Unseen and Unheard:

The Hidden Struggles and Socioeconomic Impact of Period Poverty Among Migrant Fishers and Head Porters in the Fisheries Sector in Ghana

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Declaration

I, Katrine Enimil Armah, hereby declare that apart from references to other people's projects and journals which have been stated accordingly, this dissertation has been written independently by me under the supervision of Dr. Anna Karlsdóttir.

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Acronyms and Abbreviations

CSOs	Civil Society Organizations
EUR	Euro
GBV	Gender-based Violence
GHS	Ghana Cedis
GSS	Ghana Statistical Service
ILO	International Labor Organization
LMIC	Low- and Middle-Income Countries
MHM	Menstrual Health and Hygiene
NGOs	Non-Governmental Organizations
SDGs	Sustainable Development Goals
SEM	Socio Ecological Model
SRHR	Sexual Reproductive Health and Right
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
USD	United States Dollars
VAT	Value Added Tax
WASH	Water Sanitation and Hygiene
WHO	World Health Organization

Abstract

Period poverty, a silent challenge marked by inadequate access to safe, affordable menstrual products, water and menstrual education, remains a critical yet often overlooked issue affecting marginalized populations worldwide. In Ghana's fisheries sector, female migrant fishers and head porters represent a particularly vulnerable group within the informal economy, facing economic hardship and high mobility while remaining largely absent from menstrual health research and interventions despite the growing recognition of menstrual health as a development and rights issue. For this population, menstruation is not just a biological process but an economic issue. This study therefore examined the hidden struggles and socioeconomic impact of period poverty among thirty female migrant fishers and head porters in the fisheries sector from Tema Newtown (Greater Accra region) and Kedzi (Volta region) in Ghana. Data was collected using a closed-ended questionnaire and semi-structured open-ended interview and analyzed using Microsoft Excel and Stata BE 17 software. Open-ended responses were grouped into themes following qualitative inductive coding and thematic analysis. The results reveal that 80% had no high school education, 93.3% had children and supported multiple dependents. With monthly income below five hundred Ghana Cedis (GHS 500.00) this population faces economic hardship. The main challenges identified were lack of affordable products (80%) such as sanitary pads and high cost of water (86.7%) for personal hygiene. Participants expressed how menstrual pain negatively affected their ability to work. However, they also cited fear of salary deductions if they missed work due to menstrual pain. The intersection of high dependency burden, low education and low income makes this population more susceptible to period poverty by limiting their access to safe and quality menstrual health resources. Participants expressed the need for affordable products, economic support and education to reduce period poverty. Using the socio-ecological model, recommendations developed include policy and institutional level changes such as tax removal on sanitary products and integration of tailored menstrual health education in existing programs. This study contributes evidence for gender-responsive interventions to address period poverty among one of the overlooked populations in Ghana.

Keywords: Period poverty, socio-ecological model, migrant fishers, head porters, informal sector, fisheries sector, Ghana

1.0 INTRODUCTION

1.1 Background

Period poverty, defined as the lack of access to safe and affordable menstrual products, water, sanitation, hygiene (WASH) facilities, and menstrual health education, disproportionately affects marginalized groups worldwide, particularly migrant and informal workers who face intersecting vulnerabilities related to gendered labor and economic exclusion (Jaafar *et al*., 2023; Patel *et al*., 2022). Globally, it is approximated that about 500 million women and girls experience period poverty, which undermines their dignity, health, education, and economic participation (World Bank, 2019; UNICEF & WHO, 2024). The high costs of sanitary materials, lack of access to WASH facilities, low awareness and education on menstrual hygiene, as well as societal stigma, contribute to this, affecting women's dignity, education, social inclusion, and economic participation (Sommer *et al*., 2015; Michel *et al*., 2022). Patel *et al*., (2022) explains that vulnerable populations such as migrants and informal workers face heightened barriers due to mobility constraints, irregular income streams, and precarious living conditions that disrupt consistent access to menstrual hygiene management (MHM) resources.

In Africa, global challenges become regional problems through widespread poverty, menstruation taboos, weak health infrastructure, and the existence of informal sector employment (Sommer *et al*., 2015; UNESCO, 2019). In terms of sectors with large female participation, the small-scale fishing and informal trade businesses, particularly migrant fishing and head-porter activities, suffer as activities are usually within non-formal environments without the existence of clean water and toilet facilities at the fish and trade sites (Asiedu *et al*., 2023; Appiah *et al*., 2021). Engagement of migrant women within the mentioned employment sectors outside a formal system and a network with potential social security and healthcare services results in the occurrence of adverse menstrual events (Yeboah, 2022). Due to the interaction of stigma and gender dynamics within this sector under poor infrastructural facilities, an increased risk of infection alongside economic burden due to loss of workdays are faced (Opuni *et al*., 2023).

The fisheries sector is a large part of the Ghanaian economy and employs approximately 2.5 million people, but policy responses to the health needs of female migrant fishers and head porters on menstrual health issues remain unheard (Peter & Adjei, 2023; Kyei-Gyamfi, 2023). According to a study by Erinosho (2023) and Owusu-Ofori (2018), there is high cost of menstrual products among these women workers, combined with a lack of WASH facilities in fishing areas in Elmina and Jamestown, Similarly, the unstable living conditions compound menstruation problem and affect the workers' ability to perform activities with dignity. Economically, there is reduced job productivity due to absenteeism and working with discomfort, as well as less participation in community fishing management processes (Yeboah & Amoako, 2022).

Addressing period poverty for female migrant fishers and head-porters in Ghana, therefore requires a multi-faceted approach that combines making sanitary products readily available at affordable prices with provision of appropriate WASH facilities, and raising awareness on menstruation and stigma issues among migrant women. Such interventions must also include the establishment of effective policies that link social protection to informal sector employment in fisheries management (Dwumfour-Asare *et al*., 2024; Gbogbo *et al*., 2025). Inaction would only perpetuate the struggles of women working outside formal frameworks, impacting their lives from health to economic well-being.

1.1.1 Profile of Head Porters and Migrant Fishers within Ghana's Informal Economy

Head porters in Ghana, commonly referred to as **kayayei**, are predominantly female internal migrants who transport goods on their heads for a fee in urban markets and commercial centers. Although precise national statistics are difficult to obtain due to the informal and mobile nature of their work, estimates suggest that over 100,000 head porters operate across major cities such as Accra, Kumasi, and Takoradi, with the majority migrating from the northern regions of Ghana in search of livelihoods (Owusu-Ofori, 2018; Opuni *et al*., 2023). Their work is characterized by low and unstable income, lack of job security, and limited access to basic services, including healthcare and sanitation.

Poverty remains a key driver of migration into head portering and other informal livelihoods. National data indicate that approximately 24–25% of Ghana's population lives below

the national poverty line, with poverty disproportionately concentrated in rural and northern regions where economic opportunities are limited (GSS, 2018). These structural inequalities fuel rural–urban migration, particularly among women with limited formal education, who often transition into informal employment upon arrival in urban centers.

The informal economy is a dominant subsector of Ghana's labor market, employing over 80% of the working population, especially women (GSS, 2018; ILO, 2020). Informal workers, including head porters and migrant fishers, typically operate outside formal labor regulations and social protection systems, making them highly vulnerable to economic shocks, occupational hazards, and poor health outcomes. The absence of legal protection and income stability further exacerbates gendered vulnerabilities within the informal economy.

Migrant fishers are individuals, often seasonal or circular migrants, who move from their home communities to coastal or inland fishing destinations in search of fishing-related livelihoods, including fish harvesting/hunting, processing, and trading. Female migrant fishers frequently engage in post-harvest activities such as fish smoking, descaling, drying, and marketing, often under precarious conditions. Female head porters in the fisheries sector are internal migrants, who earn a living by carrying fish from landing sites to processing facilities and markets loads for traders and shoppers in markets. Both groups share common characteristics of mobility, informality, poverty exposure, and limited access to basic services, situating them among Ghana's most economically and socially marginalized populations.

Marital status can also be linked with vulnerability. Most of the head porters and migrant fishers are not married, separated, divorced or in an unstable marriage, and thus they cannot obtain a steady income source from a partner. Some of them are married but cannot get continuous support from their partner as they are separated for migration. Therefore, they are the sole income earners in the families. For some, they move with their husbands (fishermen) and process the fish their husband catch. In societies that closely associate social protection with household structures, marginalized and unmarried women might have less access to family-based coping mechanisms (Darko *et al*., 2016). Similarly, women who have informal and unstable relationships could be vulnerable to abuse, transactional sex and Gender- based Violence (GBV),

all of which are connected to Sexual Reproductive Health and Right (SRHR) (Amoako *et al*., 2025). In some cases, making them deviant.

1.2 Problem Statement

Period poverty remains a critical yet under-addressed global public health and development challenge, affecting millions of women and girls. Globally, approximately 500 million women and girls are unable to manage menstruation safely and with dignity, resulting in adverse health outcomes, social exclusion, and reduced economic participation (World Bank, 2019; UNICEF & WHO, 2024). The effects of period poverty have serious consequences as leads to increased absenteeism from work and school, heightened vulnerability to infections, and diminished psychosocial well-being (Sommer *et al*., 2015; Michel *et al*., 2022). These impacts are more pronounced among migrant and informal workers whose mobility, unstable income, and exclusion from social protection systems further constrain access to menstrual hygiene management services (Patel *et al*., 2022; Raney, 2024).

In the African context, the burden of period poverty is intensified by underlying structural inequalities, high poverty, and poor access to water and sanitation facilities. Women who are engaged in the laborious sector of fisheries on the continent, working informally, are multiply disadvantaged by their gender, economic insecurity and limited access to healthcare facilities (Lund, 2020; Appiah *et al*., 2021). Existing literature indicates that menstrual hygiene has negative impacts on women in mobile work systems in Africa with regard to productivity, absenteeism and risk of infection (Miiro *et al*., 2018; Asiedu *et al*., 2023). However, little evidence exists documenting the needs of migrant women workers in the fisheries work and migrant work systems. Despite a growing debate on menstrual hygiene among development practitioners and human rights advocates, the needs of women in the fisheries work have remained under-documented.

This research will focus on Ghana, a country in which the fisheries industry is a significant pillar of food security and livelihood for millions of people, characterized by extreme poverty and informality (Adjei, 2023; Dzidza, 2016). Migrant fishers and female head porters in coastal settlements like Elmina and Apam face extreme poverty and insecurity amid sub-standard living

accommodations, uncertain incomes and lacking access to basic WASH services (Kyei-Gyamfi, 2023; Owusu-Ofori, 2018). Available evidence suggests female head porters face multiple menstrual hygiene management challenges, compelled to resort to unhygienic practices due to the unaffordability of sanitary pads and lack of privacy (Opuni *et al*., 2023; Gbogbo *et al.,* 2025). Although some literature has documented the existence of period poverty in Ghana, little evidence on the socio-economic consequences of period poverty on migrant fishers and female head porters exists. This gap in evidence hinders the design of sustainable and effective policy interventions, aiming at managing menstrual health as a component of gender equality, sustainable fisheries and development. The examination of this issue is pertinent for enhancing sustainable development and mitigating socio-economic challenges for Ghanaian women.

1.3 Justification

This research is relevant because it is one of the first to address a crucial but underexplored link between public health, gender equality, and livelihood sustainability in Ghana's fishing industry, namely the socio-economic impacts of menstrual poverty among migrant women fishers and head porters. Migrant fishers and head porters are typically ignorant of formal health and social protection mechanisms and are vulnerable to menstrual-related disadvantages which impair their productivity, well-being and dignity. Focusing on this marginalized group thus enriches understanding about how menstrual-related disadvantages intertwine with issues of migration, informal labor, and poverty to determine women's realities.

Globally, the research will contribute to the growing understanding of menstrual health as human rights and development issue. Poor health outcomes, decreased participation in economic life and social exclusion have been associated with menstrual poverty. Making the experience of women in an underserved occupational group a part of the global discourse on menstrual health will facilitate advocating for gender equitable health services. This is particularly relevant for SDG 3 (Good Health and Well-being) and SDG 5 (Gender Equality), which seek health for all and gender equality, respectively.

Regionally, this study contributes to Africa's efforts at addressing the structural vulnerabilities faced by women working in informal and migratory livelihoods. In environments

where migrant fishers and head porters work without sanitation facilities, menstrual products and formal support, the study demonstrates the impacts of menstrual poverty on women's health and participation in society. Specifically, it provides an evidence base to inform and advocate for ways to empower working women with better economic security and dignity in the workplace. This relates directly to SDG 8 (Decent Work and Economic Growth).

At the national level, this study is relevant to Ghana's development and gender equity agenda. Although the fisheries sector plays an important role in livelihoods and food security, it has not fully met the social and health needs of women in the sector. The findings can inform gender responsive fisheries policy, social protection programs and targeted interventions for menstrual health, supporting SDG 6 (Clean Water and Sanitation) and SDG 10 (Reduced Inequalities). It will inform policymaking, advocacy for menstrual health inclusion, and equitable and sustainable development for marginalized women in Ghana.

1.4 Objectives

1. To identify the challenges female migrant fishers and head porters face in accessing menstrual hygiene products and facilities.
2. To examine the impact of period poverty on their work, income, and daily lives.
3. To explore coping strategies used to manage menstrual health with limited resources
4. To recommend ways to improve conditions of female migrant fishers and head porters in the fisheries sector

1.5 Research Questions

1. What challenges do migrant fishers and head porters face when accessing menstrual hygiene products and facilities?

2. How does period poverty affect their livelihoods, economic stability, and overall well-being daily?

3. What coping mechanisms do migrant fishers and head porters use to manage menstrual health?

2.0 LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Intersectionality

This study used intersectionality as a theoretical framework. Intersectionality as hypothesized by Crenshaw (1989) provides an understanding of overlapping social identities such as gender, migratory status, age and socioeconomic status and how these interact to produce multiple compounded disadvantages for certain groups of individuals. In the Fisheries sector context, the case of this population cannot be explained by only highlighting the gender aspect but through other identities such as their informal employment, migratory status, socioeconomic status, and some deeply rooted cultural norms within their societies. These identities and conditions increase their menstrual vulnerability beyond what female non-migrants and other formally employed women experience. According to Ofori *et al*., (2025), these intersecting structural and socio-cultural factors highlight the need for integrated interventions that address not only product access and WASH infrastructure, but also gender power relations, reproductive health services, and social protection mechanisms within Ghana's fisheries and informal labor sectors.

2.1.2 Socio-Ecological Model

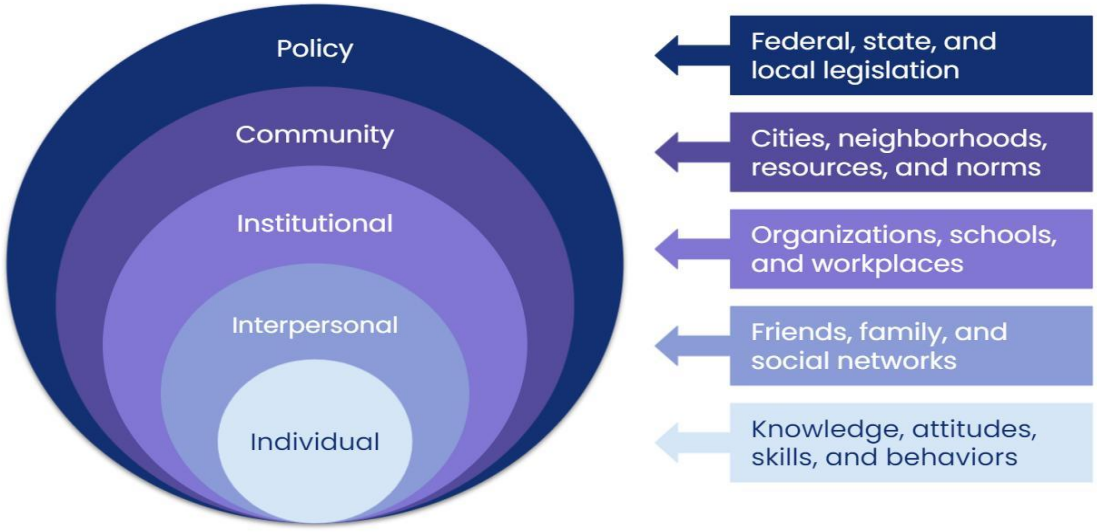

Figure 1: The Socio-Ecological framework (Please see the original source below)

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The Socio-Ecological Model (SEM) complements the intersectionality theory in this case. It was developed by Bronfenbrenner (1979) and is often applied in public health practice and research. The SEM provides a map for how multiple societal levels shape and sustains period poverty for certain individuals. It suggests that factors such as policies at interpersonal, community, institutional, and national level determine people's health experiences, rather than merely individual factors (Sharma *et al*., 2022). At the individual level, it is characterized by this population's knowledge, beliefs, and attitudes. It also includes their low incomes and limited knowledge of menstrual health issues. At the interpersonal level, due to their migratory status, they are often separated from their families and social support systems, which would help them manage their menstrual health properly, thus leaving them vulnerable and isolated.

At the community level, it is evident that most fish processing sites, landing sites, and marketplaces lack decent washrooms, access to clean water, and safe disposal facilities, making the management of menstruation challenging. At the institutional level, the Fisheries Commission and other stakeholders often do productivity-based capacity-building programs for the women in the value chain without focusing on reproductive health. This may be due to the technical focus of the fisheries sector. At the policy level, the menstrual health initiatives in Ghana focus on school-age adolescent girls, leaving the women in the informal sectors neglected and without support. According to Sharma *et al.,* (2022), interventions towards period poverty must be applied at all levels of the SEM. Angeli *et al.,* (2022) states that, aside the health outcomes from these compounded levels, there are direct socioeconomic outcomes for these women including reduced productivity and income which worsening the cycle of poverty in their daily lives.

2.2 Conceptual Framework

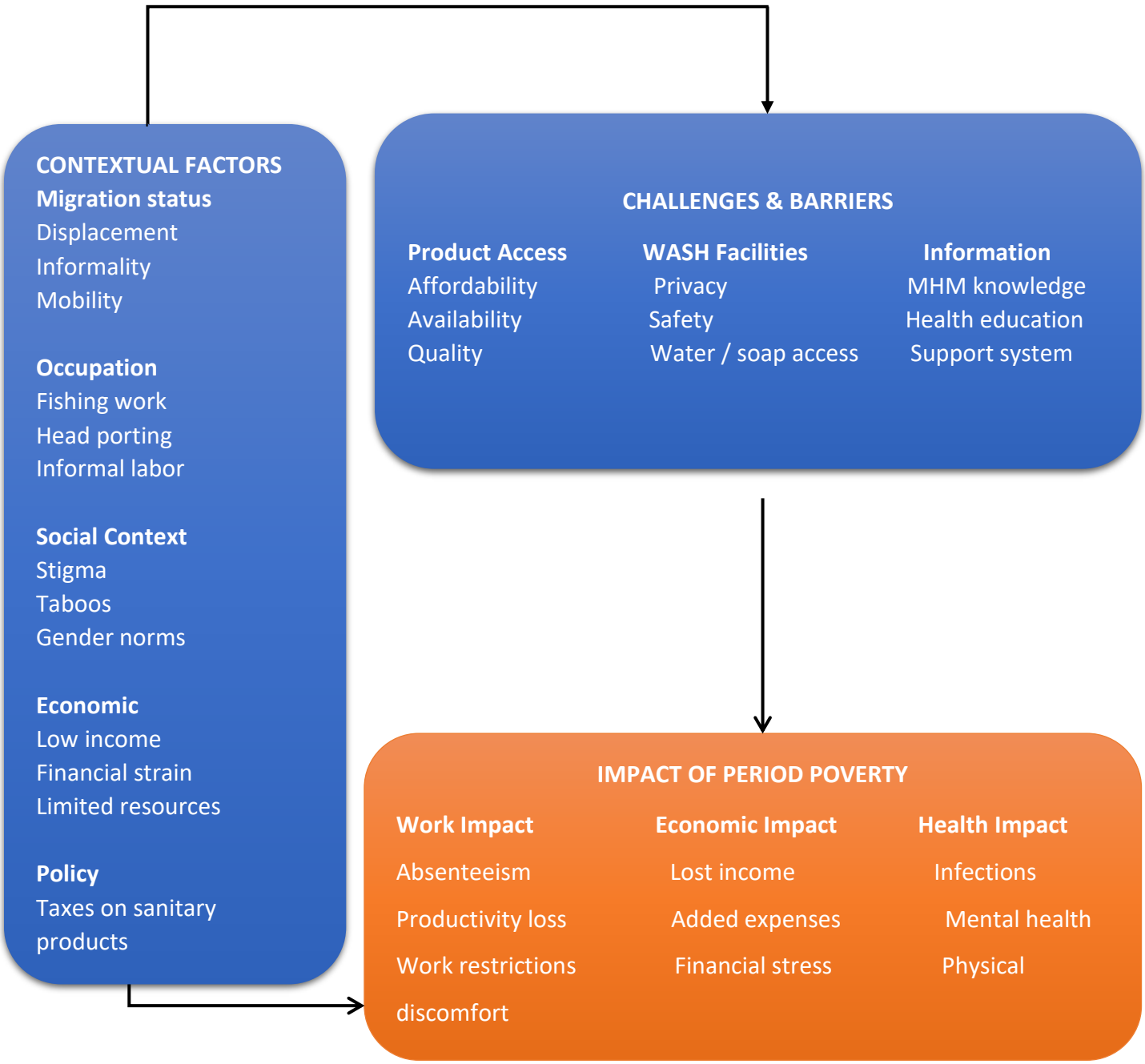

Figure 2: Conceptual Framework of Period Poverty

2.2.1 Narration of Conceptual Framework

The conceptual framework presented builds on literature. The conceptual framework for period poverty among migrant fishers and head porters in Ghana's fisheries sector indicates that there are complex social and economic factors that influence women's lives. At the core of the framework is the view that access to affordable products, menstrual health education and inadequate water, sanitation, and hygiene (WASH) facilities, are key barriers to addressing menstruation with dignity. Further complicating the picture are migrants' status, informality of occupation, and mobility, which can make it harder to secure income and protection. Women who engage in informal fisheries and head porting often operate outlawed jurisdictions, leaving them vulnerable to exclusion from health services and protections that would prevent these problems (Patel *et al*., 2022; Yeboah, 2022).

The framework also considers the impact that social context, especially stigma, taboos and gender norms, have on women's exclusion and suppression. Plus, cultural perceptions about menstruation encourage discrimination and do not allow women to play their role in the governance of the community, thus perpetuating cycles of invisibility and marginalization (Sommer *et al.,* 2015; Michel *et al*., 2022). The challenges cited above have significant impacts across work, economic, and health. Work-related consequences include absenteeism, productivity loss, and restrictions on activities such as participation in fisheries. Economic impacts include lost income, additional costs, and financial distress, and injuries (Opuni *et al*., 2023; Raney, 2024).

In tracing these pathways, we show that period poverty is not just a health issue, but also a socioeconomic issue directly impacting women's livelihoods, resilience, and empowerment in the fisheries sector. Through the interplay of barriers, contexts, and impacts, we also prove how period poverty perpetuates poverty and exclusion of migrant fishers and head porters. Addressing the needs of mobile women and men is not as simple as distributing menstrual products on a budget. The community education program will need to remove all stigma and taboo, while providing social protection to the informal sector of the fishery and the market (Dwumfour-Asare *et al*., 2024; Gbogbo *et al*., 2025). The cycle of discrimination needs to end,

and the suggestions above will help make menstrual hygiene a matter of public health and development in Ghana.

2.3 Challenges Female Migrant Fishers and Head Porters face in accessing Menstrual Hygiene products and facilities

2.3.1 Global Context of Menstrual Hygiene Challenges

Globally, managing menstruation is a significant issue in public health and gender equality, as hundreds of millions of women and girls worldwide lack access to sanitary products, safe sanitation facilities, and menstrual health education. The World Bank estimates that almost 500 million females lack adequate resources to manage their menstruation properly, compromising their health, dignity, education and economic activity (World Bank, 2019). In the developing world, lack of appropriate menstrual hygiene management facilities, prohibitively high cost of disposable menstrual products and deeply entrenched stigmas that prevent social integration and participation in work are the prevalent challenges (UNICEF & WHO, 2024; Jaafar *et al*., 2023). Migration and informal labor lead to heightened risk of exposure to the consequences of limited menstrual hygiene practices, as it affects mobility and stable income as well as formal access to health care (Patel *et al*., 2022). Such circumstances consequently lead to a loss of school attendance and employment opportunities, decreased productivity, psychological distress, increased infection from unsafe menstrual materials, etc. (Michel *et al*., 2022; Raney, 2024).

2.3.2 Menstrual Hygiene Barriers in Africa

On the African continent, these worldwide barriers to the proper management of menstruation are exacerbated by structural inequality such as widespread poverty, poor provision of private sanitation facilities and strong cultural stigmas around menstruation (UNICEF & WHO, 2024; Gbogbo *et al*., 2025). Female informal workers such as market vendors and small-scale fishers often operate with neither safe menstrual management space nor cheap menstrual products available (Asiedu *et al*., 2023; Appiah *et al.,* 2021). Studies in sub-Saharan Africa have shown that while girls often miss school when they menstruate due to their inability to access sanitation facilities and sanitary products at school, this pattern often continues into adulthood for women in the informal sectors (Miiro *et al.,* 2018). In particular, migrant women who work in mobile

trades will face greater disadvantages as nomadic working styles tend to restrict stable housing and sanitary infrastructure access (Lund, 2020), causing loss of earnings.

2.3.3 Access Challenges for Female Migrant Fishers and Head Porters in Ghana

Specifically in Ghana's Fisheries sector, a major employer, female migrant fishers and head porters (kayayei) endure significant menstrual hygiene barriers due to the poor provision of sanitation facilities with clean water in fishing camps close to landing sites or informal housing. This inadequacy is compounded by a lack of gender-sensitive sanitary spaces at the landing sites or markets where women work. Available studies show that insufficient gender-sensitive sanitary facilities exist in communities like Elmina and James Town in Ghana, which is especially critical in densely populated areas where no toilets or affordable public toilets are available (Erinosho, 2023). In the case of female head porters, they migrate from the northern part of the country to cities such as Accra and Kumasi, where they live in overcrowded, dirty conditions that significantly inhibit hygienic management of their menses (Owusu-Ofori, 2018; Opuni *et al*., 2023) in part due to sleeping in open spaces or in shelters, which hinders the privacy required. Furthermore, this economic predicament is exacerbated by a cash constraint, pushing them to seek the cheapest alternatives for menstrual hygiene or skip work during menstruation, which ultimately results in income loss (Appiah *et al*., 2021).

For women whose income relies on daily physical labor, even brief interruptions due to menstruation are costly. Stigmatization of menstruation within communities limits the voice given to these women and keeps their needs excluded from policy formulation and program design for improved health (Gbogbo *et al*., 2025). Community-based interventions on menstrual health in Ghana have revealed that product distribution accompanied by education is an effective method to improve practice; it requires adequate provision, education and support from community members and leadership, including the need to dismantle stigmas and misconceptions associated with menstruation (Dwumfour-Asare *et al*., 2024). In sum, female migrant fishers and head porters in Ghana must have easy access to affordable sanitary products, effective provision of WASH facilities in homes and workplaces and community mobilization to reduce stigma.

2.3.4 Taxes on Sanitary Pads in Ghana

The taxation of sanitary pads in Ghana has historically included a 15% Value Added Tax (VAT) and a 20% import duty, categorizing these essential menstrual hygiene products as consumer goods rather than health necessities, which significantly increased their retail prices and limited affordability for many women, especially those in informal sectors like migrant fishers and head porters (Asumah *et al*., 2023). This high cost has been linked to unsafe menstrual hygiene practices, absenteeism from work, and increased health risks among women unable to afford adequate products (Rossouw & Ross, 2021; Appiah-Agyekum *et al*., 2025). In response, Ghana's government removed VAT on locally manufactured sanitary pads and eliminated import duties on raw materials in 2023 to promote local production and reduce costs. Additionally, a private member's bill proposed the complete removal of VAT on all menstrual products and their reclassification as essential social goods to protect menstrual health as a human right (Shomuyiwa *et al*., 2024).

Despite these reforms, challenges persist due to the limited availability of local products, the continued dominance of costly imports, uneven enforcement of tax exemptions, and low awareness among consumers and traders (Gbogbo *et al*., 2025). The taxation debate highlights how fiscal policies intersect with gender equity by disproportionately burdening women financially for essential health needs; tax exemptions align with Sustainable Development Goals on health and gender equality but require sustained advocacy and investment in local manufacturing to ensure equitable access for all women in Ghana's informal economy (Shomuyiwa *et al*., 2024; Smith *et al*., 2025).

2.3.5 Gendered Norms in the Fisheries Sector in Ghana

Besides the financial and physical barriers, there are also gender barriers for women involved in fishing. In some fishing communities, women are forbidden to participate in fishing due to some taboos. It is believed that women, particularly those menstruating, should not be allowed to board fishing boats or touch certain fishing gear. Though this study does not directly mention the menstrual experiences from these fishing taboos, literature explains how it influences power relations. Therefore, women are confined to the lowest-paid tasks in the post-harvest sector, for example, fish processing and trade, instead of fishing, and as a result, women have limited

opportunities to earn money. According to Addo & Berchie (2021), these instances reflect a broader pattern of inequitable gender norms which restrict women's roles in society. This does not only limits women's income potential but further reinforces stigma concerning menstruation therefore deepening marginalization and silence in coastal fishing communities (Mohamed *et al*., 2018).

2.3.6 SRHR Service Gaps

Sexual Reproductive Health and Right (SRHR) services are an important aspect of period poverty. In many countries, most essential SRHR services are paid out of pocket because it is not included in their Essential Package of Healthcare Services (EPHS) and thus makes it inaccessible to those who are economically burdened (Ravindran & Govender, 2020). For women in the informal sector, most access these services when donor partners and NGOs are available. However, over a period, the decrease in donor-funded health services reduced the accessibility of health facilities for the most vulnerable group. For instance, donor funds which supported family planning and contraception supply and livelihood projects through USAID have after they were cut back resulted in serious limitations of the availability of SRHR support to women in certain communities. As explained by Chandra-Mouli *et al*., 2019, it influences the health seeking behaviors of informal sector women, who are migrant women, and most migrant women cannot access public health facilities due to various barriers, including the cost of accessing the health facilities. As women cannot access contraception and other reproductive health facilities, unexpected pregnancies occur, and these lead to increasing poverty and dependency among women (Ahmed Shallo *et al*., 2017).

2.4 Impact of Period Poverty on their work, income, and daily lives

2.4.1 Global Impact of Period Poverty

Globally, period poverty refers to the insufficient access to menstrual products, adequate sanitation facilities, and correct knowledge about menstruation, which significantly limits women's access to work and daily functioning. Close to 500 million women and girls lack access to such facilities worldwide, threatening their health, dignity, education and productivity (World Bank, 2019; UNICEF & WHO, 2024). This contributes to missed school and work, reduced

efficiency, and psychological distress (Sommer *et al*., 2017), and it has been documented that due to poor menstruation management facilities, numerous women in various low-and-middle-income countries may miss days of work or school per month. The extent of loss in women's productivity in LMICs has been significantly identified by Rossouw and Ross (2021), who identified significant correlations between the limitations of menstruation management practices and a reduction in the workforce due to absenteeism or low productivity. Coupled with existing social inequalities, menstruation-related problems reinforce existing marginalization and limit women's income opportunities (Loughnan *et al*., 2020; Michel *et al*., 2022). Internationally, the psychological cost of menstruation poverty is high and documented. Women report shame, anxiety and lack of dignity when faced with the inability to manage menses in workspaces where toilets are not clean, private or available (UNICEF & WHO, 2024; Raney, 2024), thereby impacting confidence, hindering social interaction and limiting economic opportunities.

2.4.2 Menstrual Health and Work in Africa

In Africa, menarche-related limitations intersect with poverty, work and insufficient facilities, thereby compounding the already existing high risks of period poverty. Work in labor-intensive and informal jobs such as fisheries, market trade and agriculture are greatly impacted due to menstruation-related limitations in productivity, causing some loss of income over several days every month (Phillips- Howard *et al*., 2020; Gbogbo *et al*., 2025). Studies have consistently reported that many women in informal markets and rural areas do not turn up for work during menstruation due to inadequate and unhygienic toilets and limited access to commercially produced menstrual products (Appiah *et al*., 2021). It has been found that menarche-related limitations in rural East Africa account for seasonal income fluctuations in the income women earn from agricultural and informal market work (Miiro *et al*., 2018). Social taboos around menses add to the complexity of issues. In many African cultures, menarche is a taboo, thus limiting female participation in public life and thereby discouraging demand for effective workplaces' menstrual hygiene management infrastructure (UNICEF & WHO, 2024).

2.4.3 Impact in Ghana: Fisheries and Market Informality

In Ghana, existing socioeconomic vulnerabilities intersected by period poverty influence work, income and women's daily activities. For women who are migrant fishers and head porters

(kayayei), there are often no appropriate sanitation facilities at either their homes close to landing sites or at markets, compelling them to manage menses under unsanitary and dehumanizing conditions (Kyei-Gyamfi, 2023; Erinosho, 2023). Studies confirm that women who work in fishing communities and markets often miss workdays during menstruation due to worry about leakage or inadequacy of toilets, which affects income earned on a daily basis (Opuni *et al*., 2023). Due to financial limitations, head potters' income is drastically affected since menstruation requires them to buy expensive menstrual products, and when they can't afford any, the alternatives they resort to (cloth, etc.) require careful handling in hygiene, which is challenging at the marketplaces (Appiah *et al*., 2021; Owusu-Ofori, 2018). Inability to work due to health-related complications and psychological trauma arising from these factors cumulatively reduces earnings for women who have livelihoods tied to their physical ability to earn an income.

Cultural practices such as avoidance of menarche discussions and activities further contribute to the lack of prioritization of menstrual health issues in policy frameworks, such as the Ghana health and labor policies (Gbogbo *et al*., 2025). It is confirmed that some initiatives in Ghana focus on integrating product delivery with education; however, such interventions require scale to be able to impact millions of women as well as address sociocultural barriers to menstrual health (Dwumfour-Asare *et al*., 2024). Overall, literature shows a significant overlap of period poverty impact on work, income and daily lives of women in Africa in general and Ghana in particular due to socioeconomic challenges such as those faced by migrant fishers and head porters. The intervention strategies should aim at the provision of cheap, affordable sanitary products, infrastructure, stigma reduction and social protections for informal female workers.

2.5 Coping Strategies used to manage Menstrual Health with limited resources, and recommend ways to improve their conditions, where possible

2.5.1 Global Coping Strategies and Challenges

Many studies around the world document the many alternative ways in which women and girls deal with menstruation under severe scarcity of menstrual products and sanitation facilities. Such coping mechanisms often include the use of cloths, tissue papers and/or any other absorbent materials available (Hennegan & Montgomery, 2017; Jaafar *et al*., 2023). Since these alternatives are usually reused without sanitation, infection risk increases, and discomfort is evident. Some

women in humanitarian crises (migrant women or refugees) use social support systems to get supplies (Patel *et al*., 2022). Economic scarcity determines a woman's choice of coping mechanisms, but also social/cultural factors. Cultural stigma surrounding menstruation dictates some of women's coping choices, particularly by discouraging them from using adequate sanitation facilities due to fear of social stigmas and harassment (Sommer *et al*., 2017). Other psychosocial strategies employed include restricting physical activity and avoiding social activities during menstruation, limiting participation in education and work (Rossouw & Ross, 2021; Raney, 2024). Recommendations from a global perspective range from free supply of menstrual products, integration of menstrual health into public health curricula and providing clean sanitary facilities at all levels (workplaces, schools, etc.) (Loughnan *et al*., 2020; UNICEF & WHO, 2024). Long-term strategies that position menstrual health as a human right and involve policies to consider sanitary pads as necessary medical provisions have been highly recommended (Michel *et al*., 2022).

2.5.2 Coping Mechanisms in the African Context

Similar coping behaviors observed in global literature are also reported in Africa, but context-specific cultural beliefs influence these behaviors more directly. Use of improvised materials like old cloths, leaves, cotton wool, and mattress stuffing is prevalent in many parts of Africa (Phillips-Howard *et al*., 2016). For women in poor and informal environments in Africa, their time of menstruation may dictate how they manage their menstruation in relation to the availability of water sources and their travel during that time due to a lack of private disposal facilities and places to change (Sommer *et al*., 2017; UNESCO, 2019). In many African cultures, women pool together their resources for menstrual materials as well as form mutual aid groups to ensure everyone has products to use (Patel *et al*., 2022). While social entrepreneurs in Africa have developed low-cost reusable pads and cups, which are effective but require a reliable water supply for cleaning and drying of the products, the lack of access to private washing facilities makes it challenging for women to use them efficiently (Rossouw & Ross, 2021).

Nonetheless, in African communities, there is an entrenched culture of stigmatization and taboo around menses, which places restrictions on women and limits social mobility and participation in work and household activities (UNICEF & WHO, 2024). Lack of knowledge or

communication about menses means many women are unable to make known their menstruation-related problems and therefore do not benefit from any intervention programs initiated on their behalf. Holistic approaches to improve menstrual health and dignity for women in Africa suggest the provision of affordable sanitary products, WASH facilities that accommodate female dignity, education on correct hygiene practices and social mobilization to reduce stigmatization (Loughnan *et al*., 2020; Gbogbo *et al*., 2025).

2.5.3 Coping and Improvement Strategies in Ghana

In Ghana, similar to other African countries, inadequate menstrual hygiene coping mechanisms are observed among the low-resource populations, particularly migrant female fishers and head porters (kayayei), who are often deprived of private washing and changing spaces at their workplaces and residences (Kyei-Gyamfi, 2023; Opuni *et al*., 2023). Many of these women work in landing sites and markets, areas that are predominantly lacking adequate facilities to support proper handling of menstrual flows. This situation increases the likelihood of disease due to poor menstrual hygiene practices. Community support groups and local aid networks have been identified as ways in which women share menstrual products and support each other in coping with period poverty (Gbogbo *et al*., 2025). NGOs and Community health volunteers initiate interventions which primarily revolve around the provision of reusable sanitary pads and menstrual hygiene education.

However, these programs are usually small-scale (Dwumfour-Asare *et al*., 2024). Improvements in water, sanitation and hygiene (WASH) infrastructure with gender-sensitive provision and disposal facilities at fish landing sites, markets and informal settlements will play an indispensable role in alleviating menstrual hygiene burdens for these vulnerable groups. Subsidized supply of sanitary products, access to social welfare support, community-based education and advocacy are critical intervention strategies that need to be considered for sustainable women's menstrual health (Gbogbo *et al*., 2025; Dwumfour-Asare *et al*., 2024). The strategies listed above need to consider specific cultural nuances that pertain to menstruation in Ghana and how best to integrate menstrual health interventions with public health and social protection interventions.

3.0 METHODOLOGY

This study was conducted in Ghana with a focus on migrant fishers and head porters in the fisheries sector. This chapter introduces the study design, research methods and study area for the research work.

3.1 Study Context and Population

The study population were migrant fishers and head porters living in Tema Newtown in the Greater Accra region and Kedzi in the Volta region of Ghana. The population was used for this study because of their heightened vulnerability and susceptibility to period poverty due to factors such as limited access to WASH facilities, migration status, unstable livelihoods and limited access to menstrual hygiene resources and services.

3.2 Study Design and Data Collection

A mixed-method study design was adopted for this study using both quantitative and quantitative approaches. A non-probability sampling technique was used for the study. For migrants who qualified to be in the inclusion criteria, a purposive sampling method was used within the selected communities. For participants who were hard to reach, the study resorted to using snowball sampling methods where necessary. The data was collected using a structured questionnaire on kobo toolbox and administered through one-on-one interviews. Data collection tools included questionnaires (Appendix II) consisted of closed-ended questions to collect quantitative data and semi structured interview guide to capture qualitative insights into participants' experiences, coping strategies, and challenges related to period poverty. The questionnaire was in two parts, the quantitative had the closed-ended questions and the qualitative had the open-ended questions. Interviews were conducted in languages (Ewe, Ga, Twi and English) familiar to the participants, with the support of fisheries officers and trained research assistants. In all, thirty (30) respondents were interviewed for this study, with each interview lasting about 10 – 15 minutes.

3.3 Inclusion and Exclusion Criteria

3.3.1 Inclusion Criteria

Participants who were either migrant fishers or head porters living within the selected communities, were of reproductive age (15-45), had experienced menstruation and were willing to provide informed consent were included in the study.

3.3.2 Exclusion Criteria

Individuals who were not migrant fishers or head porters were excluded from the study. Participants who declined consent were also excluded from the study.

3.4 Data Processing and Analysis

Quantitative data was downloaded from kobo toolbox to excel and uploaded to Stata version 17 to be cleaned and coded for analysis. Descriptive statistics were used to summarize socio-demographic characteristics and presented as frequencies and percentages in graphs and tables, and continuous variables summarized using means and standard deviations. Refer to Appendix III for further statistical validity.

Qualitative data from in-depth interviews were transcribed, coded inductively and analyzed inductively. Coding was conducted to identify patterns, categories and themes related to participants' experiences of period poverty. Data saturation was reached after 12 participants, indicating that no new themes were emerging. Themes were then reviewed and refined to ensure an accurate representation of participants' perspectives.

3.5 Ethical Consideration

3.5.1 Participants Consent

The consent of the participants was obtained verbally before commencing the interviews. The aims and objectives for study were clearly explained to the participants who were assured that the study was for research and academic purposes only. Participation was entirely voluntary.

3.5.2 Risks and Benefits

The participants were assured that there is minimal risk involved in participating in this study. There were no direct benefits to the participants for now. However, their participation will help provide more visibility to them in the fisheries value chain. For the purpose of research, it will help in policy and decision-making.

3.5.3 Confidentiality and anonymity

Participants were assured of their anonymity and that any information given was used solely for academic and research purposes.

3.5.4 Researchers Positionality

This research topic stemmed from a personal experience. I recall a time when I was budgeting carefully to buy sanitary pads for myself and my little sister. I remember complaining so much about the cost of pads these days and how sometimes we had to use two packs each for the month. Then I found myself wondering about the women I work with who once mentioned during a field exercise, how they are paid meagre amounts and sometimes paid in fish, food or clothes and how they were coping with this same need. As a Fisheries officer in Ghana, this question became the foundation of my study. It gave me the motivation and familiarity to conceptualize my work. I, however, remained conscious to let the participants' voices be heard and their experiences to lead the findings.

4.0 RESULTS

This chapter presents the findings from the study on the hidden struggles and socioeconomic impact of period poverty and its impacts on the daily lives of migrant fishers and head porters in Ghana. A total of 30 participants were used in the study. The results were grouped under four (4) sub-topics: (i) Sociodemographic Characteristics (ii) the challenges female migrant fishers and head porters face in accessing menstrual hygiene products and facilities (iii) the impact of period poverty on their work, income, and daily lives and (iv) coping strategies used to manage menstrual health with limited resources and recommend ways to improve their conditions. The statistical validity of the results is found in Appendix II.

4.1. Sociodemographic Characteristics of Study Participants

The tables in this section present the sociodemographic characteristics of the study participants.

- Age

Majority 18 (60.0%) of respondents were aged 20–29 years. The mean age of respondents was 26.2 years (± 6.1), showing that most of them were young and in their reproductive age. Overview of the age of participants is shown in Table 1.

Table 1: Age groups of Study Participants (N = 30)

Variables	Frequency (N=30)	Percent (%)
Age group (years)		
15–19	4	13.4
20–29	18	60.0
30–39	7	23.3
40+	1	3.3
Mean age (26.2 ± 6.1)		

- Marital Status

Table 2 describes marital status of the participants. Nearly half, 14 (46.7%) of the participants were single, while 13 (43.3%) were married. This finding reveals that the participants were either single or married.

Table 2: Marital Status of Study Participants (N = 30)

Variables	Frequency (N=30)	Percent (%)
Marital Status		
Single	14	46.7
Married	13	43.3
Divorced	2	6.7
Widowed	1	3.3

- Parity and Dependency

Regarding parity, almost all 28 (93.3%) respondents had varying number of children to provide for whereas only 2 (6.7%) did not have children as described in Table 3 below. This indicates that the respondents had one or more children with moderate to high parity rates. It further mirrors that they have childcare obligations in addition to their individual needs.

Concerning the number of people respondents provided for, the majority, or 24 persons (80%), supported four or more individuals as outlined in Table 3. This indicates that a significant proportion of participants had substantial household and financial responsibilities that further makes them financially vulnerable.

Table 3: Parity and Dependency of Study Participants (N = 30)

Variables	Frequency (N=30)	Percent (%)
Number of children		
0	2	6.7
1–2	9	30.0
3–4	14	46.6

5+	5	16.7
Number of people provided for		
0–3	6	20.0
4–6	17	56.7
7+	7	23.3

- Educational Level

For educational levels, it shows that nearly half, (43.3%) 13 of the respondents had no formal education, while 11 (36.7%) completed primary school as shown in Table 4. This suggests that majority of respondents had relatively low levels of formal education. This is important because it reflects the kind of knowledge and practices on menstrual hygiene that they engage in. Additionally, it keeps them in the poverty loop and makes them more a vulnerable group in hierarchy of society.

Table 4: Educational Level of Study Participants (N = 30)

Variable	Frequency (N=30)	Percent (%)
Educational Level		
None	13	43.3
Primary School	11	36.7
Junior High School	4	13.4
Senior High School	1	3.3
Tertiary (University)	1	3.3

- Monthly Income of Informants

Table 5 describes the method of payment of participants and their monthly income. While most 21 (76.7) were paid with money, others were paid with fish, food stuff and clothes. The monthly income of participants ranged from GHS 80.00 to GHS 4000.00 equivalent to 7 EUR – 321 EUR. They were then categorized into three groups with the majority, 20 (66.7%) falling below GHS 500.00 which is less than Ghana's minimum wage. Few 2 (6.7%) of them earned between GHS

500.00 – GHS 1,000.00 whilst 3 (10%) earned above GHS 2000.00, 5 (16.7%) preferred not to speak about their income. This shows how sensitive it is to reveal one's income in the Ghanaian setting especially when the income is low. However, it may also reflect low income. It was evident that those who earned GHS 4000.00 are clearly outliers in this case however, the mean income of this distribution was GHS 578.3. This shows how majority of the participants live in or close to poverty based on income distribution. The data depicts important information to understand the severity of period poverty in the next sections.

Table 5: Monthly income of Study Participants (N = 30)

Variables	Frequency (N=30)	Percent (%)
Method of payment of salary		
Fish	4	13.3
Food stuffs	2	6.7
Clothes	1	3.3
Money	23	76.7
Income (GHS)		
Below 500	20	66.7
500- 1000	2	6.7
Above 2000	3	10
Prefer not to say	5	16.6

4.2. Challenges in Accessing Menstrual Hygiene Products and Facilities

- Types of Menstrual Products Used

Participants were asked what kind of menstrual products they often use during menstruation. The statistics show that majority, 13 (43%) use Rags/Napkin/Old clothes, 11 (37%) use sanitary pads, 4 (13%) use Tissue/T-roll and 2 (7%) use diapers. It was, however, noted that some use a combination of any of the options provided as seen in Figure 3.

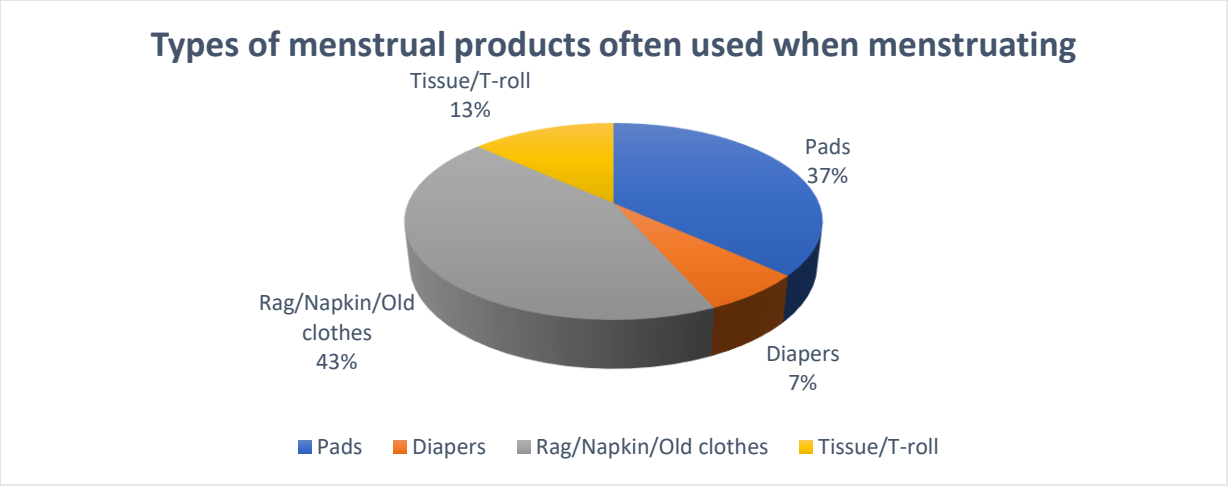

Figure 3: The types of menstrual products used by migrant fishers and head porters

Figure 4: Pictures of old clothes used to manage menstruation

- Challenges faced when accessing menstrual hygiene products

Figure 5 presents the challenges female migrant fishers and head porters face in accessing menstrual hygiene products and facilities. The findings revealed that 15 respondents (50%) reported the high cost of sanitary products. Additionally, 9 (30%) participants reported on issues and difficulties in accessing water as a challenge, indicating a notable challenge. The other challenges reported are shown in Figure 5. The difficulty in accessing water shows a concern especially for those who use reusable menstrual products.

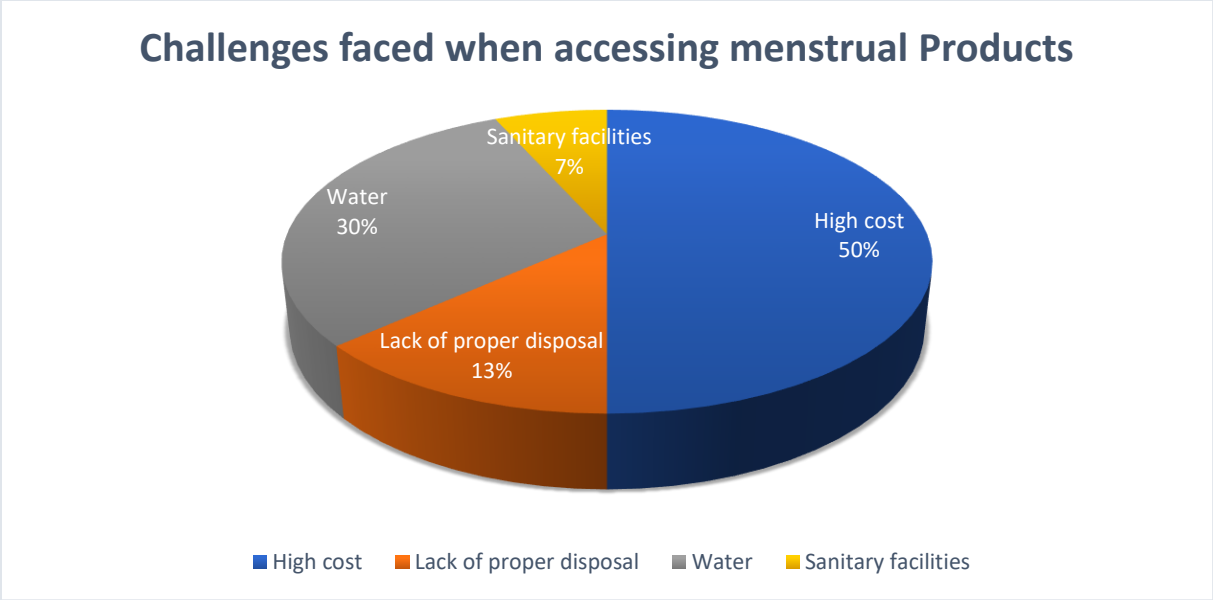

Figure 5: Challenges faced when accessing menstrual Products and Facilities

- Cost of Sanitary Products

On average, participants reported spending between GHS 15.00 - GHS 60.00 per month on sanitary products as seen in Figure 6. For the respondents who earn below GHS 500 per month, the cost of sanitary products may account for about 3% -12 % of their income.

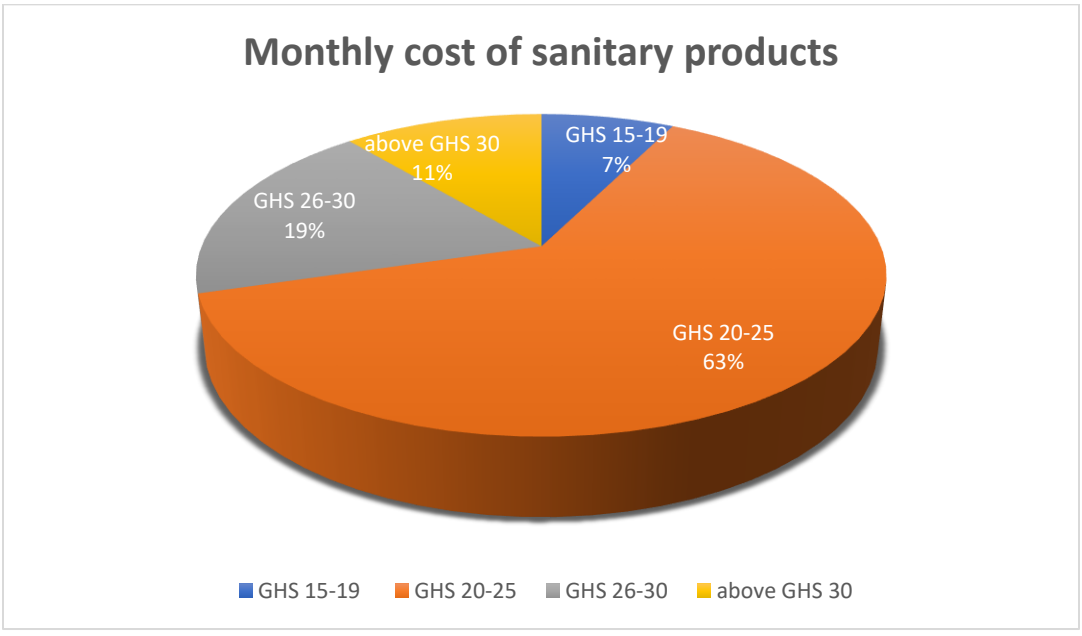

Figure 6: Average cost of sanitary products monthly

- Access to Water

With regards to access to water and sanitation facilities during menstruation, it was reported that 23 (76.7%) of respondents had access, whereas 7 (23.3%) lacked access. Among those with access, 7 (30.4%) reported always having access, 14 (60.9%) had access sometimes, and 2 (8.7%) never had access.

Table 6: Access to water (N = 30)

Variables	Frequency (N=30)	Percent (%)
Access to water		
Yes	23	76.7
No	7	23.3
Frequency of Access		
Always	7	30.4
Sometimes	14	60.9
None	2	8.7

Figure 7: Picture of a 4L gallon used by a 5-person household daily

- Challenges related to access to water

The major water-related challenges were also highlighted, explaining high cost as the main issue, affecting 26 (86.7%) of respondents as shown in Figure 8.

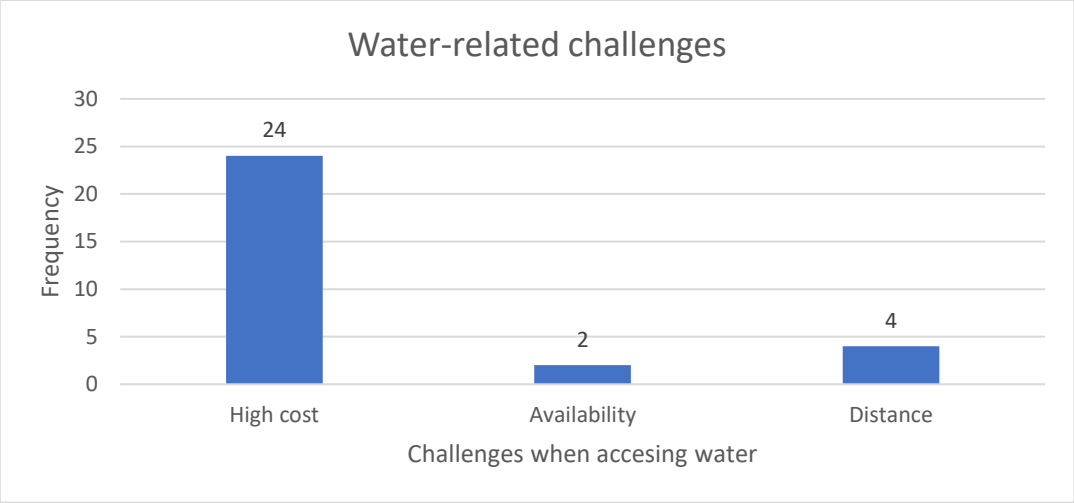

Figure 8: Challenges faced by head porters and migrant fishers when accessing water

- Menstrual Health Education

Participants were asked if they have received any education on personal hygiene and the findings show that majority 21 (70%) have not received any education on menstrual hygiene whilst 9 (30%) have received education as illustrated in Figure 9.

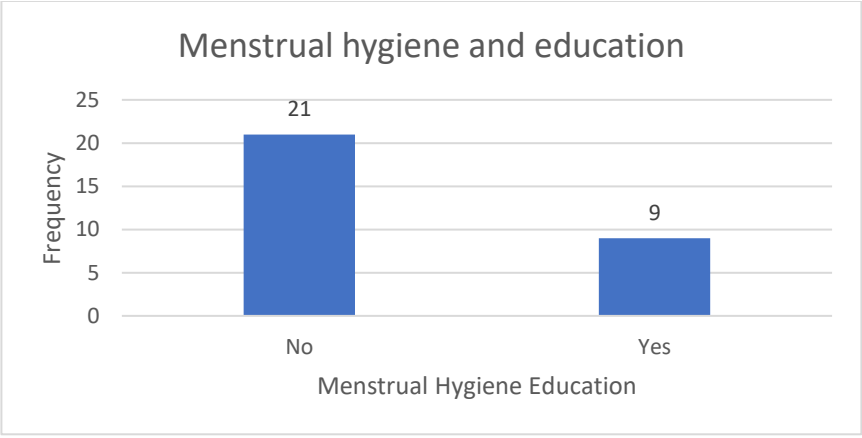

Figure 9: Responses on whether participants have received menstrual education

Overall, these findings reveal that migrant fishers and head porters face significant challenges when accessing menstrual hygiene products and its related facilities thereby affecting their work and health.

4.3. Impact of Period Poverty on their Work, Income, and Daily Lives

- Impact on Work and Health

This section explains how period poverty affects the work, income and daily lives of migrant fishers and head porters. The findings suggest that 18 (60%) of participants missed work due to menstruation with 20 (66.7%) also experiencing health issues related to poor menstrual hygiene. It was also noted that most 70% participants experienced some form of ailments such as irritations/itchiness/rashes 10 (33.3%), Odor 6 (20%) and Infections 9 (30%). This indicates that the physical conditions disturb their health and make their life conditions less enjoyable. Also, the fact that they usually work whilst experiencing these issues shows how tough and resilient they are.

Table 7: Impact of period poverty on work and health

Category	Frequency (N)	Percent (%)
Missed Work Due to Period		
Yes	18	60
No	12	40
Health Issues Due to Poor Hygiene		
Yes	20	66.7
No	10	33.3
Types of Health issues experienced		
Irritation/Rashes/Itchiness	10	33.3
Odor	6	20
Infections	9	30
None	5	16.7

4.4. Coping Strategies used to manage menstruation with limited resources

Table 8 shows how head porters and migrant fishers cope during menstruation. The finding reveals that, majority 23 (76.7%) use old cloth when they cannot afford menstrual products.

Table 8: Coping strategies used by Female Migrant Fishers and Head Porters

Category	Frequency (N)	Percent (%)
What Do You Do When You Cannot Afford Products		
Use old cloth		
Yes	23	76.7
No	7	23.3
Borrow from friend		
Yes	4	13.3
No	26	86.7

4.5 Qualitative Analysis

Participants were asked to share in detail how this limitation affects their ability to work, describe how they manage menstrual health under limited resources, particularly the strategies they employ when they cannot afford menstrual products, and recommend ideas for improvement. Three major themes were identified, namely: a) Menstrual pain and work, b) Coping strategies amidst limited resources, and c) Recommendations for reducing period poverty.

- **Theme 1: Menstrual pain and work**

We identified three themes under this subsection: Physical pain and discomfort, continuing work despite pain and fear of salary deduction.

- ***Physical pain and discomfort***

Many participants shared that they experience one form of physical pain during menstruation and some are abdominal pain and discomfort which affects their ability to work. One stated *"I feel pains in my hands when I'm menstruating, but I still have to work"* ***(P4, 26, migrant fisher)*** another also stated, *"I feel weak when I'm menstruating and experience abdominal pain*" **(*P2, 25, migrant fisher)***.

- ***Continuing work despite pain***

Some participants indicated that they do not miss work although they experience pain because they still need money for their responsibilities. One participant stated, *"I feel pain sometimes but If I don't go to work, I won't be able to take care of my myself and my children"* ***(P5, 23, migrant fisher).***

- ***Fear of salary deduction***

Some participants explained that missing work has repercussions for them in terms of losing part of their income/salary. *"If I miss work GHS 5.00 will be deducted from my salary so I cannot miss work"* ***(P1, 26, migrant fisher).***

- **Theme 2: Coping strategies amidst limited resources**

Under this section, three subsections emerged: Using, cutting or improvising cloth, seeking social support either by borrowing from friends and family or dependance on relatives and a combination of both.

- ***Using, cutting, or improvising cloth***

Most participants reported using old cloth when they could not afford commercial menstrual products. They described washing and reusing old clothes or rags. One participant responded, "*Oh for me, I use 'amoase' when I'm menstruating then after, I wash it so that I can use another day*" ***(P6, migrant fisher, 39).*** 'Amoase' is a traditional twi term for menstrual cloth/loincloth. Another also explained "*I use old clothes, when I don't have money to buy pad*" ***(P3, head porter 24).*** Others also use cloth, but have to cut it into pieces, in her own words, she stated *"I cut old materials or cloth then I use it when I can't afford to buy pad"* ***(P9, migrant fisher, 28).*** Another also added that, *"I cut it so that it will be able to absorb well then I use it"* ***(P5, migrant fisher, 23***). Another also reiterated "*I cut old material and use it when I don't have money to buy pad"* ***(P8, head porter, 27).***

- **Seeking Social Support**

Borrowing from Friends/Family

Another coping strategy employed was relying on social networks and close ones to access menstrual products and materials. One participant mentioned "*If I can't buy pad, I loan money from my friends or my family members"* ***(P7, Head porter, 20).*** Also, another mentioned, "*I borrow money from my friends when I don't have money to buy pad''* ***(P11, migrant fisher, 24).***

Dependence on Relatives or Close friends

Some participants reported relying entirely on close family or friends when they could not afford menstrual products. One stated *"if I can't get money to buy pad, I rely on someone close to me for help"* ***(P12, migrant fisher, 22).*** This instance shows how important social support networks are, in the context of menstrual hygiene management with respect to financial constraints. This dependence depicts the scarcity of personal resources and the importance of trusted networks in mitigating the effects of period poverty.

- **Combination of using cloth and dependence on relatives and close friends**

It was noted that some participants use both cloth and ask for help from close ones. One explained, "*sometimes if I don't have money to buy pad, I borrow money from other people to buy and use the cloth to balance it*" ***(P10, migrant fisher, 23).***

- **Theme 3: Recommendations proposed to address period poverty**
- ***Need for Affordable Products***

At this stage, participants were asked to recommend and suggest some solutions that can help curb period poverty in their communities. Some suggested that access and affordability of menstrual products will ease their challenges; "They should reduce the cost of pad or bring some that are cheap so that we can buy" ***(P1, migrant fisher, 26).***

- ***Support Systems***

Other participants also suggested the need for community programs and trainings to support menstrual hygiene management. One noted "if they do some community meetings for us where they discuss menstrual topics it will help us, I wish we had something like that to support us" ***(P5, migrant fisher, 23).***

- ***Education and Distribution of Sanitary Pads***

Some participants also suggested they should be given education on personal hygiene, menstrual health and hygiene and free sanitary products. One stated *"If they teach us on how to keep ourselves well when we are menstruation it will be good"* ***(P2, migrant fisher, 25)*** Another mentioned "*they should give us free pads"* ***(P3, head porter, 24).***

- ***Economic Support***

Some also highlighted financial assistance and support. One responded, *"They should give us money"* ***(P6, head porter, 30)***. This support being mentioned could be from the government, individuals and NGOs/CSOs.


Figure 10: Some pictures from data collection exercise

4.6 Using the socio-ecological model to organize period poverty challenges and recommendations

Based on literature, findings from qualitative and quantitative results, the SEM will be integrated to address period poverty. At the policy level, the Ministries and Agencies were identified as the stakeholders to champion this course. At the community level, the District Assemblies at the Local government agencies, WASH organizations and community leaders were identified. At the institutional level, other government institutions, CSOs, NGOs and development partners are still recognized. At the interpersonal level, the study sought to engage families, peers, men and boys. Finally, at the individual level, promote good menstrual hygiene knowledge and skills among the migrant fishers and head porters. In summary, improving the menstrual health experiences of female migrant fishers and head porters in Ghana requires a multi-sectoral and dimensional approach. This framework is more sustainable and tackles the challenges and barriers of period poverty at each level and transforms broader social, institutional and policy level environments which sort to sustain inequalities.

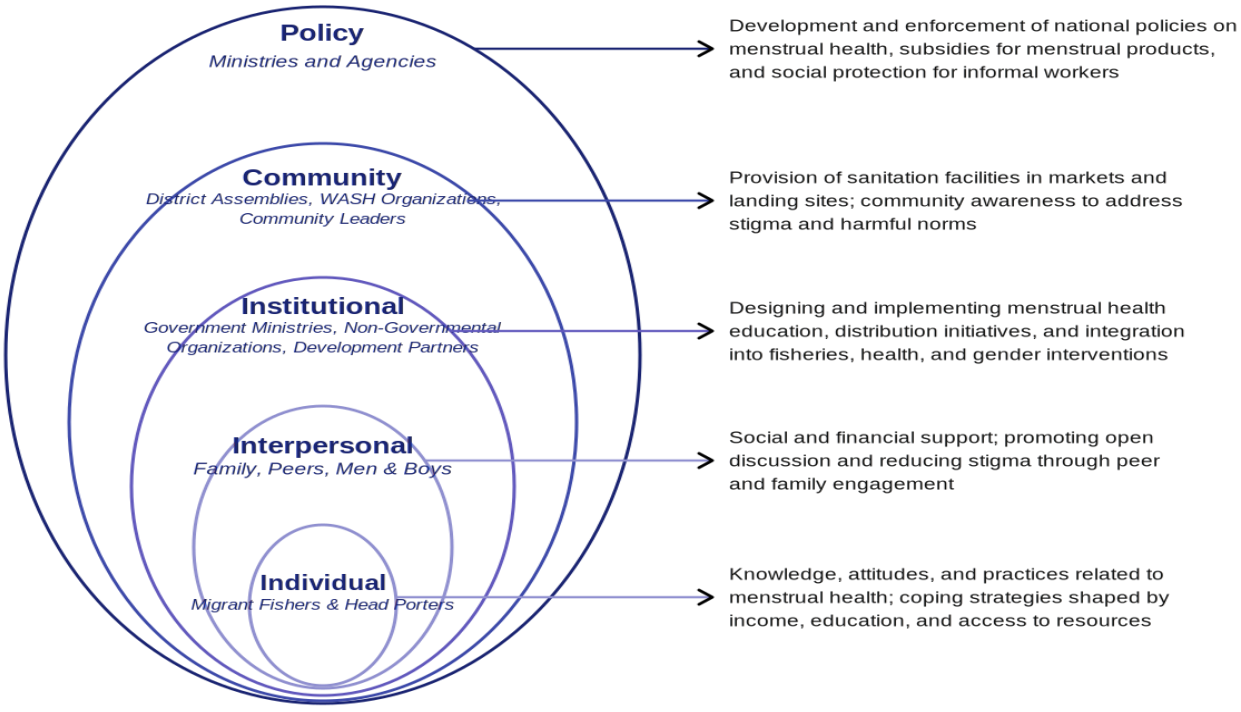

Figure 11: A framework developed to address period poverty among migrant fishers and head porters

5.0 DISCUSSION

5.1 Sociodemographic characteristics of participants

The sociodemographic data of migrant fishers and head porters provides an essential perspective for understanding the menstrual experiences and coping strategies of female migrant fishers and head porters in the fisheries sector in Ghana.

Majority of the female migrant fishers and head porters were young adults within the ages of 20-29 years, this set of population are actively engaged in the informal sector involving physical labor, energy and income generation. This finding shows that young women dominate informal sector jobs like artisanal fish processing, head porting. They usually migrate from rural areas to search for livelihood opportunities (Kyei-Gyamfi, 2023; Asiedu *et al*., 2023; Appiah *et al*., 2021). Likewise, Agbekpornu *et al*., (2019) reported small-scale fishing and fish farming communities mainly consists of younger women who face high work demands with limited social protection. Most of the younger women had low or no formal education. The low level of education can influence their knowledge and restrict access to information on menstrual health and awareness on safe hygiene practices. This pattern is in line with a study conducted in Ghana on adolescents and young women where their education levels correlate with poor menstrual hygiene practices and knowledge (Amoakoh *et al*., 2025; Appiah-Agyekum *et al.,* 2025). There were also comparable trends in other countries like Ethiopia and Uganda where lower levels of education are associated with the use of improvised menstrual materials and poor hygiene practices (Miiro *et al.,* 2018; Ahmed Shallo *et al*., 2020).

Another key observation was also their marital status. Most were unmarried but had high burden and dependency rates in relation to their number of children and household responsibilities. This characteristic reflects reliance on familial and personal support networks for financial and social assistance as noted in other research conducted on migrant women in Ghana (Opuni *et al*., 2023; Owusu-Ofori, 2018). Also, their high burden and dependency rates further compound their financial ability to prioritize their menstrual health needs (Yeboah, 2022; Addo & Berchie, 2021).

Importantly their income was shaped by seasonal fluctuations and market activity. The findings indicate that most of the participants earn below Five Hundred Ghana cedis (GHS 500.00) equivalent to 39.49 EUR per month which is lower than the minimum wage in Ghana is GHS 587.80 which is equivalent to 46.42 EUR according to Mercans[1] (2025). Comparatively, according to ILO, the monthly average earnings for females in Ghana is 460 USD which is equivalent to 398.02 EUR. Informal sector workers are generally paid low wages and salaries because there are more labor supply and lack of skills which may attract higher incomes (Farrell *et al*, 2000; Ofori, 2009). These precarious livelihoods and economic instability limit their ability to purchase menstrual hygiene products regularly. The observations also correlate with evidence from Ghana and other Low-and-middle income countries emphasizing that economic instability and financial constraints have a significant impact on menstrual health management across various countries (Rossouw & Ross, 2021; Asumah *et al*., 2023; Bourne & Ahsan, 2025).

Although the findings strongly align with prior studies in literature, some contrasts emerge. For instance, unlike in some studies on adolescents and schools where their tailored interventions influence menstrual practices (Phillips-Howard *et al*., 2016; Amoakoh *et al*., 2025), women in the informal sector, do not have access to these structures interventions like education or health promotion programs. In addition, some international studies reported refugee, and urban populations benefit from numerous community-based assistance and social support for menstrual management (Patel *et al*., 2022; Schmitt *et al*., 2017). Therefore, migrant fishers and head porters may struggle to rely on their informal social networks as a result of mobility, low trust in their new work environment and stigma. Using the theory of feminization of informal labor and gendered division, the socio demographic characteristics explains how low education and low-income channels women into cycles of poverty. According to Elson (1999), the result of this poverty cycle is due to structural gender inequalities that devalues women's work and not individual circumstances.

[1] Mercans is a certified global payroll and compliance firm which provides statutory wage and salary data for over 160 countries adhering to GDPR standards, SOC 1&2, and ISO 9001, 20000, 27001.

Overall, the sociodemographic factors all interact to influence and shape the menstrual health experiences of migrant fishers and head porters in the fisheries sector. These factors such as age-appropriate education, marital status, income support and culturally sensitive interventions are vital for designing tailored interventions for women in the informal sector (MacRae *et al*., 2019; Patel *et al*., 2022; Harerimana *et al.,* 2025).

5.2. Challenges Female Migrant Fishers and Head Porters Face in Accessing Menstrual Hygiene Products and Facilities

From the results, it was observed that migrant fishers and head porters go through both economic and structural barriers when accessing menstrual hygiene products and facilities. There was high use of old clothes (43%), rags or napkins, pads (37%), tissues or toilet roll (13%) and diapers (7%) in some cases. Some, however, used a combination of any of the products available. This shows that the choices of menstrual products are constrained by affordability. These findings align with some research conducted in sub-Saharan African which shows that financial constraints limits women's ability to purchase pads especially due to the cost thus they are compelled to use other improvised materials (Harerimana *et al*., 2025). Whilst the use of cloth may seem more sustainable compared to the use of pads, there is still the issue of access to water persists which worsens the case.

Also, the respondents reported 50% of high cost of sanitary products being a major challenge in their quest to use access menstrual hygiene products. This finding shows a heavy economic burden considering their high parity and dependency rates. For those participants who use about GHS 15.00 – GHS 60.00 to buy menstrual products monthly, it means they are using approximately 3% - 12% of their income especially those who earn below GHS 500.00. This shows that willing to use menstrual hygiene products can take up a significant portion of their income. In the same light, research conducted in Malawi shows how high cost of menstrual product and poor sanitation infrastructure can limit effective menstrual hygiene according to Kambala *et al*., (2020). For these women in the fisheries sector who depend on low incomes for their livelihoods, this additional cost competes with their basic survival needs such as food, water and household needs.

Access to water further complicates their menstrual management. Although the availability of water was not an issue, accessibility became a major problem for most (86.7%) in relation to the cost. Some also reported on the consistency of water availability where only 30.4% indicated consisted access. One respond shared how her five-member household survives on a four-liter gallon of water per day due to cost. This scenario highlights the issue of adequate washing of reusable materials such as old clothes during menstruation. The Female Political Ecology (FPE) gives more explanations to this context. It explains that in geographical spaces with water-scarcity, period poverty is because of gender power relations. Because water is generally scarce or expensive, households prioritize their basic survival needs over their menstrual hygiene. For this reason, menstrual needs of women are overlooked in water management decisions (Sultana, 2011; Ntshalintshali & Nojiyeza, 2025).

In other cases, some respondents shared how they resort to going to sea to fetch water when they cannot afford purchased water. This scenario is also a major concern, considering the visible filth and contamination at the beach fronts and the sea. This increases the risk of exposure to infections and other diseases. Therefore, this makes it unsafe to use especially when using it to wash reusable menstrual materials because it may heighten vulnerability and susceptibility to various forms of reproductive tract infections and water borne illnesses. According to Schmitt *et al*., (2017) and Patel *et al*., (2022), much research shows that in low-resource settings, access to safe and clean water complicates menstrual management. Findings also recorded the 13% lack of proper disposal facilities indicating environmental and structural deficiencies. Without appropriate waste disposal management, women may be compelled to dispose off waste of these menstrual products to open spaces such as the beach. This will contribute to environmental contamination thus reinforcing stigma associated with menstruation.

Another challenge observed was low menstrual heath education. Participants (70%) reported they had not received any form of menstrual education. Whilst this may be true, they may have understood the question as formal education on menstrual health in a form of capacity building. This is because, often parents or older women in societies try to teach adolescents on what they can do when menstruation as it ushers them into adulthood. Also, the use of old clothes and in particular, the tendency to become pregnant. Nevertheless, this contributes to the

high reliance and use of old clothes and other practices. Though many interventions focus on the distribution of sanitary products, research has recommended that addressing strengthening education, improving privacy and cultural stigma are more sustainable improvements according to (Tufail *et al*., 2023; MacRae *et al.,* 2019). Furthermore, 13% of respondents reported to borrow menstrual products. This reflects the underlying social and cultural taboos that discourages open discussion of menstrual health related topics which includes sharing or borrowing menstrual products. Al-Mamun *et al*., (2025), reports on comparable socio-cultural barriers in some flood-affected communities in Bangladesh where stigma limits support-seeking behaviors related to menstruation.

Overall, the challenges reported by migrant fishers and head porters in Ghana showcase broader patterns detected among informal labor settings in low resource and marginalized areas. The findings align with Bourne & Ahsan (2025) study on period poverty which states that, it is multidimensional and influenced by various determinants such as education, availability of menstrual products, stigma and access to WASH facilities. In order to address these challenges, it is important to integrate context-specific interventions that combines continuous menstrual health education, financial barriers, provision of affordable products, regulation of water pricing, improved WASH facilities and culturally sensitive education programs to reduce stigma and misinformation (Jafaar *et al*., 2023; Marí-Klose *et al*., 2023). Without addressing these determinants, these women will continue to be constrained.

5.3 Impact of Period Poverty on their Work, Income, and Daily Lives

Following the challenges, the findings illustrate that period poverty has an impact on health, income and work of migrant fishers and head porters. Firstly, in relation to their income and work where 60% reported they miss work because of menstruation which in turn affects their incomes. Hunter *et al*., (2022) explains that, in the United States of America, there was an increased menstrual-related absenteeism due to period poverty. Comparably, other research show that adolescents experiencing period poverty were absent from school and other activities due to inadequate menstrual supplies (Feeley *et al*., 2024). This observation is consistent with the findings in this research. While others reported this, others also gave valid reasons why they could not miss work during menstruation. To some, it was just not a strong reason to stay home

because they must survive. Some reported missing work attracts salary deductions and losing income thus they simply cannot stay at home. This echoes the precarious nature of their livelihoods, living on hand-to-mouth. Research conducted by Soeiro *et al*., (2021) in Brazil on Venezuelan migrants has similar findings, where livelihoods and health can be interrupted by inadequate menstrual resources.

Secondly, in relation to health, the findings indicate that 86.3% reported on menstrual-related health challenges such as irritations, odor, itching, infections and rashes. This could be due to poor menstrual hygiene practices particularly the use of reusable materials and contaminated water which increases risk of infections and discomfort. These outcomes further highlight the relationship between occupational vulnerability, menstrual health and environmental sanitation. These findings also align with research which explains that poor menstrual hygiene leads to risk of adverse health effects and ailments such as reproductive tract infections (Rac & Zupková, 2025; Miller *et al*., 2023). It was noted that 33.7% responded with No in relation to these ailments. It is possible they have normalized their discomforts and minor infections and thus, do not associate them directly to menstrual hygiene challenges. All the same, the high number of reported symptoms emphasizes the health vulnerabilities experienced by this population.

In the findings, participants further mentioned the pains they experience such as pain in hands, abdominal pains and general body pains during menstruation but still have to go to work. Though these caused obvious weakness, it was normalized among them. Culturally, there are perceptions which frames the normalization and endurance of menstrual pain as a sign of strength. This discourages women from seeking health care and possibly delaying the recognition of some underlying health conditions. There are other numerous studies that show that the normalization of painful menstrual symptoms, silence and stigma around menstrual pains contributes highly to the diagnostic delays of gynecological disorders (Orellana *et al*., 2024). According to Hudson (2022), endometriosis is often called the ‘missed disease’. Lots of women report these symptoms during menstruation but are dismissed by healthcare professionals contributing to the numerous diagnostic delays of about 7.5 years. This shows a broader systemic issue of women’s pain being normalized thus leading to delays in seeking and receiving

treatment. The normalization of this pain itself is a gendered phenomenon and reflects how women's pain is deprioritized in both workplace and healthcare.

All these findings further reveal that period poverty has grave consequences for health, work disruptions and income. Thus, the need for multidimensional approaches to resolve these consequences of period poverty among this population.

5.4. Coping Strategies used to manage Menstrual Health with Limited Resources

The findings show that migrant fishers and head porters use various coping strategies to manage menstruation under limited financial and infrastructural constraints. This shows their resilience but also reflects their unmet menstrual health needs and systemic deficit.

The common menstrual resource used was old cloth of which one referred to as **'amoase'**. They described this use as economical because all they had to do was to rewash and reuse. In their own words, "*I cut old material and use it when I don't have money to buy pad".* The practices highlighted here are not new. In various African context, it is a common practice. According to Patel *et al*., (2022), these practices demonstrate the level of adaptation and other coping strategies in other period poverty settings where financial barriers compel women to use reusable cloth and materials. Similarly, a study conducted by Boyers *et al*., (2022) explains that women who are not financially capable prioritize basic needs like food, childcare and shelter over menstrual products. This results in the prolonged use of suboptimal materials thereby increasing health risks. Others also explained having to save small amounts of money regularly to be able to buy sanitary pads. This shows how they sometimes prioritize their menstrual health as much as their basic needs despite the limited financial ability.

Another finding that emerged as a coping strategy was social support networks. From the results some highlighted they resort to borrowing money from family and friends when they cannot afford sanitary pads. While others use a combination of the old cloth and borrowing from friends and family. One stated, "*I borrow money from my friends when I don't have money to buy pad*''. The dependance and reliance on social networks further emphasizes the important role of community-based support networks to reduce the prevalence on period poverty. According to Rohatgi & Dash (2023), in low resource settings where there is no or limited formal supports,

there is dependency on informal networks to manage menstrual health. Although in this context they do, in some context, stigma and socio-cultural norms and taboos surrounding menstruation constraints this access thus people fail to seek help (Casola *et al*., 2022). In this case, as much as the social support provides some help and relief it is still not an equitable or sustainable solution. The fact that women must rely on their peers and families to meet a basic need as a result of a biological process shows how formal institutions do not pay heed to menstrual health as a gender quality issue which deserves systematic support.

5.5 Participants' recommendations for addressing period poverty

Participants also proposed some recommendations to improve their menstrual hygiene management. Some recommended subsidized and affordable sanitary products because these products are expensive in Ghana. In their own words, "*They should reduce the cost of pad or bring some that are cheap so that we can buy".* This highlights the urgency of the government to remove the taxes on sanitary products to make it more affordable for the average Ghanaian. Another recommendation that was made was the availability of community programs such as distribution of free sanitary products. In Ghana, the government of Ghana introduced distribution of sanitary products for teenage girls in high school in 2025 in collaboration with the Ministry of Education and Ministry of Gender, Children and Social Protection and other development partners. This same act could be done for female migrant fishers and head porters in the various coastal communities.

Additionally, another recommendation made was capacity building programs in the form of menstrual health education. This could be based on topics such as product use and accessibility, good menstrual hygiene practices, mental well-being, stigma and effects of bad menstrual health. Others also recommended some form of financial support. This could be in the form of physical cash or vouchers and alternative livelihoods to generate incomes. In this part, some of them can be taught to produce or sew reusable menstrual products which are cheaper and affordable.

All these recommendations are in line with broader menstrual health studies which advocates for specific interventions such as provision of menstrual products, improved sanitation

infrastructure and menstrual health education to be integrated in frameworks and policies (Bourne &Ahsan, 2025; Jaafar *et al.,* 2023). For this to work effectively, it is paramount to not those sustainable solutions need constant and reliable support systems instead of one-time donations. This can be achieved through partnerships with the government, community organizations, CSOs and NGOs as described in the SEM model in the results.

Overall, the coping strategies that have been identified such as the use of cloth, borrowing from family and friends, saving to buy pads explains their resilience when having limited resources. Nevertheless, they also mirror the systemic inequalities and imbalances when accessing menstrual hygiene products, education, resources and facilities. These challenges require a multidimensional and comprehensive approach to effectively address them. Without such improvements, women will continue to rely on short-term coping mechanisms that may compromise their health, dignity, and overall well-being.

6.0 CONCLUSION AND RECOMMENDATIONS

In conclusion, period poverty remains a significant issue among women in the informal labor settings like the fisheries sector. The study highlights complex interrelated challenges that shape and influence the menstrual experiences of migrant fishers and head porters in Ghana. The findings indicate a reliance on old cloth and paper towel/tissue paper primarily due to financial constraints. In addition, high cost of water and high cost of sanitary products exacerbate the issue due to their low-income generation. Though they find ways to manage menstruation like saving towards the purchase of pads, this action also competes with their basic and household needs making menstrual management a chore. These strategies of finding ways to manage menstrual health does not make them helpless, it shows their resilience and resourcefulness under limited structural and institutional gaps.

Beyond these challenges, there are other factors including improper waste disposal, limited access to water and stigmatization which further complicates menstruation. All these factors intersect to create health problems such as irritation, odor and itchiness of their genital areas which eventually affect productivity. The high prevalence of menstrual-related discomfort, infections, and work disruptions indicates unfulfilling and unmeaningful lived experiences. This shows how multidimensional period poverty is.

Thus, to address this, there is the need for a sustainable, coordinated and context-specific intervention in the informal fisheries sector. Without these holistic approaches, migrant fishers and head porters will continue to rely on short-term coping strategies which may compromise health, income, dignity and overall well-being. In the fisheries sector in Ghana, addressing period poverty among this population requires more than access to improved facilities, it also requires a shift in deeply entrenched gender and social norms, power relations structured in the informal economy.

RECOMMENDATIONS

1.Policy Recommendations

i. There is the need for the government to regulate, subsidize or remove taxes on menstrual hygiene products and integrate menstrual health into national frameworks of WASH, occupational and informal sector policies. This action should be led by Ministry of Gender Children and Social Protection, Ministry of Health, Ministry of Sanitation and Water Resources, Ministry of Local government (Metropolitan and Municipal District Assemblies), labor unions, NGOS, CSOs and donor partners.

ii. The cost and availability of water resources in vulnerable settlements such as markets and coastal areas should be reviewed and regulated to prevent unequal financial burdens that challenge menstrual hygiene management.

iii. Menstrual hygiene support programs such as product distribution for informal sector workers can be incorporated in social protection programs. There should also be a multisectoral collaboration and coordination to ensure sustainability of project.

2. Practice Recommendations

i. Savings support mechanisms, such as women-led savings groups (Village Savings and Loans Associations) or microfinance initiatives, could be strengthened to help women who already attempt to set aside small amounts toward purchasing pads, thereby improving reliability of access.

ii. Menstrual health education programs that are culturally appropriate should be established to reduce stigma, encourage safe hygiene practices, and enhance awareness of infection prevention. These programs should involve community leaders, women's organizations, NGOs, public health professionals, and WASH providers. Engaging men and boys is important in this section because gender norms are often reinforced within the household and in this context fishing communities.

iii. The availability of safe, affordable water and private sanitation facilities at workplaces should be improved. Investing in gender-responsive WASH infrastructure, including waste disposal systems, is crucial for enabling safe and dignified menstrual management.

iv. Initiatives supporting the local production and distribution of cost-effective reusable menstrual products should be considered, ensuring these efforts are backed by adequate support.

3. Research Recommendations

i. In future research, a large sample size can be used to ensure more diverse results and to gain better associations between period poverty, income, work productivity and health.

ii. A longitudinal section can also be explored to determine the long-term impact of period poverty, income and health overtime.

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APPENDICES

APPENDIX I: Logical Framework and Theory of Change

Narrative Summary	Indicators	Means of Verification	Assumptions
Goal: To contribute to improved menstrual health and socioeconomic well-being of women in the informal settings in Ghana at large	Improved menstrual health policies in the informal sector	NGOs and development partners program reports	Improved efforts by the government to address period poverty alongside broader socioeconomic and structural problems that impact women in the informal sector based on research findings
Outcome: Provide the Fisheries Commission, NGOs and development partners with data on the hidden struggles and socioeconomic impact of period poverty among migrant fishers and head porters	Percentage of stakeholders who interact with the research results and report using them to inform menstrual health programming or policy decisions.	Stakeholder feedback records attesting to their interest in the findings. Citations in policy papers, program materials, and institutional reports.	Stakeholders are interested in menstrual health research findings.
Output 1: Database on period poverty among migrant fishers and head porters	Database developed and made accessible	Database records	Successful and timely data collection
Output 2: Presentations of outcome of findings at stakeholder meetings	Number of presentations	Conference/Meetings attendance records	Conference opportunities are available and accessible

Output 3: Journal article on period poverty among migrant fishers and head porters published	Number of articles published	Publication of research report/article	Institutional support for dissemination is available
Activities: 1.Literature review 2. Develop questionnaire 3.Collect data 4.Analyze closed-ended and open-ended data 5. Write research report 6. Present outcomes	Completion milestones for each activity.	To-do list for research work Research notebook and notes	Accessible data on all themes of the research

Theory of Change (ToC)

Period poverty, the lack of access to safe and affordable menstrual products, water, sanitation and hygiene (WASH) facilities and menstrual health education remains a key issue but often overlooked issue disproportionately affecting marginalized groups worldwide. Among these marginalized groups are female head porters and migrant fishers in Ghana. Female migrant fishers are a group of women, often seasonal, who move from their home communities to fishing communities and engage in post-harvest activities such as fish smoking, descaling, drying, and marketing, often under precarious conditions. Head porters however are internal migrants, primarily women, who earn a living by carrying fish from landing sites to processing facilities and markets loads for traders and shoppers in markets.

This group is often faced with little or no income, limited access to sanitation infrastructure and indecent living conditions. Despite the increasing awareness of menstrual health as a development and rights issue, there are still research gaps. This leaves stakeholders uninformed without evidence to design targeted interventions for this marginalized group. This study was conducted in Ghana on migrant fishers and head porters in the fisheries sector living in Kedzi

(Volta region) and Tema Newtown (Greater Accra region). These populations were targeted due to their increased exposure to period poverty. The outcome of this research is that the struggles of period poverty among this group are highlighted to relevant stakeholders, allowing for better informed and targeted interventions on menstrual health in Ghana's informal sector.

Outputs

1. A database on period poverty among migrant fishers and head porters for use by future researchers
2. Presentations of outcome of findings at stakeholder meetings
3. Journal article on period poverty among migrant fishers and head porters published

Causal Logic

1. If face-to-face interviews were used to gather data from participants
2. Then a database on these vulnerable groups on period poverty are produced
3. Then this data will be analyzed into understandable results for presentations, journal articles and database
4. Then relevant stakeholders accept and use the research findings to design targeted interventions to improve menstrual health and socioeconomic well-being of women in the informal sector in Ghana

Assumptions

1. Participants willingness to open-up and discuss their menstrual experiences to gain a good database
2. Stakeholders are receptive to research findings on menstrual health
3. Institutional support towards dissemination of research findings
4. Availability and accessibility of conference and journal opportunities

Risk and Mitigations

1. Risk: Busy routine of participants making the recruitment process a bit challenging

Mitigation: Both purposive and snowball sampling methods used to reach the participants

2. Risk: The research findings not reaching or influencing the stakeholders

   Mitigation: Institutional support to disseminate findings to the relevant stakeholders

APPENDIX II: Questionnaire

QUANTITATIVE

Language Preferred: □ Twi □ English □ Ga □ Ewe

Section I: Demographics

1. Gender: □ Male □ Female □ Other □ Prefer not to say

2. Age (yrs): ……

3. Educational Level: □ None □ Primary □ Junior High School □ Senior High School

□ Tertiary (University)

4. Marital Status: □ Single □ Married □ Divorced □Widowed □ Prefer not to say

5. Number of Children (If any): ……

6. Number of people you take care of (if any): ……

7. Occupation: □ Migrant fisher □ Head porter

8.Method of payment received

□ Soap □ Fish □ Clothes □Money

9. Average monthly income: GHS ……..

Section II: Menstrual Hygiene Access Challenges & Coping Mechanisms

This section asks about your experiences during menstruation and what you do to manage it. It also focuses on coping strategies during menstruation and its impact on your daily life.

10. Do you menstruate? □ Yes □ No

11. What type of menstrual products do you use?

□ Pad □ Rag/Napkin/Old Clothes □ Tissue/T-roll □ Other

12. How often do you have access to sanitary products (Pads/tampons)?

□ Never □Rarely □ Frequently □ Always

13. What type of menstrual products do you use?

□ Pads □ Rag/Napkin/Cloth □ Tissue/ T-roll □ Other (Please specify) …….

14. How much do you spend on menstrual products averagely in Ghana cedis (monthly)? …….

15. What do you do when you cannot afford menstrual products?

□ Use old Cloth □ Borrow from friends/family □ Others (Please specify) □ None

16. Has there been a day you never had access to a sanitary product while you were menstruating? □ Yes □ No

17. What challenges do you face in accessing menstrual products? Tick all that apply

□ High cost □ Unavailability □ Stigma/shame □ Lack of proper disposal

□ Water □ Other (Please specify) …….

18. Do you have access to water and sanitation facilities during your period? □ Yes □ No

19.If so, how many days do you have access to water and sanitary facilities?

□ Always □ Sometimes □ Never

20. What are the main issues you face when accessing water?

□ Cost □ Availability □ Distance

21. Have you ever missed work because of your period? □ Yes □ No

22. How many days per month do you miss work? □ 1-2 days □ 3-5 days □ More than 5 days

23. Do you experience any health issues related to poor menstrual hygiene? □ Yes □ No

23b. If yes, what kind of issues

□ Infections □ Itchiness/Rashes/Irritation □ Odor □ Other

24. Have you ever received any education on menstrual hygiene? □ Yes □ No

24b. Where?

□ Social media e.g facebook □ Hospital e.g nurse □ Parents/Relatives □ School □ Personal relations e.g friends □ Other

QUALITATIVE

Section III: Socioeconomic Impact & Support

The next set of questions are conservations about your period and how it affects your daily life including work. Please feel free to express yourself. Let me know if I must clarify anything

24. Recall when I asked you about missing work because of your period. What was the main reason? (Open-ended)

25. Please explain in detail on your coping mechanism when you cannot afford to buy menstrual products. (Open-ended)

26. How have local organizations/government programs helped with menstrual health in your community? (Open-ended)

27. What actions and interventions would you recommend to the government to improve menstrual health support for migrant fishers and head porters? (Open-ended)

28. In your opinion, what kinds of support/programs would help improve menstrual hygiene for migrant fishers and head porters in your community? (Open-ended)

Appendix III: Statistical Validation

Methods

To examine the effects of period poverty on respondents' employment, health, and income, a Period Poverty variable was constructed by combining respondents' responses about coping mechanisms employed when they were unable to afford menstrual products (used old cloth, borrowed from friends, other method or did not use any other method), and difficulty in obtaining menstrual products. A higher score on the period poverty variable indicates greater period poverty.

Associations between period poverty and categorical outcomes (missing work due to menstruation, menstrual hygiene-related health problems) were tested using cross-tabulations and Fisher's exact tests, given the small sample size and expected small cell counts in some cells. Fisher's exact test is a non-parametric statistical significance test used to determine if there are non-random associations between two binary categorical variables within a contingency table and is preferable when cell frequencies are too small (e.g., less than 5) and can provide an exact value for the p-value compared to the asymptotic p-value.

Differences in average monthly income between period poverty statuses were analysed by using an independent samples t-test. The independent-samples t-test or two-sample t-test is a test that states that the results of any 2-sample t-test are statistically significant if the result is different from 0. This test is often used for comparing two sample groups, like the control and the treatment groups; it tests if the difference in means for the two samples is zero. A linear regression was also performed to explore the relationship between the continuous period poverty score and monthly income; the regression coefficients, standard errors, 95% confidence intervals and R value were reported. All tests were two-sided and significant at a p-value of less than 0.05.

Results

- Association between Period Poverty and Missing Work Due to Menstruation

Table 1 below illustrates the relation between period poverty (Lack of access to menstrual products) and absenteeism from work due to menstruation. Out of 30 participants, 18(60.0%) had missed work from the study as a result of their periods, and 12 (40.0%) hadn't. Of the 18 who missed work, 17 were experiencing period poverty, and only 1 wasn't. Out of the 12 who had not missed work, 11 were experiencing period poverty, and only 1 wasn't. Although it may look as if there is a connection between period poverty and missing work, this was found not to be the case when applying Fisher's exact test (p = 1.000). This study was unable to prove that period poverty was a cause of missing work and one of the biggest reasons for this is the number of participants in the study who were experiencing period poverty was enormous; the percentage of participants in the study who were experiencing period poverty was 93.3%, and it is for this reason that no real association could be made between the two subjects.

Table 1: Association between Period Poverty and Missing Work Due to Menstruation (N = 30)

Missed work due to period	No period poverty (N%)	Period Poverty N (%)	Total	p-value (Fisher)
No	1 (8.3%)	11 (91.7%)	12	
Yes	1 (5.6%)	17 (94.4%)	18	1.000
Total	2 (6.7%)	28 (93.3%)	30	

- Association between Period Poverty and Menstrual Hygiene–Related Health Issues

The relation between period poverty and self-reported menstrual hygiene-related health problems for the sample of respondents (N=30) is given in Table 2. 20 respondents (66.7%) reported having faced some health problems in relation to menstrual hygiene, while 10 respondents (33.3%) didn't. Out of respondents who had faced health problems, 18 (90.0%) belonged to period poverty groups, and 2 (10.0%) belonged to non-period poverty groups. Out of the respondents who did not face a health problem, all 10 (100.0%) of the respondents were from the period poverty group.

Fisher's exact test resulted in 0.540 and was found to be statistically non-significant; there is no significant relation between period poverty and menstrual hygiene-related health problems in the sample.

Table 2: Association between Period Poverty and Menstrual Hygiene–Related Health Issues

Health Issues Related to Poor Hygiene	No period poverty (N%)	Period Poverty N (%)	Total	p-value (Fisher)
No	0 (0.0%)	10 (100%)	10	
Yes	2 (10.0%)	18 (90.0%)	20	0.540
Total	2 (6.7%)	28 (93.3%)	30	

- Average Monthly Income by Period Poverty Status

The comparison of respondents with period poverty to respondents not suffering from period poverty on their average monthly income (N = 30) is presented in Table 3. The average monthly income for respondents not suffering from period poverty was GHS 2040 (SD=2771.86) compared to respondents with period poverty at GHS 522.14 (SD=1008.5).

A two-sample t-test was run, and the result was not significant (t=1.85, p=.075), although there was a substantially lower mean monthly income reported by respondents suffering from period poverty. This indicates that despite respondents suffering from period poverty reporting lower monthly incomes, the means were not significantly different.

Table 3: Comparison of Average Monthly Income by Period Poverty Status (N = 30)

Period Poverty Status	N	Mean Income (GHS)	SD	p-value (t-test)
No	2	2040	2771.86	
Yes	28	522.14	1008.5	0.075
Total	30	623.33	1166.26	

t = 1.85

- Monthly Income on Period Poverty Score

Table 4 displays a linear regression on respondents' period poverty scores and average monthly income (N=30). Period poverty score and monthly income were negatively related (= -193.91), with higher scores on period poverty related to lower average monthly income. However, this relation was not statistically significant (p=.582), and the confidence interval was very large (CI: -906.91 to 519.08). The constant was 914.2 (p=.117) and only 1.1% of monthly income can be attributed to period poverty scores (R=.011), meaning other things must be at play influencing respondents' income. In summary, period poverty severity appears to be weakly related to monthly income for this sample, but not in a statistically significant way.

Table 4: Linear Regression of Monthly Income on Period Poverty Score (N = 30)

Variable	Coefficient (β)	Std. Error	p-value	95% CI
Period Poverty Score	-193.91	348.07	0.582	-906.91, 519.08
Constant	914.2	564.84	0.117	-242.82, 2071.22

R^2 = 0.011