

**ENSIGN GLOBAL COLLEGE
KPONG, EASTERN REGION, GHANA**

**FACULTY OF PUBLIC HEALTH
DEPARTMENT OF COMMUNITY HEALTH**

**ASSESSING PERIOD POVERTY AMONGST ADOLESCENT SCHOOL GIRLS AT
THE LOWER MANYA KROBO MUNICIPALITY IN THE EASTERN REGION OF
GHANA**

By

Rosemary Lartey-Nyaunu

(237100242)

April, 2024

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**A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY HEALTH, FACULTY
OF PUBLIC HEALTH, ENSIGN GLOBAL COLLEGE IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE MASTER OF PUBLIC HEALTH DEGREE**

April, 2024

DECLARATION

I, Rosemary Lartey-Nyaunu declare that this thesis is the product of my own effort as a student at Ensign Global College, Kpong, under the guidance of Dr. Edward Kofi Sutherland. The work has properly acknowledged all pertinent sources, and this thesis has not been submitted in whole or in part for the award of a degree at another school.

Rosemary Lartey-Nyaunu (237100242) Signature Date
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Certified by Dr Edward Kofi Sutherland (Supervisor) Signature Date
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Certified by Dr. Stephen Manortey (Head, Academic Programme) Signature Date
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DEDICATION

This thesis is dedicated to my parents (Rev. Ebenezer Nyaunu & Mrs. Rose Ababio) and all adolescent school girls in the Lower Manya Krobo Municipality in the Eastern region of Ghana.

ACKNOWLEDGEMENT

I give thanks to God Almighty for all of his grace and mercies on this MPH journey.

A special thank you to Dr. Edward Kofi Sutherland, my thesis supervisor, for all of his help and advice during this process. I truly value all of the enlightening remarks and helpful critiques.

I also want to express my sincere gratitude to the Ensign lecturers and staff for helping to make my time there an unforgettable one. To my good friend, Dr Nuworza Kugbey (PhD), thank you for your unwavering support during the most trying moments of my time at Ensign. May God reward you.

DEFINITION OF TERMS

- Change and disposal insecurity:** This group of items reflected respondents worries and concerns that they would not be able to change or dispose off materials when they needed to, and their concerns about privacy and safety while managing menstruation both at home and at school (or work)
- Material and home environment needs:** These items captured the extent to which respondents were satisfied (had their needs met) in relation to their menstrual materials, preferred disposal, and environments (spaces) they used to manage their menstruation at home.
- Material reliability concerns:** A group of three items fit together to capture respondents worries about the quality of their menstrual materials (that they would leak, that they would run out of materials, or that materials would move out of place).
- MPNS-36-** Menstrual Practice Needs Scale with 36 self-report items
- Reuse insecurity:** These items applied to those who reused materials and captured concerns around washing and drying materials.

Reuse needs:

These items applied to those who reused materials and captured the extent to which respondents were satisfied with (had their needs met) in relation to washing and drying materials

Transport and school/work environment needs: This group of items captured the extent to which respondents' needs were met in relation to transporting materials, and changing materials at school (or work).

ABBREVIATIONS/ACRONYMS

ANOVA-	Analysis of Variance
GHQ-	General Health Questionnaire
MAKROSEC-	Manya Krobo Secondary School
Max-	Maximum
MHM-	Menstrual Hygiene Management
Min-	Minimum
MMDAs-	Metropolitan, Municipal and District Assemblies
MPNS-36-	Menstrual Practice Needs Scale-36
OR-	Odds Ratio
SD-	Standard Deviation
SHS-	Senior High School
SHTS-	Senior High Technical School
WASH-	Water, Sanitation and Hygiene

ABSTRACT

Background: Menstruation is a normal physiological experience for adolescents and women of reproductive age. However, management of menstruation is associated with several challenges which can affect the overall health and wellbeing of women especially adolescents without the needed resources to effectively manage it. There is limited empirical evidence on period poverty and its associated factors among adolescent girls in senior high schools to inform effective health promotion interventions.

Aim: To assess period poverty and its associated factors amongst adolescent school girls at the Lower Manya Krobo Municipality in the Eastern region of Ghana

Methods: A school-based cross-sectional survey was conducted and a total of 270 adolescent girls were selected from four public senior high schools at the Lower Manya Krobo Municipality. A set of questionnaires measuring period poverty and its associated factors were administered to the students. Stata version 18 was used for data analysis and frequencies with confidence intervals as well as chi-square and logistic regression with a p-value set as 0.05 were used.

Results: The overall period poverty among adolescent school girls was 1.84 out of 3.00 indicating below average period poverty. Mean scores of 2.31, 2.03, 1.92 and 1.37 were observed for Material and Home Environment Needs, Change and Disposal Insecurity, Material reliability concerns and Transport and School Environment Needs sub-domains respectively. None of the socio-demographic factors (age, religion, class, programme of study) was statistically and significantly associated with period poverty among the girls. Economic factors as measured by perceived wealth status was associated with decreased period poverty. Parental communication about menstrual

hygiene management was statistically and significantly associated with period poverty. Frequency of parental communication was also statistically and significantly associated with the experience of period poverty among adolescent school girls.

Conclusion: Adolescent schoolgirls at the senior high schools chosen at the Lower Manya Krobo Municipality experience marginally below average period poverty, which is heavily impacted by parental and economic circumstances. These results highlight the need for institutional interventions to address issues, particularly in the educational setting, as well as raising parental awareness of the importance of good reproductive health practices, such as teaching menstrual cleanliness, in order to mitigate the harmful effects of period poverty.

Keywords: Adolescents, menstrual hygiene, period poverty, wealth status, parental communication.

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CHAPTER ONE

INTRODUCTION

1.1 Background

In today's society where there is an ongoing urge to explore and comprehend everything, the topic of menstruation, a fundamental and natural process, remains clouded by false beliefs, social taboos and embarrassment (Hennegan et al, 2016; Mohammed & Larsen-Reindorf, 2020; Partha, 2022). Despite being a common experience for countless girls and women globally, a concerning proportion of them continue to face limited availability of menstrual hygiene products, consequently affecting their physical, particularly reproductive and mental well-being (Ademas et al., 2020; Partha, 2022).

Every month, approximately 1.9 billion women constituting half of the global female population, undergo the menstrual cycle. Despite its natural consequence, menstruation continues to be subject to social stigma, especially in economically challenged nations where there is insufficient availability of resources for managing menstrual health and hygiene (Sacca et al., 2023). Poverty can be defined as hunger, lack of shelter, illness without access to medical care, lack of access to education, unemployment, fear of the future and living day-to-day (Michel, Mettler, Schönenberger and Gunz, 2022). A lack of access to menstrual products, education, hygiene facilities, waste management, or a combination of these is known as period poverty (Cardoso, Scolese, Hamidaddin, and Gupta, 2021). Research indicates that the occurrence of work absenteeism due to menstruation varies, with rates ranging from 11% in Niger to 19% in Burkina

Faso. Similarly, school absenteeism related to menstruation varies from 15% in Niger to 23% in Nigeria (Alor, Anaba and Adongo, 2022).

In Ghana, menstruation remains a taboo, leading to imposed restrictions such as avoiding entry into mosques, crossing rivers, or engaging in cooking for menstruators. These limitations hinder their ability to carry out daily activities. Additionally, some women encounter menstrual pains, impacting their participation in various activities. The challenge of affording menstrual products can lead to women and girls missing out on school and work, leading to long-term repercussions on their education and economic prospects. As an illustration, teenage girls in the Upper East region missed school for one to seven days per menstrual cycle. Factors contributing to school absenteeism in Ghana encompass inadequate access to sanitary pads or cloth, menstrual discomfort, concerns about staining school uniforms, teasing, unpleasant odour and a lack of privacy at school (Alor, Anaba and Adongo, 2022).

1.2 Problem Statement

Research conducted by UNICEF revealed that approximately 95,000 girls in Ghana are absent from school during their menstrual periods (Makafui, 2023). Also in Ghana, menstrual hygiene products are presently labeled as “non-essential” goods and are subjected to a 20% import tariff. This classification is determined by the Ghana Revenue Authority (GRA), the entity responsible for over-seeing taxation within the country. The GRA divides commodities into two primary categories: non-essential and indispensable items. Regrettably, sanitary pads fall within the category of non-essential products, consequently incurring a 20% import tax as well as additional 12.5% value-added tax. The categorization of sanitary pads as non-essential products, resulting in high taxes, creates several hurdles that adversely affect the health, education, and overall well-being of girls and women (Obeng-Akrofi, 2023). Therefore, exploring the magnitude and burden of period poverty among adolescent girls in Ghana is likely to inform public health policy, research and practice.

Personal engagement with adolescent girls through practicum experiences within the Lower Manya Krobo municipality have shown that menstruation and its management is one of the major issues confronting school-going adolescent girls. The question therefore will be “what is the magnitude of this issue and how do we address this issue among adolescent girls in the Lower Manya Municipality?” This is because evidence suggests that one in every five reproductive age woman experiences absenteeism from work, school and social activities as a result of menstruation (Alor, Anaba and Adongo, 2022).

1.3 Rationale of the Study

A female Kenyan senator, Gloria Orwoba, was asked to exit parliament due to a visible blood stain on her trousers. She stated that this incident made her realize the discrimination some girls in Kenya experience during their menstrual periods (Gatonye, 2023). The event brings attention to the issue of period poverty and the stigma associated with menstruation on an international stage. When a public figure experiences discrimination due to menstruation, it highlights the everyday challenges faced by many girls and women.

The rationale for studying period poverty among adolescent girls in the Lower Manya Krobo Municipality is to address a critical yet overlooked issue. There have been various studies on period poverty including “correlates of absenteeism at work, school and social activities during menstruation in Ghana” by Alor, Anaba and Adongo (2022) but no evidence of a study on period poverty among adolescent school girls in the Lower Manya Krobo Municipality. The inability to afford menstrual products and manage menstruation with dignity can have profound consequences on girls’ health, education and overall well-being. This study will fill the literature gap on menstrual hygiene management among adolescent girls and serve as a reference point for future studies. By focusing on the Lower Manya Krobo Municipality, this study aims to provide localized insights into the extent of period poverty, its impact on girls’ lives and potential interventions. Through this research, the study seeks to raise awareness, inform policy decisions and contribute to the design of effective programs that empower adolescent girls, reduce the stigma around menstruation and promote gender equality in education and health.

1.4 Conceptual Framework

The proposed modified conceptual framework is based on conceptual model developed by Hennegan et al., (2019). Socio-demographic factors, inter-personal factors and economic factors are the antecedents of period poverty. Socio-demographic factors such as age, religion, class, and programme of study are expected to influence the level of period poverty experienced by the adolescent girls in the four public senior high schools. Interpersonal factors such as parental communication about menstrual hygiene and the frequency of this communication are likely to influence the level of period poverty among the adolescent girls. Economic factors such as the employment status and perceived wealth status of the family as reported by the adolescents are likely to have significant influence on the level of period poverty experienced by adolescent girls.

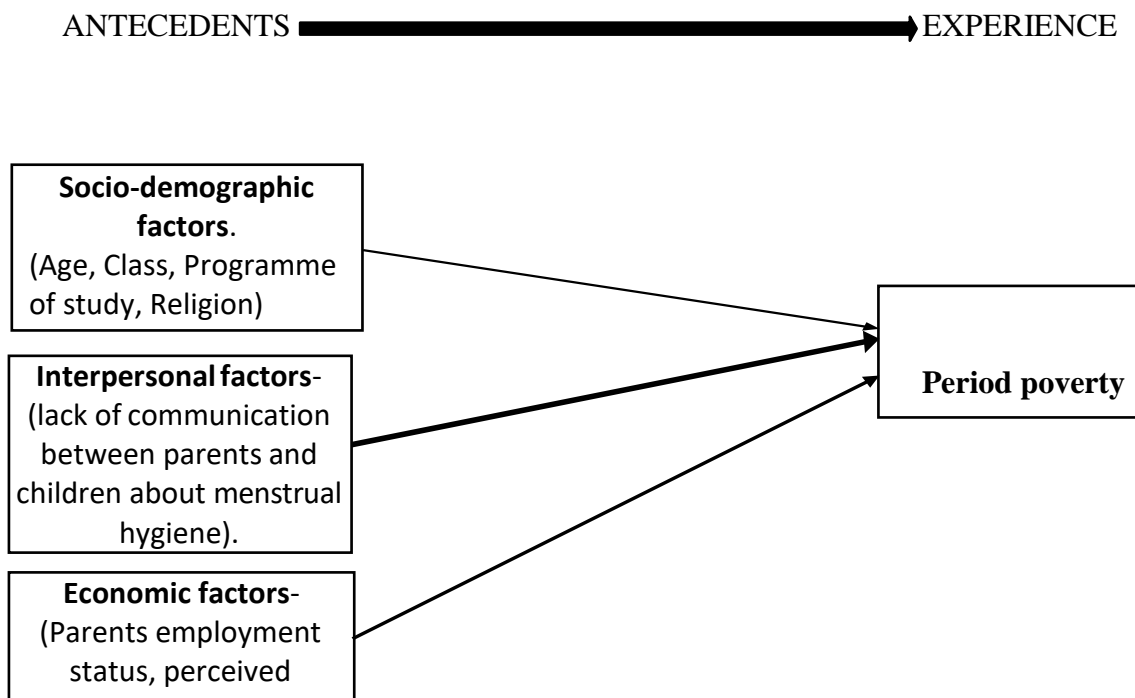


Fig 1.1: Conceptual framework

1.5 Research Questions

1. What is the prevalence of period poverty among adolescent school girls in the Lower Manya Krobo Municipality?
2. What are the socio-demographic characteristics that influence period poverty among adolescent school girls in the Lower Manya Krobo Municipality?
3. What are the economic factors that influence period poverty among adolescent school girls in the Lower Manya Krobo Municipality?
4. How do parental factors influence period poverty among adolescent school girls in the Lower Manya Krobo Municipality?

1.6 General Objective

To assess period poverty amongst adolescent school girls in the Lower Manya Krobo Municipality in the Eastern region of Ghana.

1.7 Specific Objectives

1. To determine the prevalence of period poverty among adolescent school girls in the Lower Manya Krobo Municipality.
2. To assess the socio-demographic characteristics that influence period poverty among adolescent school girls in the Lower Manya Krobo Municipality.
3. To investigate the influence of economic factors on period poverty among adolescent school girls in the Lower Manya Krobo Municipality.
4. To determine the influence of parental factors on period poverty among adolescent school girls in the Lower Manya Krobo Municipality.

1.8 Profile of the Study Area

Lower Manya Krobo Municipal is one of the 261 Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana and forms part of the thirty-three (33) Municipalities and Districts in the Eastern Region. It lies between latitude 6.05S and 6.30N and longitude 0o08E and 0.20W. with the Administrative Capital of the District as Odumase. The district covers an area of 316 km, constituting about 8.1% of the total land area within the Region (18,310 km). The major towns in the district include Odumase township (which incorporates Atua, Agormanya and Nuaso), Akuse and Kpong in the Lower Manya area. The Municipality shares boundaries with Upper Manya Krobo District to the north, to the south with Shai Osudoku District respectively, to the west with Yilo Krobo Municipal and to the east with Asuogyaman District. The population of the Municipality according to 2021 population and housing census stands at 121,478 with 56,662 males and 64,816 females (www.ghanadistricts.gov.gh).

The study covers the four public secondary schools in the Lower Manya Krobo Municipality namely; Krobo Girls Presby SHS, Akuse Methodist SHTS, Akro SHTS and Manya Krobo SHS, with a total of four thousand nine hundred and eighteen school girls (4918). Krobo girls presby has a total of one thousand nine hundred and fifty-four school girls (1954), Akuse Methodist has total of eight hundred and eighty-three school girls (883), Akro senior high technical has a total of seven hundred and seventy-nine school girls (779) and Manya Krobo senior high has a total of one thousand three hundred and two school girls (1302).

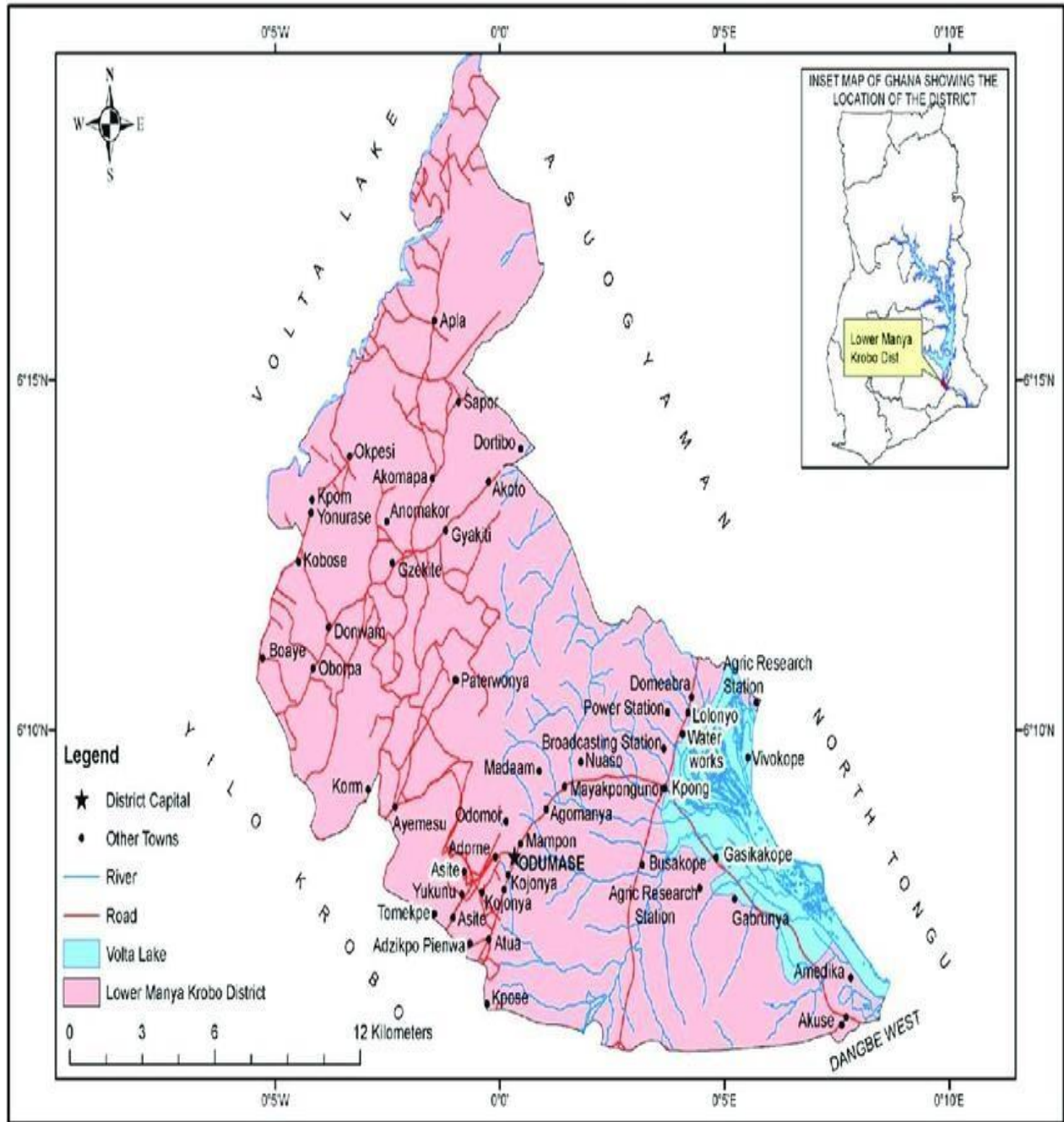


Fig 1.1: Map of the lower Manya Krobo municipal area showing the selected communities. (Source: adapted from the previous study conducted by Mensah and colleagues [43]). <https://doi.org/10.1371/journal.pone.0281216.g001>

1.9 Scope of the study

This study covers adolescents between the ages of 14-19 years from the four public senior high schools namely; Krobo Girls Presby SHS, Akuse Methodist SHTS, Akro SHTS and Manya Krobo SHS, in the lower manya krobo municipality with data on period poverty and its determinants such as the socio-demographic, economic and parental factors.

1.10 Organizational structure of the thesis

This thesis comprises of six parts. The introductory chapter, chapter one, offers an outline of the study, presenting a concise background on the concept of period poverty. It explores the causes and effects identified by previous studies globally and contextualizes them within the African context. Subsequently, the problem statement emphasizes the challenges posed by period poverty in Ghana.

In the second chapter, a literature review is conducted, providing an introduction to the chapter. It introduces the primary theory or model by Hennegan et al., that forms the foundation of the study. The chapter also examines empirical literature on period poverty, considering the various factors that contribute to period poverty on a global scale.

Chapter three outlines the methodology employed in the current study, encompassing both the research methods and design. It delineates the essential procedures necessary for the successful execution of the research project.

Chapter four presents the findings, comprising a summary of the prevalence of period poverty, socio-demographic, economic and parental characteristics of period poverty among adolescent school girls in the lower Manya Krobo municipality.

In Chapter five of this thesis, the key findings are discussed by placing them in context and establishing connections with previous research on period poverty among school-going adolescent girls. This chapter also delves into the implications of the findings.

In conclusion, Chapter six provides the study's final insights and offers recommendations for public health practice, policy, and further research concerning period poverty among adolescent school girls in the Lower Manya Krobo Municipality.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter offers a summary of both theoretical and empirical literature focusing on women, particularly adolescent females. It begins with a review of the conceptual framework by Hennegan et al., (2019). This scale was created following a review of existing literature on menstrual practices in low and middle-income nations and was tested in a preliminary survey conducted in Uganda. Following the theoretical review, there is an empirical examination of research conducted among adolescent females regarding the prevalence of period poverty, socio-demographic, economic, and parental factors linked to it. The chapter closes by identifying specific research gaps that need to be addressed.

2.2 Conceptual Framework

Understanding the causes and effects of menstruation experiences on women's and girls' health and well-being is the goal of Hennegan et al.'s (2019) integrated model of menstrual experience. The concept emphasizes how experiences are shaped by the societal context, which includes gender standards and menstruation shame. It also highlights how crucial it is to have sufficient physical infrastructure and inexpensive access to menstruation supplies. The model recognizes a number of topics related to the menstrual experience, such as practices related to the period, opinions on practices and surroundings, self-assurance, feelings of guilt and discomfort, and controlling bleeding and odor. These experience-related factors are interrelated and have a

detrimental effect on social participation, education, and mental and physical health. The model provides a framework for the creation of policies and programs aimed at enhancing the health and well-being of women and girls.

This integrated model has received support in literature with evidence on how the antecedents of menstrual hygiene management interact and produce detrimental consequences if not managed very well. For example, a study by Munro et al. (2021) concluded that studies of female university students may be adversely affected by menstruation. Similarly, Spencer (2022) in a study investigated factors influencing access to menstrual resources at various levels and concluded that knowing interconnections is critical for equitable menstrual experiences. Further, menstrual injustice is pervasive and has a detrimental effect on participants' menstrual health, according to research that looked at the experiences of women who menstruate in Barcelona and the surrounding areas of Spain between the ages of 18 and 55 years (Holst et al., 2022). The model is presented below in figure 2.1

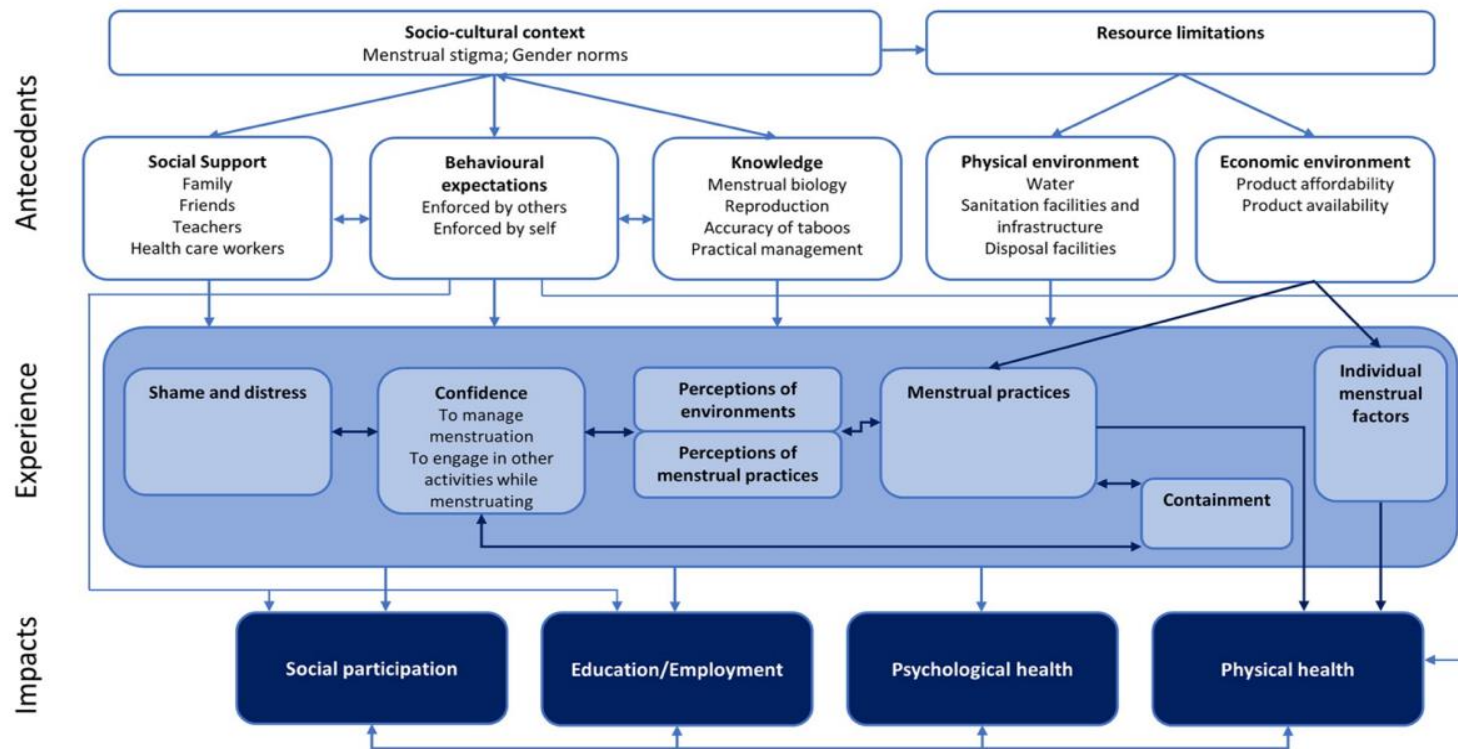


Fig 2. Integrated model of menstrual experience. Bolded headings capture themes, with subthemes presented below in unbolded text. Arrows depict directional and bidirectional relationships between themes.

<https://doi.org/10.1371/journal.pmed.1002803.g002>

2.3 Review of related studies

2.3.1 Prevalence of period poverty

Several studies have been conducted to examine the prevalence of period poverty among adolescent girls and women who experience menstruation with diverse outcomes. In a recent cross-sectional study, 700 young women between the ages of 15 and 34 years were sampled to examine the prevalence and risk factors of menstrual poverty in Spain (Gallo et al. 2023). Findings showed that 15.3% of young women in Barcelona said they had trouble affording menstruation products. In addition, young women who experience high levels of material deprivation are more likely to experience menstrual poverty; on the other hand, women who are not from the EU and those who live independently of their parents are less likely to report menstrual poverty. The authors concluded that rather than using household income as the sole benchmark, the determination of poverty should also take individual characteristics and needs into account. Although this study provides valuable insight into period poverty, the findings may not be applicable within our context as Spain is a high-income country as compared to Ghana.

In a related study, Mari-Klose, Julià, Escapa and Gallo (2023) employed a cross-sectional study design to investigate the relationship between period poverty and mental health in a representative sample of young women residing in southern European cities. The data came from a representative poll of 647 young women in Barcelona, Spain, who were between the ages of 15 and 34. Three questions about the lack of access to or improper use of menstruation products for financial reasons were combined to quantify period poverty. The risk of having poor mental health was assessed using the GHQ-12. According to the findings, 15.3% of young women said they had ever been in period poverty. Women experiencing period poverty were projected to have higher odds of having

poor mental health. It was further observed that when their income status and degree of deprivation are taken into account, this effect becomes statistically significant. Compared to young women in high-income homes, those in lower-income households are more likely to have poor mental health. Lastly, among young women experiencing period poverty, material hardship was linked to a higher likelihood of poor mental health. This study provided support for the integrated model proposed by Hennegan et al. (2019) as poor mental health was reported as a consequence of period poverty.

In a study by Vashisht et al. (2018), a mixed-methods approach was used in six government schools in Delhi to ascertain the percentage of schoolgirls absent during menstruation, variables contributing to menstruation-related absenteeism, and examine menstrual hygiene behaviors. Of the 600 teenage girls in the study, 245 reported missing school while their periods were on. Factors like the type of absorbent used, lack of privacy at school, menstrual constraints, maternal education, and menstruation-related information sources were found to be substantially associated with absenteeism. About 65 percent of respondents acknowledged the impact on regular school activities, which resulted in missed exams and sessions because of discomfort, fear, embarrassment, and worries about leaks and staining the uniform.

However, in this study (Vashisht et al. 2018), obtaining precise menarcheal ages faced challenges due to potential recall bias. Subjectivity was introduced by the dependence on self-reported data, which depended on teenagers' perceptions and honesty about the difficulties of managing their menstrual hygiene and the causes of their absences. This study indicates that there is an urgent need to look into the prevalence of period poverty in the Lower Manya Krobo municipality and develop interventions to address it. Specifically, factors that contribute to menstrual absenteeism

include the type of absorbent used, lack of privacy at school, menstrual restrictions, maternal education, and sources of information on menstruation.

In a study conducted by Kumbeni et al. (2021) in the Talensi district of rural northern Ghana, 705 teenage females, aged 12-19, who had experienced menarche participated in a cross-sectional survey to ascertain the prevalence and characteristics linked to school absence related to menstruation. According to the study, 27.5% of students missed school because of their menstruation, with absences lasting anywhere from one to seven days. Menstrual-related school absenteeism was found to be more likely in older teenage girls, those who used cloth as a sanitary material during their last period, and those who adhered to cultural norms. On the other hand, girls from middle-class families were less likely to miss school because of their periods. According to the findings, menstruation-related absences from school are a serious problem, affecting over one-third of teenage girls when they are menstruating. This emphasizes how crucial it is to manage menstrual hygiene and carry out this study in the Lower Manya Krobo Municipality in order to guarantee that girls may consistently attend school.

2.3.2 Effects of period poverty on school absenteeism

In Northeast Ethiopia, Tegegne and Sissay (2014) used a mixed-methods approach to investigate menstrual knowledge, factors influencing menstrual management, and its impact on school attendance. A total of 595 teenage schoolgirls were randomly selected to participate in the quantitative investigation. There were nine in-depth interviews, four focus groups with schoolgirls, five focus groups with school-dropping girls, and four teacher interviews. Approximately 51% of girls were found to be knowledgeable about menstruation and how to handle it. When the females had their last period, only one-third of them utilized sanitary napkins as a menstrual absorbent.

Further, when they were menstruating, more over half of the females said they had missed school. The likelihood of missing school was higher for those who did not use sanitary napkins. 58% said that after menarching, their academic performance had decreased. Furthermore, the qualitative investigation revealed that girls who did not use sanitary napkins were more likely to drop out of school if they were teased and embarrassed by their peers for having blood stains on their clothes. Thus, it's important to examine period poverty and its effect on school attendance among adolescent girls in senior high schools in the lower Manya Krobo municipality in order to inform cost-effective and evidence-based interventions.

2.3.3 Socio-demographic factors and period poverty

Socio-demographic factors refer to the social and demographic characteristics of a population or a group of people. These factors are often used to categorize and analyze different segments of society based on various characteristics. Socio-demographic factors include aspects such as age, gender, ethnicity, education level, income, occupation, marital status, household size, and geographic location.

In order to present a thorough picture of period poverty, Delanerolle et al. (2023) conducted a systematic review that included outcomes related to menstruation from both observational and randomized clinical trials. Thirty-eight of the eighty studies that were chosen were incorporated in the meta-analysis. The results indicated that 39% of women reported maintaining good menstrual hygiene, 68% reported pre-menarche menstrual education, and 45% reported using disposable sanitary pads. Furthermore, it was shown that the women's location had a statistically significant impact on how well they managed their menstrual hygiene, with women living in rural areas having a 0.70-fold lower chance of managing their menstrual hygiene than women living in urban areas.

However, there was no evidence for the effects of other socio-demographic characteristics on menstrual hygiene management among the women in the review. These findings underscore the need to examine the impact of socio-demographic characteristics on the experience of period poverty among the adolescent girls in senior high schools.

2.3.4 Barriers to menstrual hygiene management

Girls in the later stages of adolescence were less likely to have insufficient menstrual knowledge than those aged 10–14 years, according to a study that examined menstrual knowledge, socio-cultural restrictions, and barriers to menstrual hygiene management among 250 adolescent school girls, thirty school boys, and five school teachers in five junior high schools in the Kumbungu district of northern Ghana (Mohammed and Larsen-Reindorf, 2020). The finding that girls in their late teens knew more about menstruation than girls in their 10–14-year-old range emphasizes the significance of age-appropriate menstruation instruction. It may be more successful to adapt educational interventions to the needs of various age groups in order to guarantee thorough knowledge and comprehension.

In addition, girls are not allowed to cook Wasawasa or participate in other religious activities like reading the Holy Quran or praying in mosques when they are menstruating. It is not appropriate to have open discussions about menstruation and how to control it, and females are seen as dirty and filthy during this time. The limitations placed on girls, including not cooking specific foods and not engaging in religious activities, highlight the impact of cultural taboos related to menstruation. This emphasizes how cultural sensitivity in menstrual health education is necessary to address and eliminate these limitations (Mohammed and Larsen-Reindorf, 2020). The investigation also discovered that none of the schools had soap in the restrooms for adequate handwashing, mirrors

for females to check their uniforms for bloodstains, or constant access to water in their WASH facilities. A deficiency of adequate hygiene infrastructure is indicated by the absence of basic amenities such as soap and mirrors for inspecting uniforms in restroom areas. Enough water, sanitation, and hygiene (WASH) facilities in schools are essential to helping females manage their menstrual hygiene. Therefore, in order to identify adolescents who have these limitations and develop interventions to address them, a study needs to be carried out in the Lower Manya Krobo municipality.

Parameters linked to the use of reusable materials

In another Ghanaian study investigating the parameters linked to the use of reusable menstruation management products, Anabah et al. (2022) reported that in their most recent period, 13% of respondents said they used reusable materials to control their menstrual blood. Compared to women in the 15–19 age group, females in the 45–49 age group were five times more likely to utilize reusable materials to manage their menstruation. Compared to women in the lowest wealth quintile, those in the middle wealth quintile were 34% less likely to choose reusable materials. Moreover, compared to women who did not watch television, those who did had a lower likelihood of selecting reusable materials. In terms of participants' socio-demographic characteristics, it was discovered that the selection of menstruation management items was significantly influenced by age. Compared to women in the 15–19 age range, individuals in the 45–49 age group were five times more likely to use reusable materials. This implies that older women might not have the same preferences or access to menstrual hygiene-related information and tools. Therefore, there is a strong need to conduct a thorough study among teenage girls in the 14–19 age range to learn more about the use of reusable materials in menstrual cycle management.

2.3.5 Economic factors and period poverty

Recent data has surfaced, documenting challenges related to the availability of period products, indicating an inability to access them in the United States (Palovick et al., 2024). Analyzing trends over several years, period product insecurity was examined using two nationally representative samples of U.S. adults. Weighted logistic regressions were conducted based on data from nationally representative cross-sectional online surveys carried out in January 2018 and April 2021. The study focused on individuals aged 18–49 years who had menstruated in the past year. In 2021, 59% reported experiencing period product insecurity, an increase from 53% in 2018. Both in 2018 and 2021, Hispanic respondents were more likely to face challenges due to the affordability of period products. Additionally, individuals with some college attainments were associated with finding products unaffordable in both years. Participants encountering difficulties in purchasing period products had increased odds of experiencing period product insecurity in both 2018 and 2021. Notably, factors such as Hispanic ethnicity, lower educational attainment, and challenges in purchasing period products emerged as robust predictors of both finding products unaffordable and experiencing product insecurity in both years. The data highlights that, despite the passage of time, period product insecurity remains a prevalent issue, with an increase from 2018 to 2021. This underscores the persistence of challenges related to accessing affordable menstrual products.

In a study to evaluate the menstrual hygiene requirements of economically disadvantaged women in St. Louis, Missouri, an exploratory, cross-sectional approach was employed (Kuhlmann et al., 2019). The study targeted women aged 18 and above, selected from a purposive sample of 10 not-for-profit community organizations assisting low-income women in St. Louis. From July 2017 to March 2018, 183 surveys were conducted through interviews, accompanied by three focus group

discussions. The primary goal of these surveys and discussions was to understand where and how women acquire menstrual hygiene products and their strategies for managing affordability challenges. A substantial majority, comprising 64% of women, encountered difficulties affording essential menstrual hygiene supplies in the previous year, with approximately 21% facing this challenge on a monthly basis. A significant number of women resorted to makeshift solutions such as cloth, rags, tissues, or even children's diapers or paper towels obtained from public bathrooms. Nearly half of the women, accounting for 46%, found it challenging to afford both food and menstrual hygiene products in the past year.

Notably, age did not present a discernible difference in menstrual hygiene needs (Kuhlmann et al., 2019). Two-thirds of the surveyed organizations acknowledged menstrual hygiene as a requirement for their clients. Among these, thirteen organizations furnish menstrual hygiene supplies to their clients, while two organizations focus on providing menstrual hygiene education. The data underscores a significant financial barrier, with 64% of women experiencing challenges in affording necessary menstrual hygiene supplies. This highlights the economic strain on women and the direct impact on their ability to manage menstrual hygiene effectively. The finding that approximately one-fifth of women (21%) face monthly difficulties in affording menstrual hygiene supplies emphasizes the recurring nature of this challenge. It indicates an ongoing and pressing issue that requires sustained attention and support. The main limitation of the study was that, the purposive sampling approach involved selecting women who were already benefiting from assistance provided by community service organizations, which may not be accessible to other low-income women. This could lead to a cautious estimate of unmet menstrual hygiene needs among low-income women in St. Louis and may restrict the generalizability of the sample.

2.3.6 Parental factors and period poverty

Parents play a multifaceted role in supporting their daughters' menstrual hygiene management. By providing education, open communication, necessary resources, and emotional support, parents contribute to creating a positive and informed attitude toward menstruation in their families. In rural Gambia, a study was conducted to investigate the understanding, readiness, and behaviors related to menstruation and its handling among teenagers, mothers, and educators.

The research project utilized both qualitative and quantitative methods in the rural Kiang West district of The Gambia. Twenty focus group discussions and thirteen in-depth interviews were undertaken among mothers, adolescents, and teachers to investigate their perspectives on menstruation, cultural beliefs, sources and depth of understanding regarding menstruation, and practices related to menstrual hygiene management (MHM). Furthermore, a survey was conducted among 331 school girls to evaluate their knowledge, behaviors, and attitudes regarding menstruation and its management. The participants exhibited varying levels of understanding about menstruation, with post-menarche girls displaying higher knowledge scores compared to pre-menarche girls. Across all groups, there was a common expression of difficulties, embarrassment, and shame associated with discussing menstruation. Despite two-thirds of the surveyed girls reporting learning about menstruation before experiencing menarche, many felt unprepared when it occurred. While teachers served as the primary source of information, most girls preferred seeking advice from their mothers. Mothers expressed challenges in discussing menstruation with their children, particularly with sons whom they believed did not require such education, although boys displayed significant curiosity about the topic (Shah et al., 2019). The lesson here is that, teachers play a significant role as sources of information about menstruation,

but mothers are often preferred for advice. Therefore, it's important to equip both teachers and mothers with the knowledge and skills to effectively discuss menstruation with adolescents. The limitation to this study was that, it was conducted in schools with access to healthcare services at the MRCG field station, which means that the views and experiences of adolescents documented here may not fully represent those of adolescents in the broader Kiang West district of The Gambia.

In a study by Mohammed et al. (2020), maternal education served as a safeguard against insufficient menstrual knowledge. Adolescents whose mothers were illiterate were more likely to have poor knowledge about menstruation compared to those with mothers who had basic education or secondary and higher education. The comparison between adolescents with illiterate mothers and those with mothers having basic, secondary, or higher education underscores the positive correlation between maternal literacy and menstrual knowledge in their daughters. The lesson here is that higher maternal education levels are associated with better menstrual knowledge in their daughters.

Due to its positive effects on managing menstrual hygiene and the experience of period poverty, the importance of menstrual hygiene education from parents and significant others cannot be overstated (Singh et al., 2023). However, Singh's study showed that just 40.9% of parents were found to have talked to their adolescent daughters about sexual and reproductive health issues, indicating that the majority of parents do not interact with their teenage females about reproductive and health issues. This is important because menstruation and the problems it causes are stigmatized, making parental roles increasingly important.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section examines the methodologies and procedures employed for data collection, the variables incorporated in the analyses, and the statistical methods utilized for data examination. The methodology segment encompasses aspects such as data sources and sample, study variables, ethical considerations, and data analysis techniques, among others. Further details are provided below:

3.2 Research methods and design

This study adopted a quantitative approach using a cross-sectional survey design. A cross-sectional survey was employed in this study to allow for the collection of numerical data, making it easier to quantify and measure the number of adolescent girls facing the challenge of period poverty. A cross-sectional study design was used because the adolescent girls were contacted at only one point in time. The main advantage of this research design is that it allows for gathering a relatively large data within a short period of time. However, it is limited by its inability to account for transient influences on the variables of interest (Wang and Cheng, 2020).

3.3 Data collection and tools

Primary data was used for this study. Data was obtained from four public secondary schools in the Lower Manya Krobo municipality in February, 2024. Self-administered questionnaires were distributed to the participants in the various schools by the researcher and a trained research

assistant. The questionnaire used for the study was in two major parts. Part one of the questionnaire measured the socio-demographic, economic and parental factors as reported by the adolescent girls. It gathered information such as age, class, religion, programme of study, perceived family wealth, parental employment status, and parental communication about menstrual hygiene management as well as the frequency of parental communication about menstrual hygiene. (Appendix 8).

The second part of the questionnaire was the Menstrual Practice Needs Scale (MPNS-36) developed by Hennegan et al., (2020). The MPNS-36 has 6 main subscales which measure four core domains (Material and Home Environment Needs, Transport and School Environment Needs, Material reliability concerns and Change and Disposal Insecurity) and two optional domains (Reuse Needs and Reuse Insecurity). The Material and Home Environment Needs has 11 items and some examples of these items include; “My menstrual materials were comfortable”, “I had enough of my menstrual materials to change them as often as I wanted to” and “I was satisfied with the cleanliness of my menstrual materials”.

The Transport and School Environment Needs domain has 5 items and some examples of these items include; “I felt comfortable carrying spare menstrual materials with me outside my home”, “I felt comfortable carrying menstrual materials to the place where I changed them”, “When at school, I was able to change my menstrual materials when I wanted to”. The Material reliability concerns domain has 3 items and these include; “I worried that my menstrual materials would allow blood to pass through to my outer garments”, “I worried that my menstrual materials would move from place while I was wearing them”, “I worried about how I would get more of my menstrual material if I ran out”. The Change and Disposal Insecurity domain has 9 items and some

examples of these items include; “I worried about where to dispose of my used menstrual materials”, “I was concerned that others would see my used menstrual materials in the place I disposed of them”, and “When at home, I worried that I would not be able to change my menstrual materials when I needed to”.

For the reusable materials, the Reuse Needs domain has 5 items and some examples of these items include; “I had enough water to soak or wash my menstrual material”, “I had access to a basin to soak or wash my menstrual materials whenever I needed it” and “I was able to wash my menstrual materials when I wanted to”. The Reuse Insecurity domain has 3 items and these include; “I worried that someone would see me while I was washing my menstrual materials”, “I worried that my menstrual materials would not be dry when I needed them” and “I worried that others will see my menstrual materials while they were drying”.

A 4-point Likert scale was used with responses ranging from Never (0), Sometimes (1) Often (2) to Always (3). A total score for each sub-domain was derived by finding the averages of the responses by each participant. Some of the items were reverse scored according to the scoring guide by Hennegan et al., (2020) on their website (<https://www.menstrualpracticemeasures.org/mpns-36/>). Total score on the MPNS-36 could range between 0 and 3 with higher scores indicating lower period poverty and vice versa. The MPNS-36 has overall internal consistency score of 0.79 and domain specific Cronbach alpha values ranged between 0.69 and 0.81 which are also acceptable.

3.4 Study Population

The study site for this project was the Lower Manya Krobo Municipality in the Eastern Region of Ghana. Specifically, 264 adolescent females between the ages of 14 and 19 years from the four public secondary schools namely; Akuse Methodist SHTS (Akuse), Krobo Girls Presby SHS (Odumase A), Akro SHTS (Odumase B) and the Manya Krobo SHS (Manya Akpongonor) who have experienced menstruation, took part in the study.

3.5 Study variables

3.5.1 Outcome Variables

The main outcome variable in the study was period poverty as measured by the Menstrual Practice Needs Scale (MPNS-36). Based on the scoring guide, the scores for period poverty could range between 0 and 3 with higher scores indicating lower period poverty. The four core sub-domains were also analysed in some cases as outcomes variables when the explanatory variables were significant. (Appendix)

3.5.2 Explanatory Variables

The explanatory variables in this study were divided into three (3) categories. These included; 1) socio-demographic factors such as Age, Class, Programme of study and Religion, 2) Economic factors which included Father's employment status, Mother's employment status and the perceived wealth status of family. Perceived wealth status which originally had 5 levels (very poor, poor, average, rich and very rich) was recoded into three categories, namely, Poor, Average and Rich based on the limited frequencies in some of the categories. Parental factors included parental

communication about menstrual hygiene (“Parents spoken to you about menstrual hygiene?”, “How often do you speak to your parents about menstrual hygiene?”) and frequency of parental communication about menstrual hygiene management.

3.6 Sampling

A multi-stage sampling technique was used to select adolescent females from the total school population and representative samples were obtained from each of the four public secondary schools. A multi-stage sampling technique was used because purposive sampling, proportional allocation and simple random sampling techniques were used. The proportional allocation was what was used to obtain the sample size for the study. Purposive sampling, also known as judgmental or selective sampling, is a non-probability sampling method in which researchers deliberately select subjects based on specific characteristics or qualities that align with the purpose of the study. Adolescent school girls between the ages of 14 and 19 years who had experienced menstruation were deliberately selected for the purpose of the study. The simple random sampling technique was used to select the number of girls until the desired sample was reached. The sample size was calculated using the formula by Snedecor and Cochran (1989). Given by:

$$n = \frac{[Z_{\frac{\alpha}{2}}]^2 * p(1 - p)}{d^2}$$

Where, n = required sample size,

$[Z_{\frac{\alpha}{2}}]$ = reliability co-efficient,

p = proportion of study

population d = margin of

error

$[Z_{\frac{\alpha}{2}}]$ = 1.96 at 95% confidence level

p = 80% or 0.8 conventional prevalence of period

poverty d = 5% or 0.05

$$n = \frac{[1.96]^2 * 0.8(1 - 0.8)}{0.05^2}$$

$$n = \frac{3.8416 * 0.25}{0.0025}$$

n = 246

With a non-response rate of 10% (24), a total of 270 adolescent girls was required.

Prevalence(p) was 0.8 or 80% because a similar study was conducted by Alor et al.,2022 in the Northern region of Ghana.

A total sample of 270 adolescent females were selected from the four public secondary schools in the Lower Manya Krobo municipality and a total of 264 completed questionnaires were retained for analysis.

Inclusion criteria: All adolescent girls between the ages of 14-19years who currently menstruate were included in the study.

Exclusion criteria: Adolescent girls who have never menstruated before the study period and those who were severely sick were excluded.

Table 3. 1: Populations in the schools and required sample sizes

Name of school	Total girls' population	Required sample sizes
Akuse Methodist SHTS	883	$(883/4918) * 270 = 49$
Krobo Girls Presby SHS	1954	$(1954/4918) * 270 = 107$
Akro SHTS	779	$(779/4918) * 270 = 43$
Manya Krobo SHS	1302	$(1302/4918) * 270 = 71$
Total	4918	270

The total population of each school was obtained and proportionate allocation was done by finding the total number as per the required sample size. Thus, more students were selected from schools with more numbers and vice versa.

3.7 Pre-testing

The questionnaire was administered to 20 students at King David College for pretesting. This is a private senior high school located in Kpong in the Eastern region of Ghana. The pretesting helped to evaluate respondents' comprehension of the questionnaire, identify and address potential problems with the questionnaire, making it more reliable and valid. The reliability analysis using the Cronbach alpha method demonstrated good reliability with a value of 0.73.

3.8 Data handling

The completed questionnaires were collected and screened for completeness. Frequencies were run for all the items to ensure that the responses fall within the expected ranges. Questionnaires with so many missing items were deleted and a total of 264 questionnaires were retained for further analysis after the initial screening. The composite score for the MPNS-36 was computed and the domain scores were also computed for analysis.

3.9 Data Analysis

To address the first objective on period poverty, mean scores with their associated standard deviations were used as suggested by the developers of the MPNS-36. Since the outcome variable(s) are at least interval in nature, tests for mean comparison such as independent t-test and One-Way Analysis of Variance (F-test) were used to examine objectives 2 to 4 which sought to determine the influence of socio-demographic, economic and parental factors on the experience of period poverty among adolescent girls in senior high schools in the Lower Manya Krobo municipality of the Eastern region. A p-value set as 0.05 to indicate significance in all the analysis. Details of the results from the analyses are presented in chapter four of this thesis.

3.10 Ethical Considerations

The researcher sought approval from the Institutional Review Board of the Ensign Global College. Permission was sought from Ghana Education Service and also from the headmasters/mistresses of the four institutions. Respondents were duly informed about the purpose of the study and consent was sought before the questionnaires were administered. Those below 18 years signed the child assent form with consent from their head teachers. Any information regarding the identity of the respondents was not required, so as to ensure anonymity and confidentiality (See Appendices).

3.11 Limitations of the study

This study acknowledges certain limitations that should be highlighted to aid in interpreting and applying the findings. One significant limitation is the exclusive focus on adolescents attending school, neglecting those who are not enrolled and are therefore at higher risk of period poverty, due to various predispositions. Consequently, the findings are restricted in their applicability to in-school adolescents and may not fully represent the diverse range of adolescents.

3.12 Assumptions

It is assumed that adolescents would experience high period poverty due to recent price increments due to taxes and the general economic circumstances that characterize the country as a whole. Due to WASH constraints in most of the senior high schools, it was expected that adolescents will report period poverty in specific domains of the MPNS-36 in addition to their overall period poverty. It was further assumed that socio-demographic factors, economic factors and parental factors would significantly influence the level of period poverty experienced by the adolescent girls in the selected senior high schools.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter consists of the findings on the socio-demographic profiles of the participants in the study, a descriptive statistics of period poverty, socio-demographic characteristics associated with period poverty among adolescent school girls, economic factors associated with period poverty among adolescent school girls and parental factors associated with period poverty among adolescent school girls.

4.2 Sociodemographic characteristics of the adolescents

Results from the socio-demographic show that majority of the study sample were below the age of 18 years (73%) with a mean age of 16.59 years with a standard deviation of 1.34 years (Table 4.1). Majority (60.61%) of the students were in SHS3 with the remaining students in SHS1 (39.39%). In terms of programmes of offer, half (50.38%) were General Arts students followed by 22.35%, 15.53%, 4.17%, 4.17% and 3.41% offering General Science, Home Economics, Agricultural Science, Business and Visual Arts respectively. Majority (96.97%) of the students were Christians with only 3.03% being non-Christians. In terms of maternal employment status, majority (65.27%) of the students reported that their mothers were self-employed. For paternal employment status, 48.28% the students reported that their fathers were self-employed and 41.38% reported that their fathers were formally employed. For perceived family wealth status, 68.94%

of the students perceived their wealth to be average, 22.73%, 4.92%, 2.27% and 1.14% reported to be rich, poor, very rich and very poor respectively. Majority (87.12%) of the students indicated that their parent(s) had ever spoken to them about menstrual hygiene whereas 12.88% reported that their parent(s) had never spoken to them about menstrual hygiene. In terms of frequency of communication with parents about menstrual hygiene, majority (63.22%) of the students indicated that their parents sometimes talk to them about menstrual hygiene and the remaining students reported that their parent(s) often (12.64%), never (12.64%) and always (11.49%) talk to them about menstrual hygiene. The details are presented in Table 4.1 below.

Table 4.1: Sociodemographic characteristics of the adolescents

Variables	Frequency	Percentage
Age (Mean = 16.59, SD =1.34)		
14	19	7.20
15	46	17.42
16	43	16.29
17	87	32.95
18	53	20.08
19	16	6.06
Class		
SHS 1	104	39.39
SHS 3	160	60.61
Religion		
Christianity	256	96.97
Islam	7	2.65

African Traditional	1	0.38
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Table 4.1 Sociodemographic characteristics of the adolescents. (Cont.)

Programme		
Agricultural Science	11	4.17
General Arts	133	50.38
Business	11	4.17
General Science	59	22.35
Home Economics	41	15.53
Visual Arts	9	3.41
Mother's employment		
Employed	68	25.95
Self-employed	171	65.27
Unemployed	22	8.40
Retired	1	0.38
Father's employment		
Employed	108	41.38
Self-employed	126	48.28
Unemployed	11	4.21
Retired	16	6.13
Wealth status		
Very poor	3	1.14
Poor	13	4.92
Average	182	68.94
Rich	60	22.73
Very rich	6	2.27
Parents ever spoken to you about menstrual hygiene		
No	34	12.88
Yes	230	87.12
Frequency of talks with parents about menstrual hygiene		
Never	33	12.64

Sometimes	165	63.22
Often	33	12.64
Always	30	11.49

4.2 Period poverty among adolescent girls

The overall mean score of period poverty as measured by the MPNS 36 was 1.84 out of 3.00. According to the scoring guide, this mean score indicates a marginally below average period poverty among the students sampled. For the various domains of period poverty, students had a mean score of 2.31, 2.03, 1.92 and 1.37 on their Material and Home Environment Needs, Change and Disposal Insecurity, Material reliability concerns and Transport and School Environment Needs respectively. The results show that students experience the highest period poverty in the domain of Transport and School Environment Needs. For the specific issues of concern in Transport and School Environment Needs, students had problems with the place they use to change their menstrual materials followed by a lack of clean place to change their menstrual materials. Details are presented in Table 4.2 below.

For the few participants who reported using reusable menstrual materials, they experience high reusable needs with a mean score of 1.02 out of 3. In terms of the components, lack of access to a basin to soak or wash their menstrual materials whenever needed (0.78/3) and lack of enough water to soak or wash their menstrual materials (0.99/3) were the major challenges that they faced. For reuse insecurity, a mean score of 2.35 out of 3 shows a low period poverty in this domain. This suggests that in terms of reuse security issues, most of the students are doing well as shown in Table 4.2.

Table 4.2: Summary of period poverty among adolescent girls

Items	Min.	Max.	Mean	SD
Material and Home Environment Needs (total score=2.31, SD= 0.46)				
My menstrual materials were comfortable	0	3	1.85	0.97
I had enough of my menstrual materials to change them as often as I wanted to	0	3	2.27	0.92
I was satisfied with the cleanliness of my menstrual materials	0	3	2.28	0.97
I could get more of my menstrual material when I needed to	0	3	2.24	0.98
I felt comfortable storing [keeping] my leftover or cleaned menstrual materials until my next period	0	3	1.85	1.30
I was able to wash my hands when I wanted to	0	3	2.34	0.91
I was able to immediately dispose of my used menstrual materials	0	3	2.57	0.81
I was able to dispose of my used materials in the way that I wanted to	0	3	2.05	1.16
When at home, I was able to change my menstrual materials when I wanted to	0	3	2.71	0.73
When at home, I was satisfied with the place I used to change my menstrual materials	0	3	2.70	0.71
When at home, I had a clean place to change my menstrual materials	0	3	2.59	0.86
Transport and School Environment Needs. total score=1.37, SD= 0.65				
I felt comfortable carrying spare menstrual materials with me outside my home	0	3	1.83	1.16
I felt comfortable carrying menstrual materials to the place where I changed them	0	3	1.73	1.15
When at school, I was able to change my menstrual materials when I wanted to	0	3	1.39	1.02
When at school, I was satisfied with the place I used to change my menstrual materials	0	3	0.85	0.98
When at school, I had a clean place to change my menstrual materials	0	3	1.05	1.07
Material reliability concerns. total score= 1.92, SD= 0.72				
I worried that my menstrual materials would allow blood to pass through to my outer garments	0	3	1.89	0.96
I worried that my menstrual materials would move from place while I was wearing them	0	3	1.86	0.93
I worried about how I would get more of my menstrual material if I ran out	0	3	2.00	1.02

Table 4.2 Summary of period poverty among adolescent girls. (Cont.)

	Min.	Max.	Mean	SD
Change and Disposal Insecurity	total score=2.03, SD= 0.48			
I worried about where to dispose of my used menstrual materials	0	3	1.73	1.11
I was concerned that others would see my used menstrual materials in the place I disposed of them	0	3	1.23	1.18
When at home, I worried that I would not be able to change my menstrual materials when I needed to	0	3	2.58	0.83
When at home, I worried that someone would see me while I was changing my menstrual materials	0	3	2.51	0.88
When at home, I worried that someone would harm me while I was changing my menstrual materials	0	3	2.75	0.69
When at home, I worried that something else would harm me while I was changing my menstrual materials (e.g., animals, insects, unsafe structure)	0	3	2.64	0.75
When at school, I worried that I would not be able to change my menstrual materials when I needed to	0	3	1.66	1.72
When at school, I worried that someone would see me while I was changing my menstrual materials	0	3	1.16	1.15
When at school, I worried that someone would harm me while I was changing my menstrual materials	0	3	1.93	1.19
Those reusing materials...				
Reuse Needs	total score=1.02, SD= 1.12			
I had enough water to soak or wash my menstrual material	0	3	0.99	1.27
I had access to a basin to soak or wash my menstrual materials whenever I needed it	0	3	0.78	1.14
I was able to wash my menstrual materials when I wanted to	0	3	1.08	1.30
I had enough soap to wash my menstrual materials	0	3	1.18	1.32
I was able to dry my materials when I wanted to	0	3	1.16	1.33
Reuse Insecurity	total score= 2.35, SD= 0.84			
I worried that someone would see me while I was washing my menstrual materials	0	3	2.32	1.02
I worried that my menstrual materials would not be dry when I needed them	0	3	2.44	0.92
I worried that others will see my menstrual materials while they were drying	0	3	2.30	1.05
Total- 1.84				

4.3 Socio-demographic characteristics and period poverty among adolescent school girls

Results from Table 4.3 show that the age of adolescent school girls did not have any significant effect on their experience of period poverty at the 0.05 level of significance, $t(228) = 0.77$, $p\text{-value} = 0.443$. Thus, no statistically significant difference exists between adolescent girls aged 14-17 years (mean = 1.84) and those who are aged 18 to 19 years (mean = 1.80) in their experience of period poverty. It was also observed that the class of students did not have any statistically significant effect on their experience of period poverty at the 0.05 level of significance, $t(228) = 0.32$, $p\text{-value} = 0.753$. Thus, students in SHS1 (mean = 1.82) and students in SHS3 (mean = 1.84) did not differ significantly in their experience of period poverty.

The influence of programme of study on period poverty was examined and the results showed that programme of study did not have any statistically significant effect on adolescent school girls' period poverty at the 0.05 level of significance, $t(228) = 0.82$, $p\text{-value} = 0.538$. Thus, there was no significant difference in the experience of period poverty due to the program of offer. Similarly, the religious affiliation of the students did not have any statistically significant effect on their experience of period poverty at the 0.05 level of significance, $t(228) = 0.29$, $p\text{-value} = 0.748$. Thus, no significant differences were found in the experience of period poverty due to students' religious affiliation.

Table 4.3: Socio-demographic characteristics and period poverty among adolescent school girls

Variables	N	Mean	SD	Statistic (T/F)	p-value
Age category					
14-17years	168	1.84	.35	0.77	0.443
18-19years	62	1.80	.30		
Class					
SHS 1	88	1.82	.37	0.32	0.753
SHS 3	142	1.84	.32		
Programme					
Agricultural Science	7	1.71	.24	0.82	0.538
General Arts	118	1.83	.32		
Business	11	1.74	.37		
General Science	50	1.86	.30		
Home Economics	36	1.82	.44		
Visual Arts	8	2.00	.45		
Religion					
Christianity	224	1.83	.34	0.29	0.748
Islam	5	1.90	.21		
African Traditional	1	1.62	.00		

4.4 Economic factors and period poverty among adolescent school girls

The effect of perceived wealth status of students on their experience of period poverty was examined using the One-Way Analysis of Variance and results showed that perceived wealth status had a statistically significant effect on the experience of period poverty at the 0.05 level of significance, $F = 5.94$, $p\text{-value} = 0.003$. Analysis of the mean period poverty score showed

that the students from poor homes (mean = 1.68) experienced higher period poverty compared with students from both average (mean = 1.80) and rich (mean = 1.95) homes. Since perceived wealth status significantly influenced the overall period poverty, the effect on sub-domains (excluding reusables) were also analyzed. Results showed that with the exception of Change and Disposal Insecurity ($F = 0.27$, $p\text{-value} = .760$), perceived wealth status of the students had statistically significant effects on Material and Home Environment Needs (5.88 , $p\text{-value} = 0.003$), Transport and School Environment Needs ($F = 5.97$, $p\text{-value} = 0.003$) and Material reliability concerns ($F = 5.26$, $p\text{-value} = 0.006$) respectively at the 0.05 level of significance. Details are summarized in Table 4.4.

Table 4.4: One-Way ANOVA of Economic factors and period poverty

Wealth Status	N	Mean	SD	Statistic (F)	p-value
<i>Overall period poverty</i>					
Poor	14	1.68	0.32	5.94	0.003
Average	158	1.80	0.33		
Rich	58	1.95	0.34		
<i>Material and Home Environment Needs</i>					
Poor	15	2.16	0.46	5.88	0.003
Average	172	2.27	0.48		
Rich	63	2.48	0.33		
<i>Transport and School Environment Needs</i>					
Poor	16	1.41	0.87	5.97	0.003
Average	179	1.28	0.61		
Rich	65	1.60	0.64		
<i>Material reliability concerns</i>					
Poor	16	1.40	0.99	5.26	0.006
Average	176	1.92	0.69		
Rich	62	2.04	0.70		
<i>Change and Disposal Insecurity</i>					
Poor	15	1.96	0.52	0.27	0.760
Average	178	2.02	0.46		
Rich	62	2.06	0.54		

4.5 Parental factors and period poverty among adolescent school girls

One-Way ANOVA and independent t-tests were performed to determine the effects of the various parental factors on the experience of period poverty among adolescents. Results from Table 6 showed that parental communication about menstrual hygiene had a statistically significant effect on the experience of period poverty among the adolescent school girls at the 0.05 level of significance, $t(228) = 3.48$, $p\text{-value} = <0.001$. Thus, adolescents whose parents had communicated about menstrual hygiene with them reported a significantly lower period poverty (mean = 1.86) than adolescents whose parents never communicated with them about menstrual hygiene (mean = 1.62). It was also observed that frequency of parental communication about menstrual hygiene had a statistically significant effect on the experience of period poverty among adolescent school girls at the 0.05 level of significance, $F = 4.24$, $p\text{-value} = 0.006$. Post-hoc analysis using the Scheffe's test showed that significant differences exist between those who have never had any communication on menstrual hygiene from their parents and those who have had this communication occasionally, often and always as shown in Table 4.5.

On the other hand, examination of the parental employment status did not reveal any significant effects for both mothers' ($F = 0.58$, $p\text{-value} = 0.564$) and fathers' ($F = 0.96$, $p\text{-value} = 0.411$) employment status. Thus, the experience of period poverty among the adolescent school girls did not differ significantly across the various employment statuses of the students. Summary of the details of means scores of the various employment categories is presented in Table 4.5.

Table 4.5: One-Way ANOVA and Independent t-test of Parental factors and period poverty

Variables	N	Mean	SD	Statistic (T/F)	p-value
<i>Parental communication about menstrual hygiene</i>					
Yes	203	1.86	0.31	3.48	<0.001
No	27	1.62	0.47		
<i>Frequency of parental communication about menstrual hygiene</i>					
Never	26	1.61	0.46	4.24	0.006
Sometimes	145	1.85	0.31		
Often	30	1.87	0.28		
Always	26	1.87	0.36		
<i>Mother's employment status</i>					
Employed	56	1.79	0.34	0.58	0.564
Self-employed	154	1.84	0.32		
Unemployed	19	1.86	0.44		
<i>Father's employment status</i>					
Employed	98	1.85	0.37	0.96	0.411
Self-employed	107	1.83	0.32		
Unemployed	9	1.88	0.30		
Retired	14	1.69	0.32		

CHAPTER FIVE

DISCUSSION

3.1 Introduction

This chapter presents the findings from the study by discussing their meanings and relevance in relation to previous literature. It also highlights the contextual explanations and implications of these findings to adolescent health and wellbeing. The chapter is divided into four sub-themes and these include; prevalence of period poverty among adolescent school girls, socio-demographic factors and period poverty among adolescent school girls, economic factors and period poverty among adolescent school girls and finally, parental factors and period poverty among adolescent school girls. The details of the various themes are discussed with reference to relevance literature.

3.2 Prevalence of period poverty among adolescent school girls

The prevalence of period poverty among adolescent girls was 1.84 out of 3.00, indicating a marginally below average period poverty in the Lower Manya Krobo municipality. The figure above highlights a considerable portion of adolescent girls are affected by inadequate access to menstrual hygiene resources and facilities. This underscores the severity of the issue and the urgent need for interventions. Evidence in the adolescent health literature suggest that period poverty could predispose adolescents and young women who menstruate to several negative health, social and educational outcomes (Hennegan et al., 2019; Marí-Klose et al., 2023). Findings regarding the specific domains of period poverty showed that Transport and School Environment needs recorded the highest period poverty among adolescent school girls in the Lower Manya Krobo Municipality, with a mean score of 1.37 out of 3.00 whereas Material and Home Environment

Needs reported the lowest period poverty. Participants reported specifically unmet menstrual hygiene needs with “the satisfaction of the place they use to change their menstrual materials” and “a clean place to change their menstrual materials”, with scores of 0.85 and 1.05 out of 3, respectively. The findings from this study are similar to a study conducted among adolescent and young adult females in two rural communities in Haiti on menstrual health by Rupe et al. (2022) with regards to the overall period poverty. However, the findings regarding the domain specific period poverty were incongruous with menstrual hygiene needs with menstrual material reliability and Change insecurity as reported by Rupe et al. (2022). These variations could be due to socio-economic and contextual differences between Ghana and Haiti as Haiti is plagued with a lot of political upheaval and socio-economic deprivations.

The high period poverty reported in the Transport and School Environment needs have implications for adolescents’ educational outcomes as previous studies have reported school absenteeism as a major consequence of period poverty (Kumbeni et al., 2021; Vashisht et al., 2018; Tegegne and Sissay 2014). Inadequate facilities for changing menstrual materials can result in discomfort and anxiety for adolescent girls. Without access to clean and private facilities, they may feel embarrassed or self-conscious about managing their menstrual hygiene at school. This discomfort can lead to physical discomfort, which may discourage girls from attending school during their menstruation. The findings from this study are similar with the MPNS-36 validation study conducted among schoolgirls in Uganda (Hennegan et al., 2019).

For the few participants who reported using reusable menstrual materials, they experience high reusable needs with a mean score of 1.02 out of 3. In terms of the components, lack of access to a basin to soak or wash their menstrual materials whenever needed (0.78/3) and lack of enough water to soak or wash their menstrual materials (0.99/3) were the major challenges that they faced. This

means that participants who reported using reusable menstrual materials faced challenges related to access to facilities for cleaning and washing these materials, as indicated by their high mean score for reusable needs. The findings underscore the need for providing a secure WASH facility in our senior high schools to enable students experience comfort with reusable menstrual materials.

3.3 Socio-demographic factors and period poverty among adolescent school girls

Evidence in the extant literature has shown variations in period poverty as results of certain socio-demographic factors. Thus, this study examined socio-demographic characteristics associated with period poverty and findings showed that none of the socio-demographic characteristics considered in the study had any statistically significant effect on period poverty among adolescent school girls. For example, the age of the students did not have any significant influence on the experience of period poverty. This finding contradicts an earlier study on menstrual knowledge, socio-cultural restrictions and barriers to menstrual hygiene management among 250 adolescent school girls in the Kumbungu district of northern Ghana which found that girls in the later stages of adolescence were less likely to have insufficient menstrual knowledge than those aged 10-14 years (Mohammed and Larsen-Reindorf, 2020).

One of the plausible reasons why there was no significant association between age and period poverty could be that period poverty may be a widespread issue affecting adolescent girls across various age groups and class levels within the same community or school system. Factors such as inadequate menstrual hygiene facilities, stigma surrounding menstruation, and limited access to menstrual hygiene products are factors that will cause period poverty and not necessarily the age. Thus, period poverty is a widespread issue which is not limited to any particular age group.

Similarly, the class level of students did not exhibit a statistically significant effect on their experience of period poverty at the 0.05 level of significance. Thus, there was no significant difference observed between students in SHS1 (mean score of 1.82) and students in SHS3 (mean score of 1.84) concerning their experience of period poverty. Again, period poverty may not necessarily be due to the class of the girl-child. It's about the impact of menstrual knowledge by parents and school teachers on the adolescent girl, regardless of her class. Thus, the focus of menstrual hygiene education should not be limited to only the upper or senior classes with the assumption that they might be more likely to experience period poverty.

Additionally, the study investigated how the program of study and religious affiliation relate to period poverty among adolescent school girls. The findings revealed that neither the program of study nor the religious affiliation of the students had a statistically significant impact on their experiences of period poverty. This indicates that there were no significant differences in period poverty experiences based on the program of study or the religious affiliation of the students. This finding contradicts the study by Mohammed and Larsen-Reinddorf (2020) that some girls in the Kumbungu district of Ghana were not allowed to cook Wasawasa or participate in other religious activities like reading the Holy Quran or praying in mosques when menstruating. This perhaps could be because only 7 Muslim adolescent school girls participated in the present study, thus it was difficult to have a statistical significance between their religious affiliation and period poverty. This calls for further investigation among Muslim adolescent school girls regarding cultural restrictions during menstruation in the Lower Manya Krobo municipality. Any public health efforts aimed at addressing period poverty among adolescent school girls in the Lower Manya Krobo enclave should include all the girls regardless of their religion or programme of study.

3.4 Economic factors and period poverty among adolescent school girls

The study investigated how students' perceived wealth status impacts their experience of period poverty and findings showed a statistically significant influence of perceived wealth status on experience of overall period poverty. Analysis of mean period poverty scores indicated that students from economically disadvantaged backgrounds (mean = 1.68) reported higher levels of period poverty compared to those from both average (mean = 1.80) and affluent (mean = 1.95) households. This finding is consistent with previous findings by Kuhlmann et al. (2019) who reported that the participants' ability to afford menstrual products is dependent on their perceived wealth status. Period poverty also refers to the inability to afford menstrual products or manage menstruation in a hygienic way due to financial constraints. Participants who perceive their family to be economically disadvantaged are not likely to have the wherewithal to afford menstrual products and this will lead to experience of high period poverty.

Given the significant effect of wealth status on overall period poverty, the study also examined its impact on specific aspects, excluding reusable items. Findings demonstrated that, wealth status significantly influenced Material and Home Environment Needs, Transport and School Environment Needs, and Material reliability concerns. Thus, wealthier individuals or families are more likely to have the financial means to afford a consistent supply of menstrual products, such as pads, tampons, or menstrual cups. They can purchase these items in bulk or opt for higher-quality, more expensive options. In contrast, individuals experiencing period poverty may struggle to afford these products, leading to improvised solutions or inadequate menstrual hygiene management. Wealthier households often have access to clean and private sanitation facilities, which are essential for managing menstruation hygienically and comfortably. This includes having

indoor toilets with running water, sanitary waste disposal options, and adequate hygiene products like soap and toilet paper. In contrast, individuals from poor homes may lack access to such facilities, relying on inadequate or unsanitary options, leading to period poverty.

One of the questions in the MPNS-36 under Transport and School Environment needs is "I was able to change my menstrual materials when I wanted to". Results from our study proved that wealth status significantly influenced Transport and School Environment needs because people experiencing period poverty may not have the resources to purchase menstrual products regularly, leading to the prolonged use of products, using other alternatives like toilet paper or rags, or even missing out on school or work during their periods (Kumbeni et al., 2021, Tegegne and Sissay., 2014) Conversely, individuals who can change their menstrual materials whenever they want typically have the financial means to afford these products and are not constrained by the lack of access or affordability (Palovick et al., 2024).

The perceived wealth status was also statistically significant with Material and Reliability concerns. Individuals who are economically disadvantaged may struggle to afford an adequate supply of menstrual products, leading to concerns about running out and being unable to access more. This can be particularly challenging for those living in poverty or facing financial instability, as they may have to prioritize other basic needs over purchasing menstrual products, while individuals with greater financial means are typically better equipped to afford menstrual products and not necessarily be bothered if they ran out of it (Hennegan et al., 2019; Krusz et al., 2019; Ramsay, 2023).

3.5 Parental factors and period poverty among adolescent school girls

Parental involvement has been shown to play a significant role in the lives of adolescents in multiple domains including academic performance, risky sexual behaviours and other health and behavioural outcomes (Kugbey et al., 2018; Nyarko, 2007; Opong Asante, and Kugbey, 2019). This study examined whether parental communication about menstrual hygiene has any significant influence on the experience of period poverty among adolescent school girls and found that parental communication regarding menstrual hygiene has a significant effect on the experience of period poverty among adolescent female students. Thus, adolescents who had ever received communication from their parents about menstrual hygiene exhibited notably lower levels of period poverty compared to those whose parents had not engaged in such discussions. This makes perfect sense because period poverty is also a lack of access to menstrual education.

Parents especially mothers are supposed to educate their children about menstrual hygiene management (Shah et al., 2019). Parents who communicate openly with their children about menstrual hygiene provide them with essential knowledge and understanding regarding their bodies and menstruation. This education empowers girls to manage their periods effectively and with confidence, reducing the likelihood of feeling ashamed or embarrassed about menstruation. Open communication between parents and adolescents about menstruation can contribute to improved psychological well-being. Adolescents may feel more comfortable discussing their menstrual needs with their parents, leading to reduced stigma and shame surrounding menstruation.

In terms of the impact of the frequency of parental communication regarding menstrual hygiene on the experience of period poverty, the findings showed that frequency has a statistically

significant effect on period poverty. Further analysis showed that adolescents whose parents never had any communication with them regarding menstrual hygiene consistently reported higher experience of period poverty compared to the other categories. However, no significant differences were observed with the various frequency of communication groups. This finding means that, regardless of the frequency of the communication, those with no parental communication experience more poverty. This can be explained from the perspective of increased knowledge regarding menstruation from parental communication. That is, adolescents whose parents talk to them about menstruation may have increased knowledge which impacts positively on their menstrual hygiene management and thus, less experience of period poverty. Evidence from literature has suggested that increased menstrual knowledge is a significant factor in effective menstrual hygiene management (Bulto, 2021; Mohammed and Larsen-Reindorf, 2020). Regular communication between parents and their daughters is key to preventing period poverty (Singh et al., 2023). Regular communication from parents about menstrual hygiene can enhance awareness and knowledge among adolescent girls. This education can include proper menstrual hygiene practices, access to sanitary products, and understanding the implications of period poverty.

However, parental employment statuses of both mother and father showed no significant impact on the experience of period poverty among adolescent school girls. It suggests that the experience of period poverty among adolescent school girls may not be significantly influenced by whether their mothers or fathers are employed. This implies that period poverty can affect girls irrespective of their parents' employment status. The main determining factor will be the level of income as already reported in this study and not merely employment. This is because, most Ghanaian workers earn salaries that hover around the poverty line and therefore, being employed or not might not necessarily be a key determining factor in adolescents' experience of period poverty.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The current study examines period poverty and associated factors among adolescent school girls in the public senior high schools in the Lower Manya Krobo Municipality of the Eastern region. This study on period poverty among teenage schoolgirls illuminates a crucial problem affecting the health and wellness of young women. According to the findings, there are certain difficulties, especially with regard to Material and Home Environment Needs, Change and Disposal Insecurity, Material Reliability Concerns, and Transport and School Environment Needs, even though total period poverty was marginally below average. These findings highlight the necessity of focused public health initiatives to deal with these particular problem areas.

Further, the socio-demographic, economic and parental factors were investigated to determine their impacts on the experience of period poverty among the adolescent school girls. Surprisingly, the study did not discover a statistically significant association between sociodemographic characteristics like age, religion, class, or study programme and period poverty. Nonetheless, there was an association between reduced period poverty and economic considerations, as shown by perceived wealth status, underscoring the importance of financial resources in menstruation management. In the face of high costs of menstrual materials, this finding is crucial in informing debates around the high taxes on menstrual materials and the roles of various stakeholders in addressing the issue.

One important factor affecting period poverty has been identified as parental communication regarding the management of menstrual hygiene. The study emphasizes the value of parents and their daughters having honest and productive conversations about menstruation, and it suggests that these conversations can lessen period poverty. Thus, parental involvement in adolescents' lives should not be limited to meeting their financial needs but also their sexual and reproductive needs to promote the health and well-being of these adolescents through effective communication.

The study's overall conclusions have significant ramifications for health promotion initiatives meant to alleviate period poverty among teenage females. The difficulties young women experience in efficiently managing their menstruation might be lessened with targeted initiatives that emphasize expanding access to resources, guaranteeing secure and clean surroundings, and encouraging candid discussion about menstruation.

6.2 Recommendations

Based on the findings from this study, the following recommendations are offered across the spectrum of stakeholders.

6.2.1 Public Health Practice

Health promotion initiatives should concentrate on addressing the particular requirements found in the study, according to the findings. First and foremost, PTA meetings should also be an avenue for educating and encouraging parents to have frequent communication with their female wards about menstrual hygiene management and reproductive health to help alleviate period poverty. Community leaders should also organize meetings in the Lower Manya Krobo municipality to encourage these parents to communicate frequently with their wards about menstruation.

Menstrual pads should also be added to girls' prospectus at school. Providing menstrual pads at school alleviates the financial burden on families, particularly those from low-income backgrounds.

The Borgen Project- Days for girls' kit

Days for girls, started in 2008 and headquartered in the US, with additional offices in Ghana, is a global non-profit organization that works towards providing sanitary menstrual products and eliminating the stigma that women and girls face for having periods. The kit includes reusable pad, underwear, washcloth, soap, liners, a use and care instructions sheet, a small bag to keep things separate and a larger drawstring bag to carry everything. These kits are sent to developing countries where period poverty is prevalent. The heads of the four public secondary schools as well as the community leaders at the Lower Manya Krobo Municipality should collaborate and write to this non-profit organization for the distribution of these kits to the adolescent school girls to help alleviate period poverty.

6.2.2 Policy

The government of Ghana should explore opportunities to scrape taxes off menstrual products; to make them more affordable for adolescent school girls. These policy suggestions can be effectively implemented through cooperation between the government, education authorities, health agencies, and community partners.

6.2.3 Public Health Research

Further qualitative study should be conducted to better understand the parental factors influencing period poverty; to find out why some parents do not communicate with their female wards about menstruation. For example, “What are the perceived barriers that prevent parents from engaging in discussions about menstruation with their female wards?” “How do parents' own experiences with menstruation shape their approach to discussing it with their daughters?”. Further research should also be conducted to find out the period poverty status in private schools.

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APPENDICES

Appendix I: Plagiarism Report Period Poverty

ORIGINALITY REPORT

18%	15%	12%	8%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.ncbi.nlm.nih.gov Internet Source	2%
2	ghanadistricts.com Internet Source	1%
3	www.researchgate.net Internet Source	1%

Appendix II: Permission from Ghana Education Service-Lower Manya Krobo Municipality

GHANA EDUCATION SERVICE

In case of reply the number and date of
this letter should be quoted
EL-0315-9671
Ref.No



MUNICIPAL EDUCATION OFFICE
P. O. BOX 49
ODUMASE - KROBO
6TH DECEMBER, 2023

Email: lowermanyakrobo.edu@gmail.com / lowermanyakrobo@ges.gov.gh

REPUBLIC OF GHANA

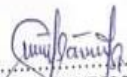
**ESIGN GLOBAL COLLEGE
KPONG
TEMA – AKOSOMBO ROAD**

**RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT SENIOR HIGH
SCHOOLS IN THE LOWER MANYA KROBO MUNICIPALITY**

Approval has been granted to you per your request to undertake your research study in the Senior High Schools of the Municipality.

It is my hope that you will comply with all the necessary measures with regards to your study.

My best wishes.


.....
MR. SAMUEL KWESI TETTEY
MUNICIPAL DIRECTOR OF EDUCATION
LOWER MANYA KROBO
MUN. DIRECTOR OF EDUCATION
LOWER MANYA
ODUMASE - KROBO, E.F.

Appendix III: Ethical Clearance from Ensign Global College, Kpong



OUR REF: ENSIGN/IRB/EL/SN-242
YOUR REF:

January 16, 2024.

INSTITUTIONAL REVIEW BOARD SECRETARIAT

Rosemary Lartey-Nyaunu
Ensign Global College
Kpong.

Dear Rosemary,

ETHICAL CLEARANCE TO UNDERTAKE POSTGRADUATE RESEARCH

At the General Research Proposals Review Meeting of the *INSTITUTIONAL REVIEW BOARD (IRB)* of Ensign Global College held on Monday, January 15, 2024, your research proposal entitled “**Assessing Period Poverty amongst Adolescent School Girls in the Lower Manya Krobo Municipality in the Eastern Region of Ghana**” was considered.

You have been granted Ethical Clearance to collect data for the said research under academic supervision within the IRB's specified frameworks and guidelines.

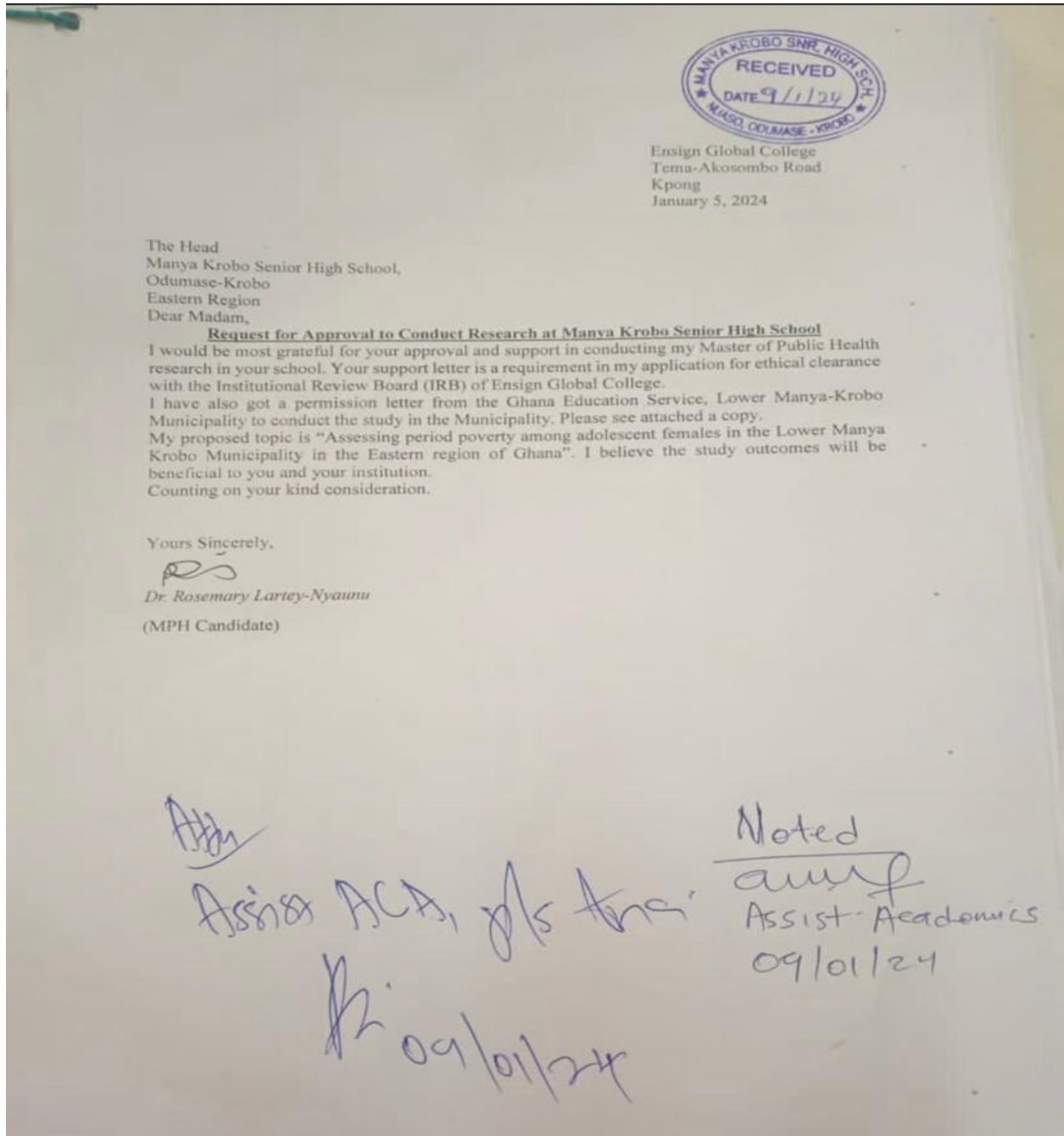
We wish you all the best.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rebecca Acquaaah-Arhin".

Dr. (Mrs.) Rebecca Acquaaah-Arhin
IRB Chairperson

Appendix IV: Approval Letter from MAKROSEC



Appendix V: Approval Letter from AMEST

Ensign Global College
Tema-Akosombo Road
Kpong
January 5, 2024

The Head
Akuse Methodist Senior High Technical School,
Akuse

Dear Sir/Madam,

Request for Approval to Conduct Research at Akuse Methodist SHTS (Akuse)

I would be most grateful for your approval and support in conducting my Master of Public Health research in your school. Your support letter is a requirement in my application for ethical clearance with the Institutional Review Board (IRB) of Ensign Global College.

I have also got a permission letter from the Ghana Education Service, Lower Manya-Krobo Municipality to conduct the study in the Municipality. Please see attached a copy.

My proposed topic is "Assessing period poverty among adolescent females in the Lower Manya Krobo Municipality in the Eastern region of Ghana". I believe the study outcomes will be beneficial to you and your institution.

Counting on your kind consideration.

Yours Sincerely,



Dr. Rosemary Lartey-Nyaumu

(MPH Candidate)

Approval
Lany Seay
HEADMASTER
AKUSE METHODIST SENIOR HIGH TECH SCH
P. O. BOX 47
AKUSE - E/R.

Appendix VI: Approval Letter from Akro SHTS

Ensign Global College
Tema-Akosombo Road
Kpong
January 5, 2024

The Head
Akro Senior High Technical School,
Odumase-Krobo
Odumase B
Dear Sir/Madam,

Request for Approval to Conduct Research at Akro Senior High Technical School

I would be most grateful for your approval and support in conducting my Master of Public Health research in your school. Your support letter is a requirement in my application for ethical clearance with the Institutional Review Board (IRB) of Ensign Global College.

I have also got a permission letter from the Ghana Education Service, Lower Manya-Krobo Municipality to conduct the study in the Municipality. Please see attached a copy.

My proposed topic is "Assessing period poverty among adolescent females in the Lower Manya Krobo Municipality in the Eastern region of Ghana". I believe the study outcomes will be beneficial to you and your institution.

Counting on your kind consideration.

Yours Sincerely,



Dr. Rosemary Lartey-Nyaamu

(MPH Candidate)



09/01/2024

HEADMASTER
AKRO SENIOR HIGH TECH.
SCHOOL
P. O. BOX 18
ODUMASE - KROBO

Appendix VII: Approval Letter from Krobo Girls SHS

Ensign Global College
Tema-Akosombo Road
Kpong
January 5, 2024

The Head
Krobo Girls Presby Senior High School,
Odumase-Krobo
Odumase
Dear Madam,

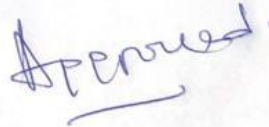
Request for Approval to Conduct Research at Krobo Girls Presby SHS (Odumase A)

I would be most grateful for your approval and support in conducting my Master of Public Health research in your school. Your support letter is a requirement in my application for ethical clearance with the Institutional Review Board (IRB) of Ensign Global College.
I have also got a permission letter from the Ghana Education Service, Lower Manya-Krobo Municipality to conduct the study in the Municipality. Please see attached a copy.
My proposed topic is "Assessing period poverty among adolescent females in the Lower Manya Krobo Municipality in the Eastern region of Ghana". I believe the study outcomes will be beneficial to you and your institution.
Counting on your kind consideration.

Yours Sincerely,



Dr. Rosemary Lartey-Nyaumu
(MPH Candidate)



HEADMISTRESS
KROBO GIRLS PRESBYTERIAN
SENIOR HIGH SCHOOL

Appendix VIII: Research Questionnaire

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. **Age in years:**

2. **Class:**

SHS1	1
SHS2	2
SHS3	3

3. **Programme of study:**

Agricultural Science	1
General Arts	2
Business	3
General Science	4
Home Economics	5
Visual Arts	6
Technical/Vocational	7

4. **Religion**

Christianity	1
Islam	2
African Traditional	3
Others	4

5. **Mother's employment:**

Employed	1
Self-employed	2
Unemployed	3
Retired	4

6. **Father's employment status:**

Employed	1
Self-employed	2
Unemployed	3
Retired	4

7. **How will you describe your family wealth status?**

Very poor	1
Poor	2
Average	3
Rich	4
Very rich	5

8. Have your parents ever spoken to you about menstrual hygiene?

No	0
Yes	1

9. How often do you talk about menstrual hygiene with your parents?

Never	0
Sometimes	1
Often	2
Always	3

SECTION B: THE MENSTRUAL PRACTICE NEEDS SCALE (MPNS-36)

During my last menstrual period....		Never	Sometimes	Often	Always
1	My menstrual materials were comfortable	0	1	2	3
2	I had enough of my menstrual materials to change them as often as I wanted to	0	1	2	3
3	I was satisfied with the cleanliness of my menstrual materials	0	1	2	3
4	I could get more of my menstrual materials when I needed to	0	1	2	3
5	I worried that my menstrual materials would allow blood to pass through to my outer garments	0	1	2	3
6	I worried that my menstrual materials would move from place while I was wearing them	0	1	2	3
7	I worried about how I would get more of my menstrual material if I ran out	0	1	2	3
8	I felt comfortable carrying spare menstrual materials with me outside my home	0	1	2	3
9	I felt comfortable carrying menstrual materials to the place where I changed them	0	1	2	3

10	I felt comfortable storing [keeping] my leftover or cleaned menstrual materials until my next period	0	1	2	3
11	I was able to wash my hands when I wanted to	0	1	2	3
12	I was able to immediately dispose of my used menstrual materials	0	1	2	3
13	I was able to dispose of my used materials in the way that I wanted to	0	1	2	3
14	I worried about where to dispose of my used menstrual materials	0	1	2	3
15	I was concerned that others would see my used menstrual materials in the place I disposed of them	0	1	2	3
At home during my last menstrual period...		Never	Sometimes	Often	Always
16	When at home, I was able to change my menstrual materials when I wanted to	0	1	2	3
17	When at home, I was satisfied with the place I used to change my menstrual materials	0	1	2	3
18	When at home, I had a clean place to change my menstrual materials	0	1	2	3
19	When at home, I worried that I would not be able to change my menstrual materials when I needed to	0	1	2	3
20	When at home, I worried that someone would see me while I was changing my menstrual materials	0	1	2	3
21	When at home, I worried that someone would harm me while I was changing my menstrual materials	0	1	2	3
22	When at home, I worried that something else would harm me while I was changing	0	1	2	3

	my menstrual materials (e.g., animals, insects, unsafe structure)				
At school [work/away from home] during my last menstrual period...		Never	Sometimes	Often	Always
23	When at school, I was able to change my menstrual materials when I wanted to	0	1	2	3
24	When at school, I was satisfied with the place I used to change my menstrual materials	0	1	2	3
25	When at school, I had a clean place to change my menstrual materials	0	1	2	3
26	When at school, I worried that I would not be able to change my menstrual materials when I needed to	0	1	2	3
27	When at school, I worried that someone would see me while I was changing my menstrual materials	0	1	2	3
28	When at school, I worried that someone would harm me while I was changing my menstrual materials	0	1	2	3
If you washed and reused any materials during your last period, please answer these items.					
During my last menstrual period...		Never	Sometimes	Often	Always
29	I had enough water to soak or wash my menstrual material	0	1	2	3
30	I had access to a basin to soak or wash my menstrual materials whenever I needed it	0	1	2	3
31	I was able to wash my menstrual materials when I wanted to	0	1	2	3
32	I had enough soap to wash my menstrual materials	0	1	2	3
33	I was able to dry my materials when I wanted to	0	1	2	3

34	I worried that someone would see me while I was washing my menstrual materials	0	1	2	3
35	I worried that my menstrual materials would not be dry when I needed them	0	1	2	3
36	I worried that others will see my menstrual materials while they were drying	0	1	2	3