ineluctable, which emphasises the inescapability of the embodied experience that intersects with pain, shame, and stigma. In this study, a diverse range of feelings emerged among the participants when asked about their experiences with and perceptions of menstruation. These feelings are grouped into four major themes: celebratory interpretations of menstruation, menstruation as

problematic, acceptance of menstruation, and ambivalent experiences of menstruation. This allows for a holistic analysis of the diverse range of feelings identified regarding menstruation.

4.3.1 Theme 1: Celebratory Interpretations of Menstruation

Three aspects were highlighted by the participants who viewed menstruation as a celebratory phenomenon: seeing it as natural, as an indication of good health, and as a precursor to the experience of pregnancy. These aspects are interrelated and allow for an appreciation of menstruation and the biological female body, as well as the ability to biologically create new life. The inability to menstruate is perceived as an indicator of poor health, as it is associated with a range of medical conditions, such as endometriosis, PMDD, PMS, and PCOS, which may also lead to infertility (Whelan 2022). Menstruation is therefore celebrated as it symbolises sexual and reproductive maturity (Cohen 2020).

Only a few participants viewed menstruation as a positive phenomenon. Anna viewed it as a privilege, stating:

“I think it’s a privilege to have a period because many, many women can’t get pregnant because they don’t have a period. So, I think it’s a privilege...”

Also viewing it positively from the perspective of possibly being able to get pregnant, Katie stated:

“... it symbolises the fact that we can have children and create life... Even if I’m not someone who wants to have a child, the possibility of being able to have a child should be positive. It should be like, ‘I might be able to create life one day because of this period that I’m having’.”

The views of these two participants correspond with those of the participants in a study conducted by Ismail, K. et al. (2016), in which one participant regarded menstruation as a blessing, while others viewed it as a natural process that indicates that the body is healthy and functioning as it should. Similarly, Hasson (2020) reveals that for some individuals, menstruation serves as both a literal and symbolic marker of sexual and reproductive health. A study conducted by Wall et al. (2018, p.3) found that most participants perceived menstruation as “a normal physiological process linked to reproduction”, describing it as “a gift from God which permits women to become pregnant and bear children, to give the gift of new life, to become mothers”. One participant in Wall et al.’s (2018) study stated that

“[m]enstruation means that the body is ready to reproduce”. This shows that some individuals regard menstruation as a natural and positive phenomenon because it is physical proof that the body can prepare for conception and, furthermore, possibly bring life into the world, which indicates reproductive health. A study conducted by Fennie et al. (2021, p.413), focusing on menstruators living in poverty in the Global South, showed that although most participants viewed menstruation negatively, some viewed it positively, stating they “were now women” because they experienced menstruation, thereby viewing menstruation as an indicator of maturity. Further linking menstruation to maturity, Wall et al. (2018, p.3) explain that Ethiopians commonly refer to this phenomenon as the “monthly flower” because “menstruation is like flowers. Flowering plants finally produce fruit. The same is true of girls after menstruation”.

Women’s connectedness with nature is emphasised as both female bodies and nature are “the source of life” (Brisson 2017, p.18) and the “giver of life” (Vijayaraj 2017, p.74). The natural environment is often referred to in deeply feminine terms, such as “Mother Nature”. It is believed that the natural world affects women’s bodies through cycles such as those of the moon and fertility (Brisson 2017). Cultural ecofeminism celebrates this link between the natural and the feminine, reclaiming menstruation – a phenomenon that occurs solely within biological females – as a connection to nature. Vijayaraj (2017) explains that women’s menstrual cycles coincide with nature’s cyclical and seasonal patterns, which further emphasises this connection with nature.

The celebration of menstruation is also found in various cultural and religious traditions. Kaya explained:

“I’m Ndebele, right. It’s, it’s rather sacred... because it’s such an intimate time...”

By honouring the womb in both the Qur’an and the Walking Qur’an (Blake 2023), the sacredness of a woman’s body is accentuated in the Islamic faith. Similarly, as explained by Kaya, menstruation is regarded as a sacred phenomenon, and individuals are encouraged to embrace this period. Cohen (2020) notes that menstruation is also valued in non-Brahmanical Hinduism, as menstruating individuals are sexually mature and capable of procreation. This aligns with the views of Anna and Katie, who asserted that menstruation signifies the transition from childhood to sexual maturity. Additionally, it indicates that one’s body is functioning correctly in preparation for conception, a privilege that not all biological females

experience. Despite some participants viewing menstruation as a positive experience, many participants framed it as problematic, which is discussed in the following section.

4.3.2 Theme 2: Menstruation as Problematic

Menstruation is often viewed as problematic due to two main aspects: the experience of severe menstruation-related symptoms, and the stigmatisation that is particularly prevalent in many cultural and religious traditions, which regard menstruation as dirty and impure. While PMS is a common occurrence among menstruators, some individuals suffer from conditions such as endometriosis, PCOS, and/or PMDD, which disrupt their daily lives both physically and emotionally. Additionally, stigmatisation can lead to negative feelings towards menstruation, with it being perceived as an unclean, repulsive, and polluting phenomenon (Olson et al. 2022, p.3). Furthermore, in some cultural and religious contexts, menstruation may be viewed as impure, which prevents menstruators from participating in various cultural and religious rituals (Cohen 2020).

The majority of the participants interviewed described menstruation as problematic. Esihle, Olivia, Kaya, Ayanda, and Lethabo indicated that they have viewed menstruation negatively since menarche, as they were unaware of this phenomenon before their first menses. This highlights the silence that preceded this inevitable experience in the lives of these girls. They stated:

“I was in grade five, so I thought I was dying... it was just very scary” (Esihle).

“I was terrified. I cried... This [was] too much for me” (Olivia).

“... before, my mom had the talk with me... But when it actually came, I was like, ‘What is this? Why am I feeling like this?’” (Kaya).

“I was overwhelmed with emotions that I couldn’t exactly identify... menstruation isn’t exactly a topic that was very discussed at home” (Ayanda).

“... It was I think more something that was ashamed of when I was younger...” (Lethabo).

Due to a lack of menstrual education, the narratives above illustrate the shocking “surprise” the participants experienced at the onset of menstruation. Esihle recounted that she was at school when her first menstruation began.

Without any menstrual products on hand and feeling too uncomfortable to share it with others, she kept it to herself and felt scared:

“I was at school and, like, ‘Okay, what’s going on?’ and I couldn’t, like, do anything until I got home. I think it was, like, the middle of the day... I was like, ‘Okay’, and I couldn’t even tell anyone because I wasn’t comfortable telling anyone... it was just very scary.”

Olivia, on the other hand, explained that, although she understood what was happening, she still felt scared and overwhelmed when it occurred, seeking comfort from her mother. Similarly, Kaya stated that her mother explained the process to her, but she still experienced feelings of shock and confusion when she started menstruating. In contrast to Olivia and Kaya, Ayanda received no prior education on menstruation, which left her feeling overwhelmed and confused. She mentioned that she had to educate herself on the topic using Google to familiarise herself with the possible symptoms and their management:

“I was confused initially, but... Google has everything these days, right? So, then I eventually, like, educated myself about it and then tried to familiarise myself with what I was experiencing.”

Menstrual education from a young age is very important, especially before menarche, as it allows menstruators to be as prepared as possible for this phenomenon. Additionally, feelings of fear and anxiety may be avoided, as menstruating individuals would understand what is happening to their bodies during menstruation and know how to manage it adequately. Furthermore, it is important to recognise that pain and discomfort are symptoms often experienced by menstruators that make menstruation quite unbearable. The global need to conceal menstruation results in specific embodied experiences for menstruating individuals, who are expected to practise “self-management and discipline” (Miller 2006, p.11 cited in Stephens-Chu 2025). Charlotte and Bandile, in particular, shared their painful experiences of menstruation, emphasising the pain, discomfort, inconvenience, and messiness they encountered:

“I wake up in the morning, I throw up, I can’t eat, I can’t sleep, my ankles are swollen, everything hurts, and I take painkillers but that doesn’t stop everything else” (Charlotte).

“I hate my periods. Honestly, I hate my periods because I hate being in pain. I feel like physical pain, like, slows me down. Like I can’t work. I have to be in bed, I have to take a bunch of pills just to feel a bit better and ugh, it’s just a lot... I feel like if it wasn’t for the pains, I wouldn’t mind it, like, I wouldn’t care for my periods as much as I do” (Bandile).

Bandile elaborated further:

“The scenario would be like me sitting on the toilet with like extreme pains, holding a bucket because, you know, like diarrhoea and I’m vomiting at the same time... When the pains get like really, really bad, I faint or like have like dizzy spells.”

Bandile’s and Charlotte’s experiences illustrate the contrasts that menstruators may encounter; some face little to no menstruation-related symptoms, while others endure extreme symptoms. Similar to Charlotte’s and Bandile’s experiences, a study conducted by Stephens-Chu (2025) explored the lived experiences of menstrual pain and found it to be common among menstruators. One of the participants in Stephens-Chu’s (2025) study described menstruation as a painful experience, suffering through cramps and relying on pain relief medication to cope. Approximately 6% of menstruators experience extreme symptoms (Clay 2023), including pain, diarrhoea, vomiting, and fainting. These individuals are likely to have PMDD, which disrupts their daily lives and prevents them from functioning normally when menstruating. This underscores the intensely embodied and disruptive realities faced by some menstruators, which overshadow any appreciation or celebration of the experience.

Bandile noted that she has visited the emergency room numerous times due to experiencing extreme menstruation-related physical symptoms, as mentioned above, but was quickly discredited, dismissed, and stigmatised by medical professionals:

“... downplaying it like, ‘Agh, it’s not that deep²’, or ‘She’s faking it’, or ‘She’s being dramatic’ and then they just give me, like, painkillers.”

This may be largely due to the normalisation of painful menstrual cramps, as explained by Wiggleton-Little (2024), which leads to the dismissal of patients who report experiencing painful periods. Menstrual pain is a legitimate health issue and should be treated as such. However, because emotional instability and pain have been recognised as inherent menstrual symptoms since the early 19th century, society has normalised this suffering (Wiggleton-Little

² A phrase used mostly by younger generations, such as Gen Z, to refer to something that is not very serious.

2024). This led Wiggleton-Little (2024) to refer to the concept of “pain-related motivational deficit”, which occurs when an individual’s pain report is acknowledged, but certain social norms, which normalise menstrual pain, cause the report to be minimised or diminished. Menstrual pain would otherwise raise concern, but due to patriarchal ideologies in society, it is ignored.

Bandile further explained that she was also stigmatised by classmates at school:

“... there was a time in ninth grade when I fainted... and some of my classmates were like, ‘Oh, you’re so dramatic. Oh, you’re faking it. You just want attention’ ...”

Linking the aforementioned two narratives to the reviewed literature, Olson et al. (2022) explain that menstruators are characterised as being “irrational” and “overemotional”, which leads to internalised feelings of embarrassment and shame, as well as the need to conceal anything related to menstruation, which forms part of the embodied nature of the experience. Additionally, the study conducted by Olson et al. (2022), which compares the dropping of a tampon to a hairpin, further emphasises the judgement experienced by menstruators when publicly displaying menstrual products. A connection can be made to socialist ecofeminism by highlighting the dismissal and ignorance of menstrual suffering. Just as the environmental degradation of “Mother Earth” is overlooked for profit, the menstrual suffering experienced by females is also downplayed, which leaves these individuals feeling shamed and embarrassed. Lebo shared how she was shamed for visibly displaying a sanitary pad at school:

“... my pad was kind of in my bag and my bag was a little bit open and it was showing. And literally our physics teacher... was like, ‘[Lebo], your pad is showing’.”

Interestingly, she mentioned that this teacher was not only female but also the deputy principal at the time, reflecting the complex nature of menstrual stigma, which is deeply rooted in cultural and social factors. Despite never experiencing stigma related to this, Katie shared her embarrassment about opening a disposable pad wrapper in a public bathroom, as the sound of the wrapper revealed that she was menstruating:

“I don’t know what it is that’s so embarrassing about opening a pad in the bathroom... I have a shame thing about it.”

The abovementioned narratives relate to a study conducted by Ismail, K. et al. (2016) on the constructed perceptions that young South African women have of menstruation, with the overarching theme of “dirtiness” that emerged. The following quotes were shared by three participants in Ismail, K. et al.’s (2016) study:

... you kind of feel dirty and you feel that something down there is not the way it’s supposed to be... why are you looking at me, I’m dirty... [Menstruation is] ... gross! All this blood and you have to work with it and you have to keep yourself clean otherwise you’re going to have a stench.

Because of the perceived dirtiness associated with menstruation, the participants in Ismail, K. et al.’s (2016) study felt the need to conceal their menstruation by taking precautions, such as adequately washing themselves, to ensure no one suspected that they were menstruating. Supporting this statement, one of the participants in Ismail, K. et al.’s (2016) study shared that “with red you can’t wish that away [and you fear] everyone is going to know ... and everyone will be like she didn’t protect herself and stupid for her because she wore white”. Olson et al. (2022) explain how menstrual products are advertised for their ability to suppress and conceal all odours, emphasising the need to keep menstruation a secret. Moreover, most menstrual product marketing highlights the notion of staying “fresh”, thereby associating menstruation with being unsanitary (Olson et al. 2022). Lebo and Katie expressed feelings of embarrassment and shame regarding public displays of menstrual products. They also agreed that menstruation was perceived as a shameful phenomenon:

“... It’s a shameful thing...” (Lebo).

“It’s a very shameful thing” (Katie).

Another participant, Charlotte, shared how, when she was growing up, she felt pressured by her family to hide her sanitary pads when she lived with them:

“If I go to the store with my mom and it’s like, ‘No, you need to be discreet, you need to hide it’. I’m going to buy pads, I’m not ashamed to go buy pads. And that’s sort of a big stigma that was around when I lived with my parents... I couldn’t even have my pads on my table in my room because why, why can people see it?”

It is interesting to note that despite Charlotte’s mother instilling in her the need to hide her sanitary pads, Charlotte did not feel it was necessary. She deliberately went against what she was taught about keeping menstruation hidden.

Accordingly, it becomes clear that although Charlotte has internalised these lessons, she intentionally rebelled against them by choosing to resocialise herself:

“So, when I was younger, yes, I experienced that but now that I’m older, I could not care less.”

Instead, Charlotte is very open about menstruation and does not feel the need to hide it; she does not care whether others see her purchasing menstrual products. She further advised that more awareness should be raised regarding menstruation, menstrual health, and menstrual inequalities:

“I just have a comment, and I just feel like if anyone could do anything, whether it’s publishing something, whether it’s speaking out about it, whether it’s going on a conference, whether it’s saying something... women everywhere are suffering. Just because I can afford it now, doesn’t mean I don’t know what it feels like to not be able to afford it [referring to the ability to buy proper sanitary products].”

Some participants revealed that a major factor that contributed to their negative perception of menstruation was the stigma and taboo associated with it. Not only did some experience menstrual stigma at school from peers and teachers, but also from family members at home. Katie disclosed that she faced menstrual stigma at home from her father, who was uncomfortable with “women’s problems”. She stated:

“... for me with my dad... he’s quite misogynistic... so there, there’s a lot of stigma around menstruation for him.”

Katie further explained that because of her father’s misogynistic nature, she was expected to hide her menstruation and everything related to it. However, her mother supported her through this by standing up to her father, which helped her tremendously:

“... my mom was basically countering my dad every single time one of us had our periods, me and my sister... she would be loud and proud about it, um, if I did announce it was my period, and, um, my dad would be like, ‘No, you can’t tell people that type of thing’. And, um, ‘You need to wear things that like, don’t show whatever’ and if I bled through then there was a whole other story... but my mom was my champion in that regard.”

Similar to Katie's experience, in Ismail, K. et al.'s (2016) study, they used an in-depth exploratory methodology to discover the perceptions of menstruation and found shame as a social control to an overarching theme. Two of Ismail, K. et al.'s (2016) participants shared the following: "...with my dad...[believing] I'm small...when I even mention the word period then it's like malfunction really... like he short circuits" and "[with a man]...I don't want him to know about [it when it occurs]..."

Vora (2020) supports the view held by many men regarding menstruation by explaining that women differ from men: women menstruate, men do not. Due to deeply rooted patriarchy and misogyny, the "normal" body is characterised as one that does not bleed, despite menstruation being a naturally occurring phenomenon that indicates reproductive health. Interpreted from a radical ecofeminist context (Merchant 2005), both the natural environment and menstruating individuals are oppressed and degraded because of entrenched patriarchal beliefs, as Katie experienced at home with her father. Furthermore, IE, which has a broader focus on marginalised groups and social injustices (Thomas 2022), advocates for both environmental and social justice to overcome these systems of degradation and oppression.

Regarding menstrual stigma experienced at school, Anele and Charlotte admitted to having experienced this, stating:

"Growing up, in school... boys were taught that it's something nasty..." (Anele).

"I think it also felt a bit embarrassing because in younger grades and in younger schools it's like, 'Oh my gosh, you have your period'..." (Charlotte).

Menstrual stigma may significantly impact the daily lives of menstruators, leading some schoolgirls to skip school to avoid being stigmatised while menstruating (Olson et al. 2022). Rueckert (2018) estimates that one in 10 girls in Africa regularly skips school in a given year due to menstruation. Furthermore, one in five girls in India drops out of school after menarche because of menstrual stigma, which heavily impacts their future (Rueckert 2018). Additionally, menstruators from disadvantaged backgrounds, particularly in the Global South, may have no choice but to skip school due to an inability to manage menstruation that stems from socio-economic circumstances.

While some religions view menstruation positively and celebrate it as a sign of sexual and reproductive maturity, other religious traditions hold negative views regarding menstruation.

The participants, discussing these negative religious traditions, highlighted the themes of dirtiness, impurity, and shame.

Bandile, referring to traditional orthodox Christianity, and Charlotte, referring to Hinduism, indicated the following:

“... at home and in my community, how we were socialised was we were taught that, you know, being on your period is dirty... you’re not even allowed to go to like the altar, like, where we pray because you’re dirty when you’re on your menstruation” (Bandile).

“... certain cultures tend to have, um, ceremonies and what not, you know, in order to preserve the culture, etc. So, if you’re on your period, you’re actually not allowed to partake... It makes you feel a bit isolated...” (Charlotte).

Cohen (2020) highlights how the perception of menstruation as an impure phenomenon can culturally and religiously affect individuals. In this regard, Charlotte said:

“When I was younger, if we participated in, let’s just say fasting or something like that, I wasn’t allowed to because I was on my period... because you’re viewed as unclean on your cycle and it’s not seen as pure, therefore you can’t participate in any religious activities, like prayer sessions or fasting.”

Regarding cultural and religious views of menstruation as dirty and impure, Lebo, Bandile, and Charlotte, mentioned the following:

“... when you’re on your period... they say that you’re dirty” (Lebo).

“... at home and in my community, how we were socialised was we were taught that, you know, being on your period is dirty” (Bandile).

“... my parents are Hindu, but I’m Christian, and I know that many people in the Hindu community view you as unclean when you’re on your period. You’re not as holy as you would be if you weren’t bleeding” (Charlotte).

Lebo further mentioned how stigmatising menstruation was within her religious culture:

“It’s heavy in African spirituality – the stigma of being dirty and unpure...”

The idea of menstruation being viewed as a dirty phenomenon is supported by Olson et al. (2022, p.3), who state that this degrading experience is “bloody, leaky, [and] messy”.

Relating to the beliefs about menstruation as dirty and impure, existing literature draws a strong connection between sexism, misogyny, and religion. Wall et al. (2018) note that among orthodox Christians and Muslims, menstruating individuals are considered ritually impure and should be excluded from religious activities, such as entering the church or mosque and touching sacred objects like the Bible or the Qur'an, holy water, or a cross. These beliefs legitimise sexist exclusion from cultural or religious activities and contribute to a broader system of misogynistic power by framing women's bodies as repulsive, sullied, and unhygienic (Olson et al. 2022).

Moreover, regarding menstruation being viewed as a sin and/or punishment from God, Lebo and Mila expressed shared feelings:

"... in my opinion... when you view, um, Eve getting periods as the punishment that God gave... for disobeying His work... That is why everything is unholy because we are being punished... In African spirituality... You're being punished by God when you're on your period" (Lebo).

"... after Eve ate the apple, um, God said labour will be painful and hard and along with labour, menstruation also goes..." (Mila).

The abovementioned narratives align with Ismail, K. et al.'s (2016) study as two participants also related menstruation to "sin" and "punishment": "I hate [it,] I don't want it, it's a sin [and if not for the devil] ... I would have been like that" and "... it's like added punishment because not only do you bleed, then you still get pimples ... pain, pimples, heightened libido, what else, don't torture me to the max".

These comments from four different participants are intriguing as they contradict what is mentioned in the reviewed literature. Bauman (2022) explains that, from a traditional orthodox Christian perspective, menstruation is viewed as sacred and a gift from God. This perspective arises from the belief that menstruating individuals have the potential for procreation, thereby continuing the cycle of preaching the word of God to their children, who can then preach His word to their children, and so forth (Bauman 2022). However, Lebo and Mila perceived menstruation as a punishment from God because Eve, identified as a biological female in biblical scriptures, ate fruit from the "forbidden tree". It is noteworthy that both Lebo and Mila shared this view despite their contrasting religious beliefs. Lebo, an African spiritualist, believes in material and spiritual gods, while Mila, a traditional orthodox Christian, believes in an omniscient and omnipresent monotheistic God (Kanu Ikechukwu

Anthony 2011). Despite African spirituality incorporating elements of Christianity, it is not necessarily aligned with traditional orthodox Christian views on menstruation. In Christianity, menstruation is seen as sacred; however, in African spirituality, according to Lebo, it is characterised as a dirty and impure phenomenon. When a Christian menstruates, she is not prohibited from attending church, whereas, in African spirituality, as Lebo and Bandile mentioned, one is prohibited from lighting candles and entering sacred sites. It is important to note, however, that there is a vast variety of cultural groups that all form part of African spirituality. Kaya, who is Ndebele³, explained her contrasting perspective and belief regarding menstruation. Although she mentioned that she was not raised in authentic African spirituality, it was never seen as dirty or a punishment from God. Instead, women are viewed as being closer to God; therefore, when menstruating, they are regarded as powerful and being even closer to God:

“... African spirituality, in its authenticity, women are viewed as mostly closer to God... And more, especially when they’re on their periods, they’re viewed as more powerful, more closer to God... A woman’s period is actually celebrated, respected. It’s sacred, and women are seen to be more powerful when they are on their period.”

Kaya explained that her belief was that certain African spiritualists, such as Lebo, viewing menstruation negatively was a case of African spirituality being entangled with Western religious beliefs, which also leads to the fusion of (some) Christian beliefs:

“... when you find a person that sees African spirituality, sees periods in a negative light, usually it’s the case of African spirituality being infused with Western beliefs or Western religious beliefs... [and] it has been fused with some Christian beliefs ... In African spirituality, purity does not necessarily exist. Purity, from what I’ve learned, came from Western religious influences to being pure or impure.”

This further illustrates the complexity of menstruation, not only from a biological and social perspective but also from a traditional one. Additionally, Lebo mentioned that she believed the shame associated with menstruation stemmed from menstruating individuals themselves and their socialisation into menstruation.

“I think the shame actually came from the women. They, I think, they were taught to be shameful about it and then they kind of just keeping the shame going...”

³ A specific cultural and ethnic group of African spirituality in South Africa.

This is an intriguingly complex cycle through which Moloney (2010) explains that girls are taught from a young age that menstruation is a shameful and secretive phenomenon. This leads them to pass these feelings on to their own children (especially girls), which perpetuates this archaic approach to menstruation. However, most of the study participants have unlearned, or were in the process of unlearning, these negative cultural and religious connotations related to menstruation and were breaking away from the ways they were socialised to perceive it.

Expanding on this, Bandile, Charlotte, and Lebo expressed the following:

“I have sort of like been breaking away from some of the religious norms that were taught to me back home because they didn’t really portray women in a positive light” (Bandile).

“When I was younger, if we participated in, let’s just say fasting or something like that, I wasn’t allowed to because I was on my period... So, when I was younger, yes, I experienced that but now that I’m older, I couldn’t care less” (Charlotte).

“I will respect [African spirituality], but I think I never, I didn’t internalise it” (Lebo).

Like these participants are breaking away from cultural and religious menstrual stigma and taboo, socialist ecofeminists emphasise the need to break away from environmental degradation by actively taking measures to protect the environment, thereby bringing about ecological justice.

This section highlighted the different cultural and religious views of menstruation, whether positive or negative, as experienced by the participants. Not all participants had a predominantly positive or negative experience with menstruation; some viewed it as a naturally occurring phenomenon and dealt with it as it came, as discussed in the following section.

4.3.3 Theme 3: Acceptance of Menstruation

Due to the complexity of menstruation, one may not be particularly inclined to view it in strictly positive or negative terms, but rather as a natural occurrence in the biological female body. This perspective may arise from various factors, including normalisation through experience. As it becomes a routine that occurs monthly, menstruation assumes a neutral

social framing –neither a shameful nor sacred phenomenon. In the absence of severe symptoms, it implies minimal interference with one’s daily life.

Some participants, including Amelia, Mila, Olivia, and Sophia, perceived menstruation as neither positive nor negative, but as a natural monthly occurrence in the biological female body:

“I would say I’m very neutral now... As you grow up and you, you find what works for you, um, it becomes a lot easier” (Olivia).

“I don’t think I give really a second thought. It just, it happens, and I deal with it... It’s just, I don’t know, I just, it’s a part of life and you just deal with it” (Amelia).

“I feel like it’s just a part of, it’s just a part of life now. Like I, if something happens now, I’ll deal with it. Um, I don’t have terrible symptoms like that, but if I do have something, then it’s a thing of like, ‘Oh, okay, I’ll deal with it. This is just what happens’” (Sophia).

“I don’t really think I see it as good or bad. Like we didn’t really celebrate it, but, um, I don’t think it’s bad. I think it’s part of growing up and becoming a woman” (Mila).

These participants revealed that they had received prior education on menstruation-related topics, which allowed them to have sufficient awareness of this phenomenon. Additionally, they admitted to having experienced no stigma or period poverty, as well as little to no PMS, which made it easier for them to manage their menstruation.

Grounded in ecofeminist thought, neutrality may reflect a cultural disconnection from both nature and the body, as these participants viewed menstruation as a biological function that is neither celebrated nor stigmatised. If these participants were to view menstruation through a cultural ecofeminist lens, they might develop a different perspective on menstruation – one that offers a deeper appreciation and recognition of this complex phenomenon.

Lastly, a few participants had ambiguous experiences with menstruation and mixed feelings about this phenomenon, as outlined in the next theme.

4.3.4 Theme 4: Ambivalent Experiences of Menstruation

Because menstruation is such a complex phenomenon, it is not always viewed as strictly positive or negative; rather, it is seen as ambivalent, encompassing complex and contradictory experiences. Some menstruating individuals may experience disruptive

physical symptoms, such as pain, yet still perceive menstruation as evidence of a healthy body that is capable of preparing for conception. Consequently, despite the painful symptoms they may endure, they can still appreciate menstruation. Some participants, including Kaya, Esihle, Lethabo, and Charlotte, had both positive and negative experiences and perceptions of menstruation. While they recognised it as a physical sign of a healthy and functioning body, they also contended with menstruation-related symptoms that may be inconvenient. They shared the following insights:

“In the beginning it was an inconvenience. It was really nothing nice, but now... I regard it as a beautiful thing. You feel grateful that you actually get to experience this and you don’t have any other issues” (Kaya).

“The first two days are negative. I get pain in my back. And there’s some point where I can’t even, like, stand. So, now I have to drink painkillers so that the pain can go away. That’s positive and negative” (Esihle).

“It’s a topic that a lot of people don’t want to actually address that [it] is a very difficult time for us, well the first two days, obviously. So, I... good and bad” (Lethabo).

“It’s positive and negative. I understand it means your body is functioning correctly... But the intensity... I feel disabled when I’m on my period. I feel like I can’t go do anything” (Charlotte).

Charlotte elaborated further:

“Positive is, you know what, you’re becoming a woman, that’s great, love that for you. But negative is, it’s extremely painful and also the resources available to limit the pain [are] extremely expensive.”

Overall, these participants shared similar sentiments regarding their views on menstruation, seeing it both positively and negatively. They perceived it as physical proof that their bodies were functioning as they should, yet they also experienced pain that disrupted their daily lives. Through the lens of radical ecofeminist theory, Plumwood (1993) explains that, akin to the dual feelings of love and fear towards nature, menstruators may both honour and resent menstruation due to these contrasting emotions and experiences. Plumwood (1993) describes how both nature and femininity (women) are idealised and sacred – pure, life-giving, and

nurturing – while also being demonised and feared – chaotic, threatening, and impure – highlighting their representation as contrasting sites of purity and pollution.

Stephens-Chu (2025, p.2) adds that in many societies worldwide, particularly in Japan's traditional indigenous religion, Shinto, menstrual blood is regarded as “ritual pollution”, which extends to the female body being associated with this view. Similarly, ecofeminism acknowledges how society both glorifies and stigmatises menstruation, perceiving it as powerful and pure, while also viewing it as dirty and impure, especially from a cultural and religious perspective.

Cohen (2020) states that menstruation is viewed as a sacred power in non-Brahmanical Hinduism as it symbolises protection, purity, and strength. Although Lebo explained how her religious tradition of African spirituality views menstruation as dirty and impure, she also mentioned how contradicting this phenomenon is within this tradition as it is also a symbol of power:

“They believe that period blood is, is very, um, powerful, spiritually, and there are some practitioners, like traditional healers, who will even steal pads from dustbins and stuff to bewitch people.”

The abovementioned quotation corresponds with a study conducted by Roxburgh et al. (2020), in which the participants explained how some individuals used menstrual blood from DMPs to bewitch others and cause them harm.

Not only are the experiences and perceptions of menstruation important to review among university students, but also their awareness of and concern for the environment regarding menstrual products, as discussed in the following section.

4.4 Environmental Awareness of and Concern with Menstrual Products

The majority of the participants were aware of and concerned about the environmental harm caused by menstrual products, particularly DMPs. Despite this awareness, only a minority of the participants indicated that they actively took measures to reduce menstrual waste. Furthermore, most participants relied on disposable pads to manage menstruation, which contain over 90% plastic (Aujla et al. 2024). A single disposable pad may contain as much plastic as three carrier bags, and the average menstruator will require approximately 11 000 pads over a lifetime (Moodley 2023). This section is organised into two key themes: green minds versus indifference, and managing the flow: menstrual product preferences.

4.4.1 Theme 1: Green Minds Versus Indifference

Despite the majority of the participants expressing concern for the environment, particularly regarding DMPs, they admitted to not actively engaging in efforts to reduce menstrual product waste. Lebo mentioned that she would not consider using RMPs because she felt dirty during menstruation. She expressed that using RMPs would make her feel even dirtier, as she would constantly worry about whether she had washed, for example, the menstrual cup correctly:

“I don’t, um, like pollution. No one actively vouches for pollution... I don’t think I’d be able to use the more sustainable products like a cup... because I still have that internalised feeling of being dirty on my period, I unfortunately [giggles] cannot be part of the solution when it comes to that..”

When asked about their feelings towards menstrual waste, Amina and Anele expressed shared feelings of helplessness:

“It’s just sad, I don’t know, and kind of helpless” (Amina).

“I’d echo that and say helpless because you’re only one person, what can you do?” (Anele).

Although they felt that their contribution to reducing menstrual product waste would not make a difference, every unused DMP could help effect change, as menstruators in South Africa produce 52.4 million kilograms of sanitary product waste annually (Moodley 2023). Menstrual product waste is a type of solid waste that causes soil and water pollution when harmful substances, such as chemicals and plastics, leach into the soil and run off into water. Increasing solid waste streams also contribute to higher greenhouse gas emissions (mainly methane), and climate change is a consequence of these rising emissions.

Muralidharan et al. (2025) explain that DMPs have higher carbon emissions along the value chain, from the sourcing of raw materials and manufacturing to usage and end-of-life treatment as waste products, compared to RMPs. This is because the manufacturing of DMPs is energy-intensive and requires the use of harmful chemicals and fossil fuels for production activities (Muralidharan et al. 2025). It is also important to consider the transportation of DMPs between countries, as these products carry a heavier carbon footprint due to their widespread use compared to RMPs (Muralidharan et al. 2025). Opting to switch to more

sustainable options, such as RMPs, could therefore make a long-term difference, and an even bigger impact if there is a groundswell of interest to do so.

However, due to the complexity of menstruation, it is not necessarily simple for menstruators to switch to using RMPs. Several factors, namely cultural, practical, psychological, and social, may prevent menstruating individuals from making this switch. Many individuals who live in poverty do not always have access to adequate sanitation facilities, including clean water, privacy, and functioning toilets, which hinders their ability to use RMPs in a sanitary manner. Additionally, these individuals may lack the financial means to purchase RMPs, as they represent more expensive once-off purchases. Furthermore, there may be a lack of awareness and education regarding these products, resulting in menstruators not understanding the options available to them. Culturally, socially, and psychologically, many menstruators have been taught to use DMPs as the sole means of managing menstruation in their households. Moreover, feelings of shame and embarrassment may increase when cleaning or drying an RMP, as menstruation is often viewed as a dirty phenomenon. This highlights the complexity of behavioural change needed to influence environmental change.

Despite their concern for the environment, Katie and Esihle indicated that they burn their DMPs:

“We have our own, like, garbage disposal system, where we, like, burn everything. And I know that does produce methane, but I feel a little bit better about that than just, like, having it, like, in the oceans and all of that stuff” (Katie).

“I opted to burn them, and they burned, yes, but still at the same time it’s affecting the environment...” (Esihle)

Although some individuals believe that burning these products is more environmentally friendly than disposing of them in dustbins, this may not be entirely accurate. Roxburgh et al. (2020) highlight that, despite many menstruators preferring to burn menstrual products, this practice is harmful to both the environment and human health. Burning DMPs releases carcinogenic fumes (Roxburgh et al. 2020), which, if inhaled by nearby living organisms, could lead to harmful consequences. Esihle explained that, in addition to environmental concerns, an element of concealment drove her to burn her menstrual products, as it was considered “disgraceful” at home to not adequately dispose of them:

“There is an element of concealment especially because it’s considered disgraceful, especially at home, to not properly dispose of menstrual products...”

Additionally, similar to Lebo's traditional belief of individuals using DMPs to bewitch others, Esihle burned her products to ensure safety, so that no one can use them for evildoing:

"... in terms of traditional belief, we believe that if we don't dispose of it properly, someone may use it for evildoing."

Although Katie also burned her menstrual products, her reasons were different from Esihle's. She explained that her family burned all their rubbish, which made it the easiest method to dispose of her menstrual products:

"My family is able to burn all our trash, so the easiest is to put the menstrual products with the trash already being burned."

Katie did, however, mention that there was a sense of concealment during menstruation as her father would not want to know when this phenomenon occurred:

"There's a sense of concealment when I'm physically on my period as the men would not want to know it's happening, but disposal after the fact is not hidden."

Kaya mentioned both her concern for the environment, as well as actively participating in reducing menstrual product waste. She revealed that her motivation for using RMPs was due to the difficulty of recycling and product biodegradability:

"I started exploring with, uh, period panties as well considering, um, the environment as well, 'cause I started learning to see that it's quite difficult to recycle or biodegradable... So, that's when I started experimenting with period panties and... they've been okay."

RMPs, including reusable pads, period underwear, and menstrual cups, are less harmful to the environment, as they are claimed not to contain any harmful chemicals that may act as endocrine disruptors (Khorsand et al. 2023). This is an important consideration, as these disruptors enter water resources, are ingested by animals and insects, and are absorbed by plants. Additionally, DMPs create significant challenges in menstrual waste management, particularly in the Global South, where many low- and middle-income countries are located. Many menstruators in these regions resort to burning or burying their menstrual products or disposing of them in latrines, which negatively impacts air and soil quality (Del Duca and Liera 2023).

Moreover, RMPs are reusable, which makes them a more environmentally sustainable option for managing menstruation. Since only one participant indicated that she actively contributed to reducing menstrual waste by using RMPs in the form of period panties, it is important to understand which menstrual products the participants preferred and why. This is discussed in the following section.

4.4.2 Theme 2: Managing the Flow: Menstrual Product Preferences

The way individuals manage menstruation differs due to the wide variety of products available on the market, which cater to individual preferences and menstrual flow. Among DMPs, there are various brands and sizes of pads, panty liners, and tampons. Similarly, there are different brands and sizes of RMPs, with menstrual cups and discs, period panties, and reusable pads being the most common. Although the majority of the participants preferred using DMPs, particularly pads, mainly due to comfort, a study conducted by Kubovski and Cohen Shabot (2024) on menstruators in Israel indicated that most participants using RMPs would not wish to revert to DMPs. This is attributed to the positive feelings they experienced while using RMPs, including acceptance, comfort, confidence, positivity, and understanding (Kubovski and Cohen Shabot 2024). Similarly, a study conducted by Owen (2022) revealed that the majority of participants would continue using RMPs as their preferred menstrual product. This preference stems from their education on how to effectively use RMPs, which highlights the importance of awareness and education in assisting menstruators to switch from DMPs to RMPs. However, globally, DMPs remain the most preferred menstrual product and are considered the norm (Owen 2022). Regarding comfort, Anele, Lethabo, Sophia, Charlotte, Katie, and Mila shared the following:

“I specifically use, um, pads... and I just felt comfortable using them” (Anele).

“It’s also just comfortable” (Lethabo).

“I use Always... They don’t leak and they’re very... they’re very comfortable” (Sophia).

“I usually go with Always... In general, just comfortability and I always prefer a bit of a longer pad to prevent leakages” (Charlotte).

“My preferred brand is Kotex. Kotex does not have any carcinogenics and it’s moderately comfortable because I have, like, severe, severe sensory issues” (Katie).

“Lil-Lets... I prefer pads. I don’t really like using tampons” (Mila).

Interestingly, Katie preferred using a specific brand because, according to her, it is said to be free from carcinogens, which shows her trust in the brand. However, it may not be factually correct that the products are free from cancer-causing chemicals and materials. This is because what is labelled on the packaging is not necessarily what is included in the product itself. These insights correspond with a study conducted by Mamavation and Environmental Health News (Kluger 2023), which tested the percentage of PFAS (per- and polyfluoroalkyl substances, which are known as “forever chemicals” because of their remarkable durability) in DMPs. They found that out of the 22 products that tested positive for PFAS, 13 were advertised as being “organic”, “natural”, “non-toxic”, “sustainable”, or used “no harmful chemicals” (Kluger 2023). Moreover, Scranton and Women’s Voices for the Earth (2022) found that many brands and products provide vague information about the ingredients used in the manufacturing of their products on the packaging. What is listed on the packaging may therefore not actually be an active ingredient, or harmful ingredients may be used that are not disclosed on the packaging. This relates to “greenwashing”, which is a term used to describe the practice of promoting environmentally friendly products to divert attention from an organisation’s misleading and environmentally unfriendly activities (De Freitas Netto et al. 2020).

Only a few participants indicated using tampons (Olivia and Amelia). Some participants, including Mila, Charlotte, Bandile, and Kaya, mentioned having a fear of using tampons due to comfort and hygiene issues:

“I feel like we’re not made to put something in our body that’s not meant to be there, so I prefer to just not use it... The fear of getting, like, an infection... just overall hygiene, I feel like it’s better to not use it” (Mila).

“I don’t use tampons. It’s just not something I’m comfortable with” (Charlotte).

“With tampons, because, like, I experience these pains, I kind of feel that, like, when I have a tampon in it’s, like, ‘Oh, gosh, is it the tampon... That’s making my pains worse?’” (Bandile).

“It was an uncomfortable feeling for me...” (Kaya).

With regard to RMPs, such as menstrual cups and discs that must be inserted, most participants believed them to be uncomfortable and unhygienic. Since these types of RMPs only need to be removed every six to 12 hours and collect blood rather than absorb it, Owen (2022) explains that the main barrier to using them is the direct encounter with menstrual

blood, as all the expelled blood is collected in the cup. However, Owen (2022) highlights that this experience may differ between menstruators; some participants in her study saw it as a useful and liberating experience, while others found it uncomfortable and chaotic (Owen 2022).

Regarding the discomfort and issues surrounding the sanitation of RMPs, Lebo, Anele, and Charlotte shared the following:

“This is what the issue is with the diva cup [menstrual cup] is, like, we don’t like that it’s uncomfortable” (Lebo).

“It doesn’t have that sense of security that a pad would give me” (Anele).

“I also feel like if the eco-friendly options were a little more friendly... If we could come up with something that is comfortable for everyone...” (Charlotte).

Despite the majority of the participants not wanting to try RMPs, a few expressed their willingness to do so. It may take a few cycles to adjust, as the insertion and removal of a menstrual cup differ from DMPs, and because they are reusable, they must be cleaned in a specific way. Similarly, period panties may also require a few cycles to get used to. Owen (2022) found that once participants became accustomed to the menstrual cup, they did not switch back to disposables due to convenience, broader feminist issues (such as embracing the feeling of being a woman and women’s empowerment), forgetting (the concept of menstrual minimisation, as the cup can be used for up to 12 hours at a time), environmental sustainability, and thrift (financial sustainability). Moreover, as previously mentioned, Kaya shared that she used period panties to manage menstruation, reduce menstrual waste, and minimise environmental harm because they are reusable and therefore sustainable, and are said to contain no harmful chemicals. Regarding their openness to trying RMPs, Charlotte, Bandile, Sophia, and Anele shared the following:

“I have considered using more eco-friendly sustainable sort of products. I mean, at the moment I’m in the process of purchasing these things called period panties” (Charlotte).

“I would consider that” (Bandile).

“The period panties and maybe reusable pads, I would also try that...” (Sophia).

“But I wouldn’t be objecting to trying it” (Anele).

Katie explained that she had tried using a menstrual cup, but it did not work for her because inserting and removing it were too difficult. As noted by Owen (2022), it takes a few cycles to become accustomed to the menstrual cup. Additionally, it is important to raise awareness and educate menstruators about how to use and clean RMPs, as this will facilitate the transition from DMPs to RMPs. However, Katie only tried the cup once; had she attempted it for a few more cycles, she might have become accustomed to it. She did not mention receiving education on using and cleaning RMPs, which may have contributed to her discontinuation of using the menstrual cup. Furthermore, she stated that cleaning the menstrual cup was too tedious, as it must first be boiled to sterilise it before reinserting it:

“That’s why I initially bought the diva cup, like, not for comfort reasons or anything like that, I really wanted to see if I can produce less waste... I did try a diva cup, but like the inserting and [extracting], it’s like, it’s very difficult and also the cleaning...”
(Katie).

Bildhauer and Owen (2023) explain that RMPs promote environmental sustainability as they claim to be free from plastic and harmful chemicals commonly used in the manufacturing of DMPs. Additionally, RMPs may help alleviate feelings of shame and embarrassment, thereby promoting menstrual confidence. Kubovski and Cohen Shabot (2024) found that menstruators who used RMPs reported improved experiences of menstruation, greater acceptance of their bodies, and increased confidence. However, because most DMPs contain harmful chemicals, there may be potential health implications for menstruating individuals, as discussed in the following section.

4.5 The Potential Health Implications Associated With Menstruation and Menstrual Products

It is important to discuss the potential health implications associated with menstruation. Because of the expectation of concealment, many individuals suffer silently. Some participants, including Anna, Lebo, and Sophia, experienced incurable menstruation-related health issues, such as endometriosis and PCOS, which made menstruation difficult to deal with:

“Okay, I have endometriosis... When I first got my period ‘til now it was, like, pain and heavy bleeding... And I get nauseous...” (Anna).

“I have, um, endometriosis and, um, cysts... I used to always complain about my painful periods... There was a time when I was writing, I remember, one of my finals, and I was in so much pain, and I was actually crying while writing... It was debilitating pain” (Lebo).

“I am polycystic... we went to get tested... Because of the irregular periods and the really bad acne...” (Sophia).

Like endometriosis, the causes of PCOS are unknown, and it is incurable. However, endometriosis may be accompanied by intense pain. Fortunately, there are steps that can be taken to alleviate this pain, including medication in the form of birth control, which Anna, Lebo, and Sophia reported taking. Furthermore, some participants mentioned the potential health implications associated with menstrual products. In this regard, Katie and Anele stated:

“Some brands of, uh, pads and tampons have carcinogenics in them, and it’s so freaking scary because carcinogenics have like, it can cause cancer...” (Katie).

“You think of the materials that they’re made of, if they’re affecting the environment like this, how are they affecting your body as well?” (Anele).

Anele further explained:

“You know plastic is toxic and a lot runs through the human body, so, then you also have to think about, well, if it’s causing this much damage to the environment, what is it doing long term to my body? And you’ve been using menstrual products for who knows how long? So, now you also start to wonder has it had this sort of effect. Has, have the effects started yet or what are the effects? Are there going to be any effects?”

The abovementioned narratives align with the findings from the study conducted by Khorsand et al. (2023), which state that the chemicals used in the production of most DMPs are carcinogenic. Ghadyalpatil (2023) found that DMPs contain dioxins, which are similar to carcinogens and encourage the creation of cancer-causing cells in the body. These dioxins could accumulate in the body and affect women’s reproductive organs, potentially causing cervical or ovarian cancer. Marroquin et al. (2024) state that because DMPs contain substances that are found in cleaning supplies and adhesives that contain volatile organic compounds (VOCs), DMPs may also contain VOCs, several of which are human carcinogens. In addition to containing VOCs and dioxins, fragranced menstrual products contain chemicals, such as phthalates and synthetic musk, which may act as endocrine

disruptors (Marroquin et al. 2024). Moreover, the Pesticide Action Network UK, the Women's Environmental Network, and the Pesticide Collaboration (Horton 2025) found that DMPs contain glyphosate, a pesticide linked to cancer. They detected 0.004 mg/kg of glyphosate in one box of tampons, while the maximum residue level for drinking water is 0.001 mg/kg in the United Kingdom and European Union (Horton 2025). This level is 40 times higher than the authorised levels of glyphosate in drinking water. This is alarming because even small traces of chemicals absorbed vaginally directly enter the bloodstream and bypass the body's detoxification processes (Horton 2025).

However, this is unknown to many menstruators, as the participants who used disposable products believed them to be the most hygienic and safest menstrual option. Approached from an ecofeminist standpoint, this reflects how menstruators' bodies, similar to the environment, are treated as disposable sites for pollution. Deri (2025) states:

Menstruation isn't dirty – our perceptions of it are. By masking these perceptions with disposable products, we've created a far dirtier environmental reality. It's time to stop hiding, not just from our periods, but from the consequences they are wrapped up in.

Socialist ecofeminism advocates for both ecological and reproductive justice and promotes the use of RMPs, which are safer for the human body, sustainable, biodegradable, and non-toxic alternatives (Khorsand et al. 2023), thereby respecting both environmental and bodily health.

Some participants, including Lethabo, highlighted the importance of education on menstruation-related health issues, as many individuals are unaware of the extreme symptoms that can be life-threatening. Helosvuori and Oikkonen (2024) emphasise that healthcare professionals often dismiss endometriosis-related pain as normal menstrual pain and neglect further testing and treatment. Expanding on this, Lethabo and Ayanda stated:

“Downplaying, um, symptoms that could be severe, and just saying it's period pains... Because people have, like, PCOS or endometriosis. Those are like life-threatening, diseases that societies just made seem to be, like, 'No, no, you're fine.' So, I feel, um, society as a whole should be educated to look out for these things and know the difference between normal and abnormal...” (Lethabo).

“I haven't exactly been diagnosed with endometriosis, right? But I do experience, like, terrible period pains...” (Ayanda).

The two aforementioned quotations summarise the stereotype associated with menstruation-related symptoms: societies downplay the possibility of serious health issues related to menstruation. This is especially prevalent in the Global South, where early diagnosis and effective treatment options may be limited due to a lack of adequate resources or restricted access to these resources owing to widespread poverty and socio-economic deprivation (Lehaha 2023). Informed by socialist ecofeminist thought, similar to the way environmental degradation is often overlooked, menstruation-related health issues are also dismissed or downplayed; yet they are ineluctable. Just as the environment is “just there”, menstruation occurs naturally.

Additionally, support for menstruators is limited in the Global South due to various factors, including cultural, economic, infrastructural, political, and social issues, particularly in school and university settings. This limitation arises from a lack of awareness and education regarding menstruation and menstrual health, as well as financial constraints. Schools and universities in rural areas often lack the proper infrastructure to ensure safe and hygienic access to bathroom facilities, water, and menstrual products. Despite numerous initiatives on campus (e.g., free products, sanitary pad drives, and menstrual education), most participants were unaware of these resources, admitting to receiving little to no support from the university regarding menstruation. Ecofeminism advocates for inclusive healthcare, especially for marginalised populations who are often silenced on issues that directly affect them. Individuals who experience period poverty are particularly susceptible to environmental toxins and unsanitary menstrual products, which can lead to an increased risk of health complications. A major issue highlighted by Charlotte was that while free condoms are available on campus at the university’s Health and Wellness Centre (Kovsie Health) and in some public bathrooms, the same cannot be said for sanitary pads:

“If condoms are free, why aren’t pads free? Sex is a choice but having a period isn’t.”

Although Kovsie Health provides free sanitary pads to menstruating students, Charlotte explained the difficulty of receiving them:

“I know that they do give free sanitary pads and stuff like that, but I’ve never received help directly from them... Getting an appointment to see someone is so difficult. My one friend and I stood there for three hours, and that just made it a whole lot worse, and we just decided not to.”

Moreover, some participants mentioned that there are not always sanitary waste bins in the bathroom stalls on campus, which makes it difficult to change and dispose of menstrual products and increases the likelihood of feeling dirty and ashamed. Mila recounted her experience by stating:

“One time I felt like they let me down a bit was in the bathroom. There’s either not, um, toilet paper or not a sanitation, um, dustbin” (Mila).

Lebo and Katie mentioned there are some residences that host period talks and pad drives, such as the day residence⁴ Lebo is part of. That, however, was the only involvement of the university mentioned by the participants. This emphasises the importance of having support and resources available to menstruating university students, which will grant them the opportunity to go about their day as they normally would and feel comfortable in effectively managing their menstruation on campus.

Not only is education on menstruation-related health issues important, but also on MHM practices, as many menstruators are unaware of how to manage their menstruation safely and sanitarily.

Regarding MHM, Charlotte stated:

“I thought that the awareness brought to these sort of things is not how it should be... I had people who I knew who I had to go and teach about period education or whatever you want to call it because it wasn’t, it’s like taboo.”

Additionally, MHM is important, especially in the Global South, as it may also be a way to reduce period poverty. As mentioned earlier, in South Africa, period poverty is a major issue, with 83% of female learners struggling to access adequate menstrual products (Pikoli 2023). As a result, they are forced to use unsanitary materials, such as rags, cloths, and newspapers, to manage their menstruation, which can lead to serious health implications (Jaafar et al. 2023). Because both the menstruating body and the environment are degraded, exploited, and oppressed, socialist ecofeminism promotes education on overcoming the disconnect between the body and nature and advocates for the liberation, empowerment, and justice for women and nature.

⁴ Refers to offering students living off-campus access to on-campus resources.

Regarding inadequate access to menstrual products, Bandile shared that she has had to use unhygienic products to manage her menstruation due to financial constraints:

“I’ve used, like, toilet paper... newspaper, and then there was another time I used, like, a cloth and then, like, I’d just keep washing it because I couldn’t afford sanitary pads... they were definitely not comfortable...”

This highlights the importance of adequate MHM practices, as they may be key to reducing period poverty and menstrual stigma. Such practices enable individuals to understand the menstrual cycle and ensure that they have the necessary sanitation to manage menstruation in a dignified manner.

4.6 Conclusion

The participants expressed varying feelings towards menstruation, which were influenced by their experiences and perceptions. Menstruation was predominantly viewed as a problematic phenomenon, primarily due to the embodied experience associated with it. This includes enduring extreme physical pain, which led to the participants to feel shamed and stigmatised by healthcare professionals and classmates. Furthermore, some participants noted that in their cultural or religious traditions, menstruation is regarded as a dirty and shameful occurrence, despite its inevitability. This not only leaves menstruators feeling embarrassed but also creates an expectation to conceal menstruation, including hiding menstrual products, as well as the pain and emotions experienced.

In addition, the type(s) of menstrual product(s) used by the participants were influenced by numerous factors, with comfort being the most common. Most participants regarded comfort as the main reason for purchasing certain products, which led to their widespread use of DMPs. By analysing the collected data from the participants, a deeper understanding of the experiences and perceptions of menstruation among university students can be achieved by delving into the issues associated with this phenomenon. This, in turn, enables the development of strategies and interventions to address these issues in the Global South, particularly regarding period poverty and menstrual education.

Chapter 5: Conclusion and Recommendations

5.1 Introduction

This chapter presents the main conclusions drawn from the study and the resulting recommendations. It begins with the overall conclusion of the study, which links the major findings to the overarching aim and objectives of the study, as well as the theoretical framework used. The chapter also discusses the limitations of the study, which are important to address in order for future research to fill these gaps. Additionally, the chapter describes the significance of the study and the contributions it makes to provide a holistic overview of menstruation, especially in the Global South.

5.2 Summary of Findings

This study aimed to explore the social and environmental aspects of menstruation, particularly among UFS students. The research was guided by three main objectives, which are used to present the findings of the study.

5.2.1 Experiences, Perceptions, and Sense of Agency of University Students Relating to Menstruation, Mostly Through Their Socialisation Around Issues of Menstruation

The study's findings indicated that the majority of the participants viewed menstruation as problematic due to experiencing severe menstruation-related symptoms, such as intense pain, vomiting, and fainting spells. This may be attributed to one or more of the following health issues: AUB, endometriosis, PMDD, PMS, and PCOS. In this study, three participants, Anna, Lebo, and Sophia, revealed how their diagnoses of endometriosis and/or PCOS affected their daily lives. They shared that the intense pain experienced during menstruation contributed to the challenges of managing their cycles. Although not formally diagnosed with endometriosis, Ayanda experienced extreme menstruation-related physical symptoms that disrupted her daily life when menstruating.

Another problematic theme that emerged from the participants' responses was menstrual stigmatisation, which evoked feelings of embarrassment and shame, as well as pessimistic cultural and religious views of menstruation. Supported by Maharaj and Winkler (2020), the practices and traditions of cultures and religions may influence the activities, interactions, and experiences of menstruators. Among the participants influenced by tradition, Lebo shared

how, in her experience, African spirituality views menstruation as a dirty and impure phenomenon, but also as a symbol of power. Kaya elaborated on this symbol of power by explaining that because women are viewed as being closer to God, they are even closer to God when menstruating and, because of this, are regarded as powerful. Instead of viewing menstruation as dirty and impure, she saw it as a sacred phenomenon. Charlotte, raised by Hindu parents, shared that in the Hindu community, menstruators are not allowed to participate in any religious activities, such as fasting, due to being viewed as unclean and unholy, which highlights the negative stigmas associated with menstruation.

Although a minority, the participants who viewed menstruation as a celebratory or ordinary phenomenon experienced little stigma and felt it is a natural occurrence for the biological female body, in preparation for the possibility of pregnancy. These participants also regarded it as an indicator of sexual and reproductive health that signals that the body is functioning as it should.

5.2.2 Students' Awareness of and Concern About the Environmental Outcomes Associated With the Use and Disposal of Single-Use Sanitary Products

Because the environmental impact of menstruation is a fundamental consideration in this study, the researcher analysed the participants' awareness of and concern about the environmental outcomes caused by DMPs. Khorsand et al. (2023) explain that, because DMPs are often non-biodegradable and non-recyclable, improper disposal of these products may lead to pollution and the generation of microplastics. It is important to note that only one participant had actively taken measures to reduce menstrual waste; Kaya used reusable period underwear as a means of managing menstruation. RMPs, such as period underwear, have been proven to be better for both the environment and menstruating individuals, as they do not contain harmful chemicals or plastic. Despite expressing concerns about the environmental harm of DMPs, the remaining participants revealed that they, in fact, used DMPs (sanitary pads and/or tampons) to manage menstruation, which have been shown to contain harmful chemicals that could disrupt endocrine function (Khorsand et al. 2023). Although they have not yet tried using RMPs, four participants (Anele, Bandile, Charlotte, and Sophia) indicated their openness to the idea of trying them. Only one participant (Katie) had used a menstrual cup before, but due to the difficulty of inserting and removing it, as well as the tedious process of cleaning it, she reverted to using conventional sanitary pads.

5.2.3 University Students' Awareness of the Potential Health Implications Associated With Conventional Disposable Sanitary Products

As noted by Khorsand et al. (2023), Ghadyalpatil (2023), and Marroquin et al. (2024), Katie also expressed concern about most DMPs being carcinogenic, which means that these products contain substances that have the potential to cause cancer in the body. Anele also voiced her concern about the potential health implications associated with DMPs, as menstruators may not be fully aware of the long-term health impacts that these products can have on their bodies. Regarding awareness, Lethabo emphasised the importance of education on MHM to include health-related topics, as many menstruating individuals are unaware of the symptoms that may indicate health issues. Furthermore, MHM is particularly important in the Global South, where 83% of female learners in South Africa lack sufficient access to adequate menstrual products (Pikoli 2023), which leads to the use of unhygienic materials or the prolonged use of disposable products (Jaafar et al. 2023).

Menstruation is a natural and inevitable phenomenon, with 800 million individuals worldwide menstruating daily (Michel et al. 2022), yet it is shrouded in social complexity. Studying this phenomenon allows individuals to better understand important concepts associated with menstruation, such as embodiment, inevitability, ineluctability, period poverty, stigma, etc. Furthermore, this study illustrated how menstruation can be viewed from an ecofeminist lens, which enabled the researcher to compare and contrast the reviewed literature with the study's findings.

5.3 Limitations of the Study

There are some limitations of the study that should be recognised. The researcher struggled to find participants to take part in the study. This may be due to two possible reasons: the researcher had a specific target population, which limited the sample, or the sensitivity of the topic of menstruation, as many individuals are not comfortable sharing their menstruation experiences and perceptions.

Due to the small sample population (15 participants), there may be other experiences and perceptions of menstruation (both positive and negative) that were not discussed in the focus groups and one-on-one interviews. This consequently prevented the researcher from including these in her study, as she was not made aware of other experiences and perceptions.

Overall, despite these limitations, the study still offers valuable insights into the social and environmental aspects of menstruation, particularly the experiences and perceptions that menstruating students have regarding it.

5.4 Recommendations

The research found that the university students who participated in this study were not open to using RMPs as a means of managing menstruation due to comfort and sanitary issues. Most of these products, such as menstrual cups, period panties, and reusable pads, require washing after use with boiled water to avoid bacterial infection, and the visible practice of drying reusable pads can be repulsive. As a result, many individuals are deterred from using these alternative sanitary products. Consequently, most menstruators opt for DMPs such as pads and tampons, which are perceived as more hygienic and comfortable.

Additionally, limited awareness and education on how to adequately use reusable products lead to their avoidance. Although period panties and reusable pads are not inserted like a menstrual cup, the participants expressed concerns about the sizing of these products, stating that they were either too big or too small. It is recommended that menstrual product innovators consider these complaints and possibly redesign these products to be more user-friendly. Furthermore, increasing awareness and education on how to use these products could encourage more individuals to try them. Ultimately, this could result in a greater number of menstruators opting for RMPs, which will lead to a reduction in menstrual product waste.

5.5 Significance of the Study

The study holds significant importance due to the following reasons:

5.5.1 Unique Contribution

This research aimed to expand knowledge and advance our understanding of menstruation, including various aspects such as the growing social and environmental concerns that affect many areas of our daily lives. Despite the common occurrence of menstruation, it is often overlooked as a serious topic of investigation, particularly when the research is non-medical in nature. Research is vital for societal progress and the development of new ideas, which the researcher believes will be achieved through this study, which will allow for a better understanding of menstruation and the experiences and perceptions associated with it.

Moreover, by conducting this study, the researcher aimed to build on the completed survey conducted among students at the UFS (Department of Sociology 2024) by adding in-depth knowledge and reflecting on the lived experiences of the participants.

5.5.2 Impact on Menstruators

The researcher also aimed to raise awareness of various ways of managing menstruation that may be uplifting for some menstruators who lack knowledge about RMPs. These practices also offer environmental benefits. Furthermore, the focus groups and individual interviews facilitated a holistic approach to understanding the lived experiences of menstruation, as well as menstruation-related aspects, including period poverty, menstrual stigma, and perceptions and experiences of DMPs and RMPs.

5.5.3 Future Research and Entrepreneurial Opportunities

The study's results can serve as a foundation for future researchers who wish to explore the subject of menstruation in greater depth, including its social and environmental aspects. Additionally, entrepreneurs and organisations that are interested in addressing issues related to menstruation among menstruating students may find valuable insights and potential opportunities in this study's findings.

5.5.4 Empowering Menstruators

Through this research, menstruating individuals can gain a better understanding of how menstruation may impact their daily lives. This awareness can empower them to make informed choices and take proactive steps to enhance their experiences of menstruation in the future.

5.5.5 Conclusion

The significance of this study lies in its potential to expand knowledge on the social and environmental impacts of menstruation in the Global South, particularly in South Africa, which benefits researchers, schools and universities and, most importantly, the menstruating population itself.

References

- Agrusa, O. (2019). *Our lips are sealed: a social constructionist approach to understanding menstrual concealment at menarche* [unpublished]. Honours thesis, Portland State University.
- Altıntaş, H.K. and Şahin, N.E. (2025). Attitudes to aging, depression, and death anxiety among community-dwelling older adults: a cross-sectional correlational study. *BMC Geriatrics*, 25(1), pp.454-451.
- American Psychological Association (APA). (2013). *Diagnostic and statistical manual of mental disorders*. 5th ed. Washington, D.C.: APA.
- Amery, F., Channon, M., Puri, M.C. and Thomson, J. (2023). Developing the menstrual justice agenda: insights from a mixed method study in the mid-western region of Nepal. *Sexual and Reproductive Health Matters*, 31(1), pp.1-14.
- Archambault, A. (1993). A critique of ecofeminism. *Canadian Woman Studies / Les Cahiers De La Femme*, 13(3), pp.19-22.
- Asumah, M.N., Abubakari, A. and Gariba, A. (2022). Schools preparedness for menstrual hygiene management: a descriptive cross-sectional study in the West Gonja Municipality, Savannah Region of Ghana. *BMJ Open*, 12(4), pp.1-9.
- Aujla, M., Logie, C.H., Hardon, A. and Narasimhan, M. (2024). Environmental impact of menstrual hygiene products. *Bulletin of the World Health Organization*, 2024, Article BLT.24.291421 [online]. Available from: <https://cdn.who.int/media/docs/default-source/bulletin/online-first/blt.24.291421.pdf> [accessed 22 February 2025].
- Babbie, E. (2016). *The practice of social research*. 14th ed. Boston: Cengage Learning.
- Bakoto Sawo, M. (2020). Personal narrative: let girls be girls – my journey into forced womanhood. In: Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.93-97.
- Bauman, C. (2022). Her blood as power: a viewpoint on Christian menstruation. *Womaneering*, 15 January 2022 [online]. Available from: <https://christybauman.com/her-blood-as-power-a-viewpoint-on-christian-menstruation/> [accessed 9 May 2025].

- Benshaul-Tolonen, A., Zulaika, G., Sommer, M. and Phillips-Howard, P.A. (2020). Measuring menstruation-related absenteeism among adolescents in low-income countries. In: Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.705-723.
- Bildhauer, B. and Owen, L. (2023). Menstrual stigma rearticulated as environmental pollution in contemporary Scottish policy-making. *Women's Reproductive Health*, 10(2), pp.167-184.
- Blake, C. (2023). When wombs speak: period positivity in Islam. *Amaliah*, 10 October 2023 [online]. Available from: <https://www.amaliah.com/post/67139/worship-during-menstruation-for-muslim-women-islam> [accessed 27 May 2025].
- Bobel, C. (2020). Introduction: menstruation as lens – menstruation as opportunity. In: Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.1-6.
- Bobel, C. and Fahs, B. (2020). The messy politics of menstrual activism. In: Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.1001-1018.
- Brabaw, K. (2020). 6 transgender women talk menstruation. *Aisle*, 21 July 2020 [online]. Available from: <https://periodaisle.com/blogs/all/6-transgender-women-talk-menstruation?srsId=AfmBOooaTdvvFew8FKcWRPuXzZep76SKBRSjJlz8RjLmuK3LEYSRxcYM> [accessed 4 August 2025].
- Brisson, S. (2017). *Women's connectedness to nature: an ecofeminist exploration* [unpublished]. Honours thesis, Regis University.
- Bryman, A. (2012). *Social research methods*. 4th ed. New York: Oxford University Press.
- Cardoso, L.F., Scolese, A.M., Hamidaddin, A. and Gupta, J. (2021). Period poverty and mental health implications among college-aged women in the United States. *BMC Women's Health*, 21(1), pp.1-7.
- Carlassare, E. (2000). Socialist and cultural ecofeminism: allies in resistance. *Ethics and the Environment*, 5(1), pp.89-106.

Chirambo, T. (2019). *An exploration of menstruation hygiene management among high school learners: the case of Fezeka High School, Gugulethu* [unpublished]. Master's degree research project, University of Cape Town.

Clay, R. (2023). *PMS vs. PMDD: what's the difference?* [online]. Available from: <https://www.apa.org/topics/women-girls/pms-vs-pmdd> [accessed 4 August 2025].

Cohen, I. (2020). Menstruation and religion: developing a critical menstrual studies approach. In: Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.115-129.

Creswell, J.W. and Creswell, J.D. (2018). *Research design: qualitative, quantitative, and mixed methods approaches*. 5th ed. California: Sage Publications.

Critchley, H.O.D., Babayev, E., Bulun, S.E., Clark, S., Garcia-Grau, I., Gregersen, P.K., Kilcoyne, A., Kim, J.Y.J., Lavender, M., Marsh, E.E., Matteson, K.A., Maybin, J.A., Metz, C.N., Moreno, I., Silk, K., Sommer, M., Simon, C., Tariyal, R., Taylor, H.S., Wagner, G. P. and Griffith, L.G. (2020). Menstruation: science and society. *American Journal of Obstetrics and Gynecology*, 223(5), pp.624-664.

De Freitas Netto, S.V., Sobral, M.F.F., Ribeiro, A.R.B. and Da Luz Soares, G.R. (2020). Concepts and forms of greenwashing: a systematic review. *Environmental Sciences Europe*, 32(1), pp.1-12.

Del Duca, L. and Liera, C. (2023). *Q&A: understanding the environmental impacts of menstrual health and hygiene practices* [online]. Available from: <https://www.sei.org/features/qa-understanding-the-environmental-impacts-of-menstrual-health-and-hygiene-practices/> [accessed 25 June 2025].

Department of Sociology. (2024). *A sensitive continuum: sanitary pad sustainability: an unfolding strategy* [unpublished survey conducted in June-July 2024 among University of the Free State students]. Bloemfontein: University of the Free State.

Deri, G. (2025). *Breaking the cycle: rethinking menstruation and its environmental impact* [online]. Available from: https://www.soas.ac.uk/about/blogs/breaking-cycle-rethinking-menstruation-and-its-environmental-impact?utm_source=chatgpt.com [accessed 17 June 2025].

Fennie, T., Moletsane, M. and Padmanabhanunni, A. (2021). Adolescents' experiences of menarche and menstruation in disadvantaged schools in South Africa: a qualitative exploration. *Health Education*, 121(4), pp.408-419.

Frank, S.E. and Dellaria, J. (2020). Navigating the binary: a visual narrative of trans and genderqueer menstruation. In: Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.69-76.

Gaard, G. (2017). *Critical ecofeminism*. Lanham: Lexington Books.

Garg, G., Elshimy, G. and Marwaha, R. (2023). *Gender dysphoria*. Florida: StatPearls Publishing.

Garofalo, C., Giammarioli, L., Aiolfi, I., Delvecchio, E. and Mazzeschi, C. (2025). Conceptualization and assessment of shame experience and regulation: an umbrella review of synthesis studies. *Clinical Psychology and Psychotherapy*, 32(4), pp.1-20.

Ghadyalpatil, N. (2023). Sanitary pads can cause cancer – reasons and prevention. *The Times of India*, 22 January 2023 [online]. Available from: <https://timesofindia.indiatimes.com/blogs/voices/sanitary-pads-can-cause-cancer-reasons-and-prevention/> [accessed 14 July 2025].

Goffman, E. (2022). *Stigma: notes on the management of spoiled identity*. New Jersey: Penguin Classics.

Goswami, P. (2021). *Impact of industrialization on environment* [online]. Available from: <https://www.researchgate.net/publication/351599623> [accessed 14 July 2025].

Gunson, J.S. (2016). Nature, menstrual suppression, and the value of material feminism. *Health Sociology Review*, 25(3), pp.312-325.

Hasson, K.A. (2020). Introduction: menstruation as material. In: Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.669-672.

Helosvuori, E. and Oikkonen, V. (2024). Sensing pain: embodied knowledge in endometriosis. *Health*, 28(6), pp.937-952.

Horton, H. (2025). Toxic pesticide levels found in tampons 40 times higher than legal limit for water. *The Guardian*, 28 May 2025 [online]. Available from: <https://www.theguardian.com/environment/2025/may/28/toxic-pesticide-levels-found-in-tampons-40-times-higher-than-legal-limit-for-water> [accessed 14 July 2025].

Ismail, H., Syed Hussain, T.P.R. and Subhan, M. (2016). The contribution of ecofeminism philosophy in environmental management research. *Mediterranean Journal of Social Sciences*, 7(1), pp.335-339.

Ismail, K., Pedro, A. and Andipatin, M. (2016). Exploring a sample of university students' perceptions of menstruation. *Journal of Psychology in Africa*, 26(4), pp.394-396.

Jaafar, H., Ismail, S.Y. and Azzeri, A. (2023). Period poverty: a neglected public health issue. *Korean Journal of Family Medicine*, 44(4), pp.183-188.

Johnson, E., Seed, L., Biju, A. and Tulinius, C. (2025). Experiences, perceptions and barriers to use of reusable menstrual products among university students globally: a systematic review. *BMJ Open*, 15(8), pp.1-9.

Kanu Ikechukwu Anthony, O. (2011). African traditional religion and Christianity: a comparative analysis of values. *Journal of Nigeria Languages and Culture*, 13(2), pp.177-188.

Kaur, R., Kaur, K. and Kaur, R. (2018). Menstrual hygiene, management, and waste disposal: practices and challenges faced by girls/women of developing countries. *Hindawi Journal of Environmental and Public Health*, 2018(1), pp.1-9.

Khorsand, P., Dada, S., Jung, L., Law, S., Patil, P., Wangari, M.C., Omrani, O. and Van Daalen, K. (2023). A planetary health perspective on menstruation: menstrual equity and climate action. *Lancet Planet Health*, 7(5), pp.347-349.

Kluger, J. (2023). PFAS 'forever chemicals' are turning up in menstrual products. Here's what you need to know. *Time USA*, 9 February 2023 [online]. Available from: <https://time.com/6254060/pfas-period-chemicals-underwear-tampons/> [accessed 14 July 2025].

Kubovski, A. and Cohen Shabot, S. (2024). Experience of menstruation with the use of reusable menstrual products: a qualitative study among menstruators in Israel. *Culture, Health and Sexuality*, 26(7), pp.904-919.

Leech, K. (2023). Still no evidence for ghost stat about schoolchildren's access to menstrual products in South Africa. *Africa Check*, 20 July 2023 [online]. Available from: <https://africacheck.org/fact-checks/spotchecks/still-no-evidence-ghost-stat-about-schoolchildrens-access-menstrual-0> [accessed 9 May 2025].

Lehaha, T. (2023). How #AlwaysBloodSisters is fighting period poverty in South Africa. *Global Citizen*, 7 June 2023 [online]. Available from: https://www.globalcitizen.org/en/content/always-blood-sisters-period-poverty-south-africa/?gad_source=1&gclid=CjwKCAiA6KWvBhAREiwAFPZM7kSmlUeS7Qx_hPG-V8ZXzcQAX9rJVB4oh9rqjCrnZd_k1y3jJPVHRoCkOEQAvD_BwE [accessed 9 May 2025].

Letsebe, K. (2023). Menstrual leave: where is South Africa? *Chief Human Resources Officer (CHRO) South Africa*, 10 March. 2023 [online]. Available from: <https://chro.co.za/articles/menstrual-leave-is-south-africa-ready-to-adopt-the-gender-positive-policy/> [accessed 9 May 2025].

Ling, C. (2014). The manifestations and symptoms of ecofeminism. *Studies in Sociology of Science*, 5(3), pp.95-100.

Link, B.G. and Phelan, J.C. (2001). Conceptualizing stigma. *Annual Review of Sociology*, 27(1), pp.363-385.

Lowik, A.J. (2021). “Just because I don’t bleed, doesn’t mean I don’t go through it”: expanding knowledge on trans and non-binary menstruators. *International Journal of Transgender Health*, 22(1-2), pp.113-125.

Maharaj, T. and Winkler, I.T. (2020). Transnational engagements: cultural and religious practices related to menstruation. In: Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.163-174.

Mahawar, H. (2023). Research methodology of social sciences in academic article. *Contemporary Issues in Languages and Humanities*, 9(1), pp.1-5.

- Marroquin, J., Kiomourtzoglou, M.A., Scranton, A. and Pollack, A.Z. (2024). Chemicals in menstrual products: a systematic review. *International Journal of Obstetrics and Gynaecology*, 131(5), pp.655-664.
- Mazokopakis, E.E. (2020). Sexual activity during menstruation in the Holy Bible and Quran. *International Journal of Fertility and Sterility*, 14(1), Article 78.
- McQuade, J. (2019). Earth Day: colonialism's role in the overexploitation of natural resources. *The Conversation*, 18 April 2019 [online]. Available from: <https://theconversation.com/earth-day-colonialisms-role-in-the-overexploitation-of-natural-resources-113995> [accessed 9 May 2025].
- Merchant, C. (2005). Ecofeminism. In: Gottlieb, R., ed. *Radical ecology*. 2nd ed. New York: Routledge, pp.193-222.
- Michel, J., Mettler, A., Schönenberger, S. and Gunz, D. (2022). Period poverty: why it should be everybody's business. *Journal of Global Health Reports*, 6, Article e2022009.
- Mies, M. and Shiva, V. (2014). *Ecofeminism*. London: Zed Books.
- Mikes, B.A., Vadakekut, E.S. and Sparzak, P.B. (2025). *Abnormal uterine bleeding*. Florida: StatPearls Publishing.
- Mohajan, H.K. (2017). *Two criteria for good measurements in research: validity and reliability* [online]. Available from: https://mpira.ub.uni-muenchen.de/83458/1/MPRA_paper_83458.pdf [accessed 9 May 2025].
- Moloney, S. (2010). How menstrual shame affects birth. *Women and Birth*, 23(4), pp.153-159.
- Moodley, N. (2023). SA women spend R30bn a year to menstruate – there's a cheaper option. *Daily Maverick*, 20 June 2023 [online]. Available from: <https://www.dailymaverick.co.za/article/2023-06-20-after-the-bell-sas-r30bm-crimson-carbon-problem/> [accessed 9 May 2025].
- Muralidharan, A., Broekhuijsen, M., Lisondra, L., Guru, A., Haver, J. and Irfan, S. (2025). The ripple effect: impacts of climate change on menstrual health and paths to resilience. *Frontiers in Global Women's Health*, 6, Article 1569046.

Neubauer, B.E., Witkop, C.T. and Varpio, L. (2019). How phenomenology can help us learn from the experiences of others. *Perspectives on Medical Education*, 8(2), pp.90-97.

Olson, M.M., Alhelou, N., Kavattur, P.S., Rountree, L. and Winkler, I.T. (2022). The persistent power of stigma: a critical review of policy initiatives to break the menstrual silence and advance menstrual literacy. *PLOS Global Public Health*, 2(7), Article e0000070.

O'Reilly, G. (2023). South Africa period poverty: "I don't want anyone else to use rags for sanitary pads." *BBC*, 28 May 2023 [online]. Available from: <https://www.bbc.com/news/world-africa-65624739> [accessed 9 May 2025].

Owen, L. (2022). Stigma, sustainability, and capitals: a case study on the menstrual cup. *Gender, Work and Organization*, 29(4), pp.1095-1112.

Padmanabhanunni, A. and Fennie, T. (2017). The menstruation experience: attitude dimensions among South African students. *Journal of Psychology in Africa*, 27(1), pp.54-60.

Pednekar, S., Some, S., Rivankar, K. and Thakore, R. (2022). Enabling factors for sustainable menstrual hygiene management practices: a rapid review. *Discover Sustainability*, 3, Article 28.

Pikoli, Z. (2023). 83% of girl learners in SA lack access to menstrual hygiene products. *Daily Maverick*, 10 April. 2023 [online]. Available from: <https://www.dailymaverick.co.za/article/2023-04-10-83-of-girl-learners-in-sa-struggle-to-access-to-menstrual-hygiene-products/> [accessed 19 April 2025].

Piper, J. (2021). Is sex during menstruation sinful? *Desiring God*, 6 August 2021 [online]. Available from: <https://www.desiringgod.org/interviews/is-sex-during-menstruation-sinful> [accessed 9 May 2025].

Plumwood, V. (1993). *Feminism and the mastery of nature*. New York: Routledge.

Przybylo, E. and Fahs, B. (2020). Empowered bleeders and cranky menstruators: menstrual positivity and the "liberated" era of new menstrual product advertisements. In Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.375-407.

Puleo, A.H. (2017). What is ecofeminism? *Quaderns de La Mediterrània*, 25, pp.27-34.

Ramsay, C., Hennegan, J., Douglass, C.H., Eddy, S., Head, A. and Lim, M.S.C. (2023). Reusable period products: use and perceptions among young people in Victoria, Australia. *BMC Women's Health*, 23, Article 102.

Rarity, C.A. (2024). *Where the bloody hell is it? A study of menstruation in the New Zealand relationships and sexuality education guidelines* [unpublished]. Master's thesis, University of Auckland.

Rimmer, A. (2018). BMA calls for end to period poverty. *Medical Journal*, 361, Article k2811.

Rodriguez, O. (2018). Menstrual products have been declared tax free in South Africa. *Global Citizen*, 24 October. 2018 [online]. Available from: <https://www.globalcitizen.org/en/content/south-africa-sanitary-pads-tax-lifted/> [accessed 20 October 2025].

Røstvik, C.M. (2022). Conclusion: free bleeding? Menstruation beyond consumption. In: C.M. Røstvik. *Cash flow: the business of menstruation*. London: UCL Press, pp.177-200

Rotinsulu, R.A.J. and Ait, E.P. (2025). Knowledge about menstruation with readiness to face menarche of elementary school students in the era of reproductive health education. *Jurnal Ilmiah Kesehatan Sandi Husada*, 14(1), pp.174-182.

Roxburgh, H., Hampshire, K., Kaliwo, T., Tilley, E.A., Oliver, D.M. and Quilliam, R.S. (2020). Power, danger, and secrecy – a socio-cultural examination of menstrual waste management in urban Malawi. *PLoS ONE*, 15(6), Article e0235339.

Rueckert, P. (2018). Period poverty, stigma are keeping girls out of school. *Global Citizen*, 30 May. 2018 [online]. Available from: <https://www.globalcitizen.org/en/content/menstrual-hygiene-day-education/> [accessed 19 May 2025].

Saldaña, J. (2013). An introduction to codes and coding. In: Saldaña, J., ed. *The coding manual for qualitative researchers*. 2nd ed. London: Sage Publications, pp.1-40.

Schweizer, C., Böhm, M. and Paudel, R. (2022). *How menstrual discrimination is approached by menstrual movements in the Global North and the Global South* [online]. Available from: <https://www.dignifiedmenstruation.org/detail/130/how-menstrual-discrimination-is-approached-by-menstrual-movements-in-the-global-north-and-the-global-south> [accessed 16 May 2025].

Scranton, A. and Women's Voices for the Earth. (2022). *What's in your period product? An investigation of ingredients disclosed on product labels* [online]. Available from: https://womensvoices.org/wp-content/uploads/2022/05/label_report_period_products_ENGLISH_final.pdf [accessed 16 May 2025].

Sim, J. and Waterfield, J. (2019). Focus group methodology: some ethical challenges. *Quality and Quantity*, 53(6), pp.3003-3022.

Singh, V.K. and Rai, S. (2022). Reentering the aspects of eco-feminist responsiveness in Toni Morrison's *The Bluest Eye*. *The Creative Launcher*, 7(4), pp.74-82.

Stephens-Chu, M. (2025). "Shō ga nai yo ne": interembodied experiences of menstrual pain among young Japanese women. *Social Science and Medicine*, 382, Article 118349.

Stevenson, G. (2022). The origin story of a slogan, 'the personal is political'. *Psyche*, 5 October 2022 [online]. Available from: <https://psyche.co/ideas/the-origin-story-of-a-slogan-the-personal-is-political> [accessed 16 March 2025].

Taylor, H. (2023). *Unruly periods: reproductive futurities and the rhetorics of menstruation* [unpublished]. PhD thesis, Clemson University [online]. Available from: https://open.clemson.edu/all_dissertations/3421/ [accessed 16 May 2025].

Thomas, L. (2022). *The intersectional environmentalist*. New York: Voracious/Little, Brown and Company.

Thompson, J. (2023). No one studied menstrual product absorbency realistically until now. *Scientific American*, 22 August 2023 [online]. Available from: <https://www.scientificamerican.com/article/no-one-studied-menstrual-product-absorbency-realistically-until-now/> [accessed 16 May 2025].

Tull, K. (2019). *Period poverty impact on the economic empowerment of women*. United Kingdom: K4D.

University of the Free State (UFS). (2023). *Vision, mission and values* [online]. Available from: <https://www.ufs.ac.za/about-the-ufs/ufs-in-focus/vision-and-goals> [accessed 20 October 2025].

United Nations (UN). (2023). *Menstrual health and dignity commitment* [online]. Available from: <https://sdgs.un.org/partnerships/menstrual-health-and-dignity-commitment#description> [accessed 20 May 2025].

United Nations Children's Fund (UNICEF) (2018). *FAST FACTS: nine things you didn't know about menstruation* [online]. Available from: <https://www.unicef.org/press-releases/fast-facts-nine-things-you-didnt-know-about-menstruation> [accessed 20 May 2025].

United Nations Children's Fund (UNICEF). (2021). *Defining social norms and related concepts* [online]. Available from: <https://www.unicef.org/documents/defining-social-norms-and-related-concepts> [accessed 20 May 2025].

Ussher, J.M. and Perz, J. (2020). Resisting the mantle of the monstrous feminine: women's construction and experience of premenstrual embodiment. In Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.215-231.

Van Lonkhuijzen, R.M., Garcia, F.K. and Wagemakers, A. 2023. The stigma surrounding menstruation: attitudes and practices regarding menstruation and sexual activity during menstruation. *Women's Reproductive Health*, 10(3), pp.364-384.

Varanasi, A. (2022). *How colonialism spawned and continues to exacerbate the climate crisis* [online]. Available from: <https://news.climate.columbia.edu/2022/09/21/how-colonialism-spawned-and-continues-to-exacerbate-the-climate-crisis/> [accessed 20 May 2025].

Vijayaraj, B. (2017). A comprehensive study of ecofeminism. *The Anthropologist*, 30(1), pp.68-75.

Vora, S. (2020). The realities of period poverty: how homelessness shapes women's lived experiences of menstruation. In Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.31-47.

Wall, L.L., Teklay, K., Desta, A. and Belay, S. (2018). Tending the "monthly flower:" a qualitative study of menstrual beliefs in Tigray, Ethiopia. *BMC Women's Health*, 18(1), Article 183.

Whelan, C. (2022). 10 signs your period is about to start. *Healthline*, 4 February 2022 [online]. Available from: <https://www.healthline.com/health/womens-health/period-signs> [accessed 20 May 2025].

Wiggleson-Little, J. (2024). "Just" a painful period: a philosophical perspective review of the dismissal of menstrual pain. *Women's Health*, 2024, Article 20.

Winter, S.C., Sommer, M., Obara, L.M. and Nair, D. (2022). “There is no place to dispose them. What would you have me do?”: a qualitative study of menstruation in the unique physical and social environment in informal settlements in Nairobi, Kenya. *Health and Place*, 78, Article 102932.

Wood, J.M. (2020). (In)visible bleeding: the menstrual concealment imperative. In Bobel, C., Fahs, B., Arveda Kissling, E., Winkler, I.T., Hasson, K.A. and Roberts, T.A., eds. *The Palgrave handbook of critical menstruation studies*. Singapore: Springer Nature, pp.319-336.

World Health Organization (WHO). (2023). *Endometriosis* [online]. Available from: <https://www.who.int/news-room/fact-sheets/detail/endometriosis> [accessed 20 May 2025].

World Health Organization (WHO). (2025). *Polycystic ovary syndrome* [online]. Available from: <https://www.who.int/news-room/fact-sheets/detail/polycystic-ovary-syndrome> [accessed 20 May 2025].

World Health Organization (WHO) and United Nations Children’s Fund (UNICEF). (2024). Global report reveals major gaps in menstrual health and hygiene in schools [online]. Available from: <https://www.who.int/news/item/28-05-2024-global-report-reveals-major-gaps-in-menstrual-health-and-hygiene-in-schools> [accessed 20 May 2025].

Annexures

Annexure A: Ethical Clearance



GENERAL/HUMAN RESEARCH ETHICS COMMITTEE (GHREC)

Registration Number: REC-112922-058

27-Jan-2025

Dear Ms Jani-Mari Ferreira

Application Approved

Research Project Title:

Social and Environmental Aspects of Menstruation

Ethical Clearance number:

UFS-HSD2024/2057

We are pleased to inform you that your application for ethical clearance has been approved. Your ethical clearance is valid for twelve (12) months from the date of issue. We request that any changes that may take place during the course of your study/research project be submitted via an Amendment on RIMS to the ethics office to ensure ethical transparency. Furthermore, you are requested to submit a Final Report on RIMS for your study/research project to the ethics office once the project has concluded. Should you require more time than the allotted 12 months to complete this research, please apply for an extension by submitting a Continuation/Report on RIMS. Thank you for submitting your proposal for ethical clearance. We wish you success with your research.

Yours sincerely,

Dr Adri Du Plessis

Chairperson: General/Human Research Ethics Committee

Dr Adri
du
Plessis

Digitally signed
by Dr Adri du
Plessis
Date: 2025.01.27
18:24:12 +02'00'

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Park West Tel: +27 (0) 5140 19337
Bloemfontein 9301 duplessisA@ufs.ac.za
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Annexure B: Information Leaflet and Informed Consent Form



Research study information leaflet and consent form

Date

Date of the research project

Title of the research project

Social and Environmental Aspects of Menstruation

Principle investigator / researcher(s) name(s) and contact number(s):

Jani-Mari Ferreira 2027012612 0812708696

Faculty and Department:

Humanities: Sociology

Contact Mr Jali Buti (ButiM@ufs.ac.za) for questions or concerns pertaining to the study

Study leader(s) name and contact number:

Prof Katinka de Wet
0514012918

Dr Nola Redelinghuys
0844774400

What is the aim / purpose of the study?

The overarching aim of the study is to analyse the complex phenomenon of menstruation from a social and environmental perspective. To explore the complexity of menstruation, different aspects must be considered, which is what I am to do to conduct a holistic study.

Who is doing the research?

I, Jani-Mari Ferreira, will be doing the research to explore the complexity of menstruation by considering the different aspects thereof. Additionally, I will be exploring the lived experiences and perceptions of menstruation by students to build a holistic understanding of this phenomenon.

Has the study received ethical approval?

This study has received approval from the Research Ethics Committee of UFS.

Approval number: UFS-HSD2024/2057

Why are you invited to take part in this research project?

This invitation to voluntarily participate in the focus groups is sent to you as you participated in a preceding survey based on the same topic and indicated a willingness to continue with the study. We are interested to talk to any registered, female-identifying students at the Bloemfontein and Qwaqwa campuses of the University of the Free State. Female-identifying students will receive an email as well



as Blackboard notifications about the focus groups. We aim to interview approximately 25 students in the form of focus group discussions. The focus groups will take about 60 – 90 minutes to complete and I will ensure that we find a timeslot that does not interfere with your academic or personal obligations.

What is the nature of participation in this study?

The study involves focus group discussions that will take place in the form of a semi-structured interview schedule.

The expected duration of participating in the focus group discussions is four months as this will allow for enough time to schedule the discussions according to participants' personal schedules. Because there will be a group of participants and several focus groups taking place, four months will allow for sufficient time to schedule and conduct the discussions.

Can the participant withdraw from the study?

Yes – participation is voluntary and there is no penalty or loss of benefit for non-participation. Being in this study is voluntary, and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time up until the focus group discussions are completed and without giving a reason. Once the focus groups have taken place, you will be asked if your data may be used, or if you want to withdraw from the study. If you decide to withdraw, your information will not be used in the study.

What are the potential benefits of taking part in this study?

You will not receive any form of remuneration to participate in the study. Your participation in this study will not lead to any direct benefits; but will add to the knowledge on menstrual health and hygiene management in the South African context, an area characterised by an apparent shortage in academic literature. The findings of the focus groups will also be used to write academic papers and to possibly present the findings at academic conferences. Your participation in the study will be kept confidential.

What is the anticipated inconvenience of taking part in this study?

Risks associated with mental or psychological distress resulting from participating in this study cannot be ruled out as this is a sensitive topic. However, the questions have been cautiously formulated to minimise the likelihood of such distress. Psycho-social counselling services through the UFS Student Mental Health Careline will also be available upon request at any time. The cost-free Student Careline is 0800 00 6363. You can also seek mental health services at Kopsie Health on campus.

Will what I say be kept confidential?

I (the researcher) request you to not disclose any identifiable or sensitive information that was shared among participants. Although I have no control over whether the participants will reveal information or identifies of fellow participants, I am able to impose ground rules before each focus group, such as to respect each other's views and not to divulge people's revelations together with their identities. Your answers will be given a fictitious code number or a pseudonym, and you will be referred to in

this way in the data, any publications, or other research reporting methods such as conference proceedings. Myself and my supervisor, Prof Katinka de Wet, and co-supervisor, Dr Nola Redelinghuys, will have access to the data, but we will maintain confidentiality by signing a confidentiality agreement. Your answers may be reviewed by people responsible for making sure that research is done properly, including the transcriber, external coder, and members of the Research Ethics Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records. Your anonymous data may be used for other purposes, such as research reports, journal articles, and conference presentations. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report. While every effort will be made by the researcher to ensure that you will not be connected to the information that you share during the focus group, I cannot guarantee that other participants in the focus group will treat information confidentially. I shall, however, encourage all participants to do so. For this reason, when disclosing personally sensitive information in the focus group, I will ensure that your identity is not revealed anywhere in the study.

How will the information be stored and ultimately destroyed?

Hard copies of your answers will be stored by the researcher for a period of five years in a locked safe in her house for future research or academic purposes; electronic information will be stored on a password protected laptop. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. After five years, the hardcopies will be shredded, and the electronic information will be permanently deleted.

Will I receive payment or any incentives for participating in this study?

You will not receive any form of remuneration to participate in the study. Risks associated with mental or psychological distress resulting from participating in this study cannot be ruled out. However, the questions have been cautiously formulated to minimise the likelihood of such distress.

How will the participant be informed of the findings / results of the study?

If you would like to be informed of the final research findings, please contact Jani-Mari Ferreira on 2027012612@ufs4life.ac.za. The findings are accessible for the following five years. Should you require any further information or want to contact the researcher about any aspect of this study, please contact Jani-Mari Ferreira on 2027012612@ufs4life.ac.za. Should you have concerns about the way in which the research has been conducted, you may contact Prof Katinka de Wet on DewetK@ufs.ac.za or Dr Nola Redelinghuys on redelinn@ufs.ac.za.

Thank you for taking the time to read this information sheet and for participating in this study.

Consent to participate in this study

I, the undersigned,

confirm that I voluntarily agree to participate in the research study referred to as the Social and Environmental Aspects of Menstruation, which is being conducted by Jani-Mari Ferreira.

I, the undersigned Participant, further confirm that-

1. the Researcher has explained the nature, procedure, potential benefits and anticipated inconvenience of my participation in the Study;
2. I have read (or had explained to me) and understood the Study as explained in the attached information sheet;
3. I have had sufficient opportunity to ask questions and am prepared to participate in the Study;
4. I understand that my participation in the Study is entirely voluntary and that I am free to withdraw at any time without penalty (if applicable);
5. I voluntarily provide the UFS and the Researcher with my personal information and consent to the UFS and the Researcher collecting, disclosing and processing my personal information in order to conduct the Study and any related activities in relation thereto;
6. I hereby acknowledge and confirm that I understand the purpose for which the UFS and the Researcher may collect, store, use, delete, destroy, outsource, transfer or otherwise process, as the context and circumstances may require and as contemplated in terms of POPIA, my personal information as set out herein;
7. I am aware that the findings of the Study will be anonymously processed into a research report, journal publications and/or conference proceedings and that my personal information will be aggregated and deidentified at such stage;
8. I also give the UFS permission to share, without notification, the collected data with other researchers at the UFS or other Higher Education Institutions. This permission is dependent on the same principles of ethical research practices, anonymity/confidentiality, safekeeping of information, and other issues listed above applying.

I, the Participant, agree to the recording of the focus group.

Full Name of Participant: _____

Signature of Participant: _____ Date: _____

Full Name(s) of Researcher(s): Jani-Mari Ferreira

Signature of Researcher: _____ Date: _____

Annexure C: Interview Schedule



Interview Schedule

Like you, I am a menstruator who experiences challenges regarding menstruation. Menstruation is a phenomenon by which we all struggle with and do not necessarily always have options or choices on how to handle it. But by participating in this study – listening to each other's stories – you might learn something that could help you in your own life regarding menstruation.

[I will then present the visual prompts (PowerPoint presentation) to make the participants feel more comfortable and at ease to share their stories and answer the following questions.]

1. How did you feel when you first started having your period?
2. Were you prepared for this, i.e. did someone explain the reasons for menstruation, or did it come as a shock to you?
3. Who taught you about menstruation? What did they teach you, i.e. that it should be hidden or rather celebrated?
4. Do you experience any form of health issues before or during menstruation? If so, what symptoms do you experience, i.e. PMS, endometriosis, etc.?
5. Have you ever experienced any form of menstrual stigma? For example, has anyone made fun of you because you were menstruating? Or told you that you should be ashamed of it? If so, please explain this occurrence(s).
6. Do you experience care and support from the university relating to menstruation? Please explain how/how not.
7. Are you aware of period poverty? What do you think this concept means?
8. Does period poverty affect you in any way?
9. What type of menstrual product(s) do you normally use?
10. Why do you prefer using this type of product(s)?
11. Have you, or would you, consider using reusable menstrual products? Why or why not, i.e. are there certain factors that prevent you from using RMPs, such as convenience, price, etc.?
12. Have you considered the impact that menstrual products may have on the environment, i.e. disposable menstrual products vs reusable menstrual products?
13. Does the environmental impact of disposable menstrual products concern you?

14. Would you describe menstruation as a positive or negative phenomenon? Why (discuss the manner in which it affects your daily lives, activities, etc.)?
15. Do your cultural or religious beliefs impact your perception and experience of menstruation? If so, how?

Any further comments from your side?

Annexure D: Editing Letter



03 November 2025

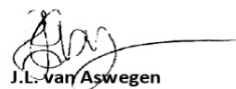
To whom it may concern

Re: Proofreading and academic editing: Ms Jani-Mari Ferreira

I, J.L. van Aswegen of Grammar Guardians, hereby confirm proofreading and academic editing of the master's dissertation entitled *Social and Environmental Aspects of Menstruation* by Ms Jani-Mari Ferreira (student number 2027012612) during October 2025. The editor does not accept responsibility for post-editing changes made by the researcher (document release date: 03 November 2025).

Please contact me on 082 811 6857 or at jeanne@grammarguardians.co.za regarding any queries that may arise.

Kind regards,

A handwritten signature in black ink, appearing to read "J.L. van Aswegen", is written over a horizontal line.

J.L. van Aswegen
Grammar Guardians

Annexure E: Turnitin Report

03 Nov. JM Ferreira Master's Dissertation DRAFT1.docx

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