

**KNOWLEDGE AND MANAGEMENT OF DYSMENORRHEA AMONG FEMALE
STUDENTS IN SELECTED SECONDARY SCHOOLS IN BENIN CITY, EDO STATE.**

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**IN PARTIAL FULFILMENT OF THE AWARD OF DEGREE OF BACHELOR OF
NURSING SCIENCE, FACULTY OF NURSING SCIENCE, UNIVERSITY OF BENIN,**

BENIN CITY.

OCTOBER 2025

DECLARATION

This is to declare that this research project titled “**KNOWLEDGE AND MANAGEMENT OF DYSMENORRHEA AMONG FEMALE STUDENTS IN SELECTED SECONDARY SCHOOLS IN BENIN CITY, EDO STATE**” was carried out by **AJADI OLUWATOYIN SERAH**. It is solely the result of my work except where acknowledged as being derived from other person(s) or resources.

FACULTY/COLLEGE: FACULTY OF NURSING SCIENCE

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Date: _____

CERTIFICATION/APPROVAL

This is to certify that this project was carried out by **AJADI OLUWATOYIN SERAH** with matriculation number **BMS2000996**, FACULTY OF NURSING SCIENCE, under the supervision of **MRS R. LAWAL**.

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Project Supervisor

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Head of Department (Medical Surgical Nursing).

DATE

External Examiner

Abstract

One of the most prevalent gynaecological issues affecting teenage females, especially those enrolled in secondary schools, is dysmenorrhea, or painful menstruation. In this study, female students in a subset of secondary schools in Edo State, Nigeria's Ovia North-East Local Government Area were asked about their knowledge of and approaches to managing dysmenorrhea. A total of 254 female students from SS1 to SS3 were chosen using a stratified random sampling procedure as part of a cross-sectional descriptive research design. A systematic self-administered questionnaire was used to gather the data, and the Chi-square test and descriptive statistics were used to analyse the results at a significance level of 0.05. The results showed that just 27.9% of respondents had ever heard of dysmenorrhea, showing a lack of knowledge about the disorder, while 78.7% of respondents reported experiencing menstrual pain. Many students reported absence and decreased academic concentration during their periods, and moderate to severe discomfort was highly prevalent. The majority of pain management was self-directed, with 32.3% relaxing or sleeping to relieve pain, 29.1% using heat therapy, and 34.6% regularly using over-the-counter medications. Only 2%, nevertheless, went to school clinics for medical assistance. The management strategies used and awareness of dysmenorrhea were found to be significantly correlated by the Chi-square analysis ($p = 0.03$). Although dysmenorrhea is very common among girls in secondary school, the study found that there is still a lack of awareness and proper treatment. It suggests enhancing access to adolescent-friendly health facilities, addressing sociocultural barriers to obtaining professional treatment, and integrating menstrual health education into school curricula.

Keywords: Dysmenorrhea, Knowledge, Menstrual Health, Pain Management, Female Students, Secondary School.

DEDICATION

This work is dedicated to Almighty God for his grace through the period of this research and to my dear parents.

ACKNOWLEDGEMENT

My profound gratitude goes to God Almighty for His faithfulness, mercy and love towards me throughout my academic journey and for making this research work a success. I am deeply thankful to my project supervisor Mrs. R. Lawal for the unwavering support, invaluable guidance, and commitment in nurturing my research skills throughout this journey. I am truly grateful, may God bless you always ma.

I would also like to extend my appreciation to the dean of the faculty, Prof F.U Okafor, my HOD, , Prof. (Mrs) C.E. Omoregbe, to my course adviser Mrs. N.E. Oyana, and to all my lecturers, Prof.(Mrs) R.E Esewe, Prof. (Mrs) J. A. Afemikhe, Dr (Mrs) C.A. Enuke, Dr. Timothy, Mrs M.A Iniomor, Rev. Sr. Chukwura, Mrs Osadolor, Mrs Eguakun Mrs. Edosagie, Mr Aragua, Mrs Esebame as well as all other lecturers and non- academic staffs for their immense contribution, dedication and support to the successful completion of academic pursuit.

I sincerely appreciate my parents Mr.& Mrs. Isaiah Ajadi. My elder sibling and her husband Mr & Mrs Nathaniel and my immediate sibling Ajadi Rebecca, I love and celebrate you all, may God greatly reward you. I would also like to appreciate my Baptist Student Fellowship family, with all her Pastorates and Pst Festus, Pst Julius and Pst Efosa, Thank you so much for impact. Finally, I would like to appreciate my very good friends and coursemates who have been of invaluable help during this study, Ehioghae Precious, Awotiku Olufisayo, Nmosi Isioma, Akintomide Motunrayo, Miracle, Ajadike Angela, Egharevba Precious, Rachawan just to mention a few. I love you all.

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CHAPTER ONE

INTRODUCTION

Background of study.

One of the most common gynecological disorders affecting teenage girls globally, especially those enrolled in secondary schools, is dysmenorrhea, also referred to as menstrual pain (Esan et al., 2024). Dysmenorrhea, which is characterized by lower abdominal cramping during menstruation, is widely recognized as a serious public health concern because of its impact on students' psychological health, social involvement, and academic achievement (Al Husban et al., 2022). High prevalence rates are regularly seen in research conducted in a variety of geographic locations. For example, according to a study conducted in Pokhara, Nepal, 74.4% of secondary school girls suffered from dysmenorrhea, which had a significant effect on their ability to participate in class and go about their everyday lives (Poudel & Koirala, 2023). The burden of menstruation discomfort even in school settings was highlighted by a study conducted in Enugu, Nigeria, which revealed a prevalence rate of 75% among teenage girls (Ikpeama et al., 2022).

In addition to causing absenteeism from school, dysmenorrhea seriously hinders pupils' focus and academic performance. Students with severe dysmenorrhea frequently have lower academic engagement and are more likely to miss school during their periods, according to findings from Ethiopia and India (Mammo et al., 2022); (Preeti & Jagga, 2024). Menstrual discomfort is a complex issue that calls for deliberate attention because of the psychological and emotional toll it takes, which exacerbates scholastic difficulties. Female students with dysmenorrhea typically use a variety of management techniques, including both non-pharmacological and pharmaceutical approaches. Studies reveal that self-medication is

common, with many teenagers turning to over-the-counter painkillers like ibuprofen and paracetamol to relieve their discomfort. According to a Nigerian study, 61.2% of participants took paracetamol, and others turned to warm compresses and herbal medicines (Knowledge and Self-Management of Dysmenorrhea, 2021). Similarly, students in Myanmar used herbal teas, heating pads, and pharmaceuticals to alleviate their symptoms (Thein & Soputri, 2022). Rest, heat therapy, and traditional medicine are examples of non-pharmacological techniques whose use is frequently impacted by cultural customs, practicality, and perceived effectiveness. Many teenagers nevertheless suffer in spite of these coping strategies because they are reluctant to seek professional assistance and have no understanding of how to manage their problems effectively. According to a survey conducted among female students in Lagos, the majority of them knew very little about the causes of dysmenorrhea and evidence-based therapies, even though 92.6% of them acknowledged how it affected their everyday activities (Abazie et al., 2021). The necessity of thorough menstrual health education as a component of school-based interventions is highlighted by this knowledge gap. Additionally, it has been repeatedly shown that lifestyle factors including skipping breakfast, family history, and irregular menstrual cycles are predictors of the severity of dysmenorrhea. According to these correlations, preventative and management initiatives ought to address underlying lifestyle and genetic risk factors in addition to pain management (Mammo et al., 2022); (Pramanik et al., 2023).

Given these results, the purpose of this study is to examine the prevalence of dysmenorrhea and management techniques among female students in a secondary school context. The aim is to inform focused treatments that can improve students' academic performance and general well-being.

1.2. Statement of Problem.

A common gynecological condition that disproportionately impacts teenage girls, particularly those in secondary school, when their scholastic and emotional development is at its pinnacle, is dysmenorrhea, which is characterized by unpleasant monthly cramps that originate from the uterus and while it is a widespread occurrence, health and education policies continue to ignore it, which has serious negative effects on young girls' academic performance, mental health, and physical health. According to studies, between 70% and 90% of girls in secondary school suffer from dysmenorrhea, and many of them experience moderate to severe pain that interferes with their everyday routines and educational environment (Poudel & Koirala, 2023); (Preeti & Jagga, 2024). This disorder is frequently written off as a normal part of menstruation that needs no treatment, despite the fact that it has been repeatedly connected to decreased academic performance, poor attention, and school absences and though there are many ways to manage dysmenorrhea, including non-pharmacological remedies like heating pads, herbal teas, and rest, as well as pharmaceutical treatments like non-steroidal anti-inflammatory drugs (NSAIDs), the majority of teenagers use self-medication or culturally-influenced methods without the proper medical supervision. It is concerning that many of these students lack sufficient understanding of the causes, consequences, and evidence-based treatment of dysmenorrhea, which results in insufficient pain management, chronic absenteeism, and weakened mental health. Additionally, a culture of silence has been maintained by peers, instructors, and family members normalizing menstruation pain, which makes it less likely that adolescent girls would seek assistance or have access to sufficient support networks. Despite increased awareness, little context-specific research has been done to examine the relationship between the prevalence of dysmenorrhea, its effects on education, and the efficacy of current management techniques among secondary

school pupils. The creation of focused interventions and well-informed health policies is hampered by this disparity. Designing effective school-based health programs and educational campaigns requires an understanding of the prevalence of dysmenorrhea and the coping strategies used by young girls. In the absence of such proof, a sizable fraction of teenage females might keep suffering in silence, which could have long-term effects on their scholastic paths and general well-being. In order to provide empirical data that will guide policy, health education, and adolescent-centered healthcare treatments, this study aims to address the pressing need to examine the prevalence and management of dysmenorrhea among female students in a secondary school.

1.3. Objectives of study.

General Objective;

To assess the knowledge and management strategies of dysmenorrhea among female students in selected secondary schools.

Specific Objectives;

1. To assess the knowledge of dysmenorrhea among female students in selected Secondary Schools.
2. To determine the prevalence and severity of dysmenorrhea among female students in Selected Secondary Schools..
3. To assess the management strategies commonly used by female students in selected Secondary Schools to relieve dysmenorrhea.

1.4. Research questions.

1. What is the knowledge of dysmenorrhea among female students in selected Secondary Schools?

2. What is the prevalence and severity of dysmenorrhea among female students in selected Secondary Schools?

3. What are the management strategies commonly used by female students to relieve dysmenorrhea among female students in selected Secondary Schools?

1.5. Hypothesis.

There is no significant relationship between the knowledge of dysmenorrhea and management strategies among female students in selected Secondary School.

1.6. Significance of study.

To Healthcare Providers (Doctors, Nurses, and Allied Health Professionals): The findings from this study provide healthcare professionals with evidence-based data on the prevalence, severity, and management strategies of dysmenorrhea among female secondary school students. By highlighting how widespread and disruptive menstrual pain is to young girls' academic and emotional well-being, it underscores the urgent need for routine screening, early intervention, and menstrual health education within adolescent health services. It also emphasizes the importance of adopting a holistic, multidisciplinary approach, one that includes not just pharmacological treatments like NSAIDs, but also dietary counseling, mental health support, and culturally sensitive education. It urges doctors, nurses, and allied professionals to move beyond symptom control and consider the psychological, academic, and lifestyle impacts of dysmenorrhea when creating care plans. Furthermore, the findings can aid in developing school-based intervention programs, treatment guidelines, and policies aimed at improving menstrual health services in adolescent populations.

To the Girl Child: For the girl child, particularly those in secondary schools, this study is a significant step in validating their experiences with dysmenorrhea as a real medical condition,

not just a “normal part of being a woman.” By revealing the physical, academic, and emotional toll of menstrual pain, the study empowers girls to seek help, understand their bodies, and explore safe and effective self-management strategies. It bridges the gap in menstrual health literacy by highlighting the lack of knowledge many girls have about evidence-based management and the dangers of unsupervised self-medication. Through this research, young girls can gain better access to information and support systems that foster healthier lifestyle choices, such as balanced nutrition, rest, heat therapy, and when needed, medical care. Ultimately, the study promotes body autonomy and self-care, helping girls take control of their reproductive health without shame or misinformation.

To the Society: At the societal level, this study challenges the longstanding stigma and silence around menstruation. By documenting the widespread impact of dysmenorrhea on education, productivity, and mental health, it calls attention to menstrual pain as a public health issue that deserves investment and policy response and not dismissal. Societal myths that normalize debilitating pain are addressed, fostering a cultural shift toward empathy, awareness, and proactive support. The study's findings support advocacy for inclusive policies, such as menstrual health education in schools, access to affordable menstrual products and treatments, and workplace or school accommodations for affected individuals. It also raises awareness about healthcare disparities, particularly for low-income girls who lack access to professional care or menstrual relief resources. By addressing these issues, society can move toward greater gender equity in education, health, and the workplace, ensuring that menstruation is no longer a barrier to opportunity or dignity.

1.7. Scope of study.

This study is aimed at identifying the knowledge, prevalence, severity and management strategies of dysmenorrhea among female students of Ekosodin Secondary School and Army Day Secondary school, Isiohor. They are located in Ovia North-East Local Government Area of Edo State, Nigeria. It focuses exclusively on female students in the senior secondary classes (SS1 to SS3). The study specifically examines the level of awareness and understanding the students have about dysmenorrhea, the frequency and intensity of menstrual pain experienced, the effects of this condition on their academic performance, particularly in terms of class attendance, concentration, participation and the various management approaches adopted to relieve the symptoms. The data was collected within a specific academic session, allowing for a snapshot view of the students' experiences during that period, without capturing long-term trends. It does not include medical diagnosis or clinical evaluation of participants, relying solely on self-reported data to assess the impact of dysmenorrhea and the effectiveness of coping mechanisms.

1.8. Operational definition of terms.

Dysmenorrhea – According to this study, female students who have terrible menstrual cramps that originate in the uterus during or just before their periods are said to have dysmenorrhea.

Knowledge of Dysmenorrhea – This refers to the level of awareness, understanding, and accurate information students possess regarding the causes, symptoms, and management of dysmenorrhea, as assessed through structured questionnaire items.

Prevalence - The percentage of female students who report having dysmenorrhea throughout the data collecting period. A percentage of the entire sample population is used to express it.

Management- In this sense, management refers to all of the strategies, procedures, and treatments used by female students to lessen or manage their dysmenorrhea symptoms.

Secondary School: A formal educational institution offering education typically from junior secondary (lower secondary) to senior secondary (upper secondary) levels. In this study, it refers to government run school where the target population is enrolled.

Female Students – Individuals who identify as female and are currently enrolled in a secondary school. In this study, female students in Ekosodin secondary school of reproductive age are the target population.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviewed related literature on The Knowledge, Perception and Management of Dysmenorrhea among female students in selected secondary schools under the following sub-headings: Introduction, conceptual review, theoretical framework, and empirical review.

2.0 Introduction

Among women of reproductive age, dysmenorrhea, also known as menstruation pain, is a frequent malady that has a substantial impact on everyday activities, including academic performance. Although a number of factors determine how severe dysmenorrhea is, current research has looked at dietary habits, especially a high sugar intake, as a possible risk factor. The literature on dysmenorrhea, its kinds, prevalence, and the potential link between high sugar intake and menstrual pain in female students will be discussed in this review.

2.1 Conceptual Review

2.1.1 Definition of Dysmenorrhea.

Dysmenorrhea has been defined as cramping discomfort a female experience in the course of her menstrual cycle and usually characterized by pains and uneasiness in the pelvic region particularly in the lower abdomen (Esan et al. 2024). Painful menstrual cramps that start in the lower abdomen are the hallmark of dysmenorrhea, which is also frequently accompanied by headaches, exhaustion, lower back pain, and nausea. According to its underlying causes, it is divided into primary and secondary dysmenorrhea (Jo et al., 2020). Dysmenorrhea in itself is not an illness but rather a medical condition marked by unpleasant menstrual cramps.

2.1.2 Classification of dysmenorrhea, characteristics and differences.

Primary dysmenorrhea is characterized by increased prostaglandin production, which causes uterine contractions and ischemia, with no discernible pelvic disease (Osuala et al., 2022). Menstrual pain without underlying pathology or recognizable organic disease is referred to as primary dysmenorrhea. It is the most prevalent kind of dysmenorrhea; usually starting 6–12 months after the ovulatory cycles stabilize and menarche (first menstruation) occur (Itani et al. 2022). The key characteristics of primary dysmenorrhea include:

1. Usually starting right before or at the start of menstrual flow, this pain, Cramping pain focused in the lower abdomen, which may spread to the lower back and thighs.
2. Pain that normally peaks within the first 24-48 hours of menstruation.
3. Associated symptoms can include headache, dizziness, exhaustion, nausea, vomiting, and diarrhea.

The following factors are principally responsible for the pathophysiology of primary dysmenorrhea:

1. Overproduction of prostaglandins during menstruation, especially $\text{PGF2}\alpha$, in the endometrium (Barcikowska et al. 2020).
2. These prostaglandins result in ischemia, the contraction of arteries and strong uterine contractions (Roberta et al. 2023)
3. Pain and cramps are caused by the uterus receiving less blood as a result.

Hadjou et al. (2022) gave some risk factors for primary dysmenorrhea which includes;

1. Menarche at a young age
2. Menstrual discharge that are heavier or longer
3. History of dysmenorrhea in the family

4. Stress
5. Smoking
6. Nulliparity (never having conceived)
7. Studies indicate that dietary factors such a high sugar intake contributes as a risk factor.

Secondary dysmenorrhea: Core gynecological disorders such endometriosis, pelvic inflammatory disease (PID), uterine fibroids, or adenomyosis are the source of this kind of menstruation pain. Secondary dysmenorrhea, in contrast to primary dysmenorrhea, frequently starts later in life and gets worse over time. Endometriosis, one of the most common reasons, arises when endometrial-like tissue develops outside the uterus, leading to swelling and extreme menstrual discomfort (Jo et al., 2020). Furthermore, research suggests that in addition to monthly discomfort, women with secondary dysmenorrhea may also feel persistent pelvic pain, pain during sexual activity, and irregular menstrual bleeding (Al-Husban et al., 2022). Studies also indicate that lifestyle factors including stress and food, as well as hormone imbalances, may make secondary dysmenorrhea symptoms worse (Osuala et al., 2022). Likewise, women who consumed a lot of sugar and processed foods experienced more severe secondary dysmenorrhea symptoms, possibly as a result of increased insulin resistance and systemic inflammation, according to a study on lifestyle factors impacting dysmenorrhea (van Uden et al., 2023). The significance of dietary changes as a possible non-pharmacological treatment for secondary dysmenorrhea is highlighted by these findings (Ologele et al., 2021).

Differences between Primary and Secondary Dysmenorrhea.

Primary dysmenorrhea: This kind is associated with increased prostaglandin production, which causes uterine muscle contractions and ischemia, but it is not accompanied with any discernible

pelvic pathology. Usually starting within two years of menarche, it primarily affects young women and teenagers. Usually periodic, the symptoms only appear during menstruation. NSAIDs, hormonal treatment, and dietary and lifestyle changes like exercise are common management techniques (Ferries-Rowe et al., 2020).

Secondary dysmenorrhea: In contrast to primary dysmenorrhea, secondary dysmenorrhea is brought on by underlying female reproductive health conditions such as adenomyosis, endometriosis, pelvic inflammatory disease (PID), or uterine fibroids. The discomfort is frequently more intense, can happen outside of menstruation, and can be linked to other symptoms like infertility, difficult sex, and heavy monthly flow. Medical imaging, such as transvaginal ultrasound, is frequently necessary for diagnosis, and treatment focuses on correcting the underlying ailment (Krzemińska et al., 2024). According to studies, one of the primary root causes of secondary dysmenorrhea is the condition known as endometriosis which is often misdiagnosed or discovered too late, resulting in chronic pelvic pain and a lower quality of life (Clemenza et al., 2021). Surgical procedures such as laparoscopies may be necessary to treat secondary dysmenorrhea, especially when endometriosis or fibroids are present. NSAIDs and hormone therapy are examples of first-line pharmaceutical treatments; however, more severe instances may require more invasive medical or surgical measures (Arthur & Collins, 2020).

2.1.3. Excessive sugar intake

Feeding on free sugars in excess of the dietary recommendations set by health authorities is referred to as excessive sugar intake (Prada et al. 2022). Naturally occurring sugars include natural sugars found in honey, syrups, fruit juices, and fruit juice concentrates, as well as monosaccharides and disaccharides that are added to food and drink by producers, chefs, or customers. Taking in too much sugar has been strongly associated with hormonal imbalances,

chronic inflammation, and metabolic dysregulation, all of which can exacerbate dysmenorrhea and cause irregular menstruation. Knowing these physiological processes helps explain how food choices—especially a high sugar intake—may aggravate female students' menstrual pain.

- **Inflammation and Dysmenorrhea Severity.**

One of the main effects of eating a lot of sugar is chronic low-grade inflammation, which has a big influence on menstrual health. According to research, eating too much sugar causes the body to produce more pro-inflammatory cytokines including tumor necrosis factor-alpha (TNF- α) and interleukin-6 (IL-6), which worsen menstruation cramps and uterine contractions (Ma et al., 2022). A high level of sugar intake also throws off the balance of the gut flora, which increases intestinal permeability and causes inflammation throughout the body. Satokari (2020) states that increased pain perception during menstruation may be a result of this inflammatory state. As a result of chronic inflammation, female students who consume large quantities of processed foods and sugary drinks may have more severe cases of dysmenorrhea.

- **Hormonal Imbalance and Menstrual Irregularities**

Hormonal balance, especially insulin and estrogen levels, has been proven to be dramatically impacted by overeating of sugar. Using a lot of sugar causes insulin resistance, which in turn causes an excess of insulin to be produced. This alters ovarian function and increases estrogen dominance, both of which are known to exacerbate menstruation discomfort (Stockelman et al., 2021). It also raises cortisol levels, which in turn causes stress reactions that can further interfere with reproductive hormones (Alhamawi et al., 2024). Hormonal imbalances brought on by stress can cause menstrual cycles to prolong or reduce which increases the frequency and severity of dysmenorrhea in students.

- **Sugar-Sweetened Beverages, Obesity, and Dysmenorrhea**

Sugar-sweetened beverage (SSB) use has been closely associated with metabolic problems and obesity, both of which are risk factors for severe menstrual cramps. Those who eat a lot of added sugars have greater levels of insulin resistance, oxidative stress, and inflammatory markers—all of which make dysmenorrhea more pronounced (Lin et al., 2022). Obesity also increases the synthesis of estrogen from adipose tissue, which aggravates menstruation pain and uterine contractions. According to a study on female students' eating habits, dysmenorrhea was much more common in those who consumed large amounts of sugar-sweetened beverages (SSBs) than in those who consumed less sugar (Hou et al., 2025).

2.1.4 Stress as a Major Contributor to Dysmenorrhea

The hypothalamic-pituitary-gonadal axis is activated by stress, which causes uterine contractions and an increase in prostaglandin synthesis (Ologele et al., 2021). 53.2% of students strongly agreed that stress made their menstrual discomfort worse, according to the study, which indicated a substantial correlation between stress and dysmenorrhea ($\chi^2 = 83.45$, $p = 0.000$) (Ologele et al., 2021) also relating to academic pressures, the main causes were the adjustment to university life, a severe workload, and exam anxiety. Stress levels were exacerbated by students' stated inability to adjust to new academic demands (Ologele et al., 2021) because Stress was exacerbated by adjusting to campus life, financial limitations, and social isolation (Ologele et al., 2021). 64.1% of respondents said they experienced stress during their periods, which is frequently related to either dysmenorrhea or academic pressures such tests and assignments (Ogunyemi et al., 2022). 39.2% of people suffer from insomnia, which makes stress even worse and enhances pain perception (Ogunyemi et al., 2022).

- **Biological Mechanisms Linking Stress and Dysmenorrhea**

Hypothalamic-Pituitary-Gonadal (HPG) Axis Activation: The HPG axis is stimulated by stress, which throws off the hormonal balance and increases the production of prostaglandins, making uterine contractions and pain worse (Ologele et al., 2021).

Endocrine Disruption: Prolonged stress raises cortisol levels, which can disrupt the control of progesterone and estrogen and exacerbate menstruation symptoms (Ologele et al., 2021).

Muscle Tension: Menstrual cramps and pain are made worse by stress-induced tension in the pelvic muscles (Ologele et al., 2021).

- **Oxidative Stress and Pain Sensitivity.**

By encouraging the generation of reactive oxygen species (ROS), which harm cellular structures and enhance pain sensitivity, excessive sugar consumption raises oxidative stress. According to research, oxidative stress may contribute to the exacerbation of menstruation pain by causing nerve hypersensitivity and uterine contractility to increase (Ebadi & Azlan, 2023) because Diets heavy in sugar hinder the absorption of magnesium and omega-3 fatty acids, which assist relax muscles and lessen cramping (Ologele et al., 2021). It has been demonstrated that a high-glycemic diet high in refined sugars exacerbates inflammation-related discomfort in a number of illnesses, including dysmenorrhea, also, A feedback loop is created between stress and bad diet: stress leads to emotional eating (such as sugary snacks), which exacerbates discomfort and causes more stress (Ologele et al., 2021). Consequently, dietary measures that lower sugar intake could be a useful tactic to ease periods of menstruation discomfort. Students who were under stress reported being more sensitive to pain; 52.9% of them said that stress during their periods made their migraines and nausea worse (Ologele et al., 2021).

2.2 THEORETICAL REVIEW

2.2.1 DOROTHEA OREM'S SELF-CARE DEFICIT NURSING THEORY

Brief Overview of Orem's Theory

Dorothea Orem's Self-Care Deficit Nursing Theory (SCDNT), one of the most well-known and often used nursing theories, serves as the foundation for this investigation. Orem's philosophy, which was developed in the 1950s and improved upon throughout the following decades, emphasizes the capacity of the individual to take care of oneself as well as the role of nursing in helping people when they are unable to do so. Orem (2001) asserts that when a person has a health-related limitation in their capacity to take care of themselves, resulting in a self-care deficit, and nursing is necessary. The theory's foundation is the idea that people should be independent and in charge of their own care, and that nurses play a vital role in helping people meet their care needs, especially when they are vulnerable. A fundamental framework for comprehending nursing's role in resolving health issues when people are unable to care for themselves is provided by Dorothea Orem's Self-Care Deficit Nursing Theory. This philosophy emphasizes people's capacity to take care of their own health requirements and is based on the idea of self-care. A self-care deficit occurs when self-care is inadequate, necessitating nursing interventions to assist or regain the person's ability to manage their health.

Core Concepts

Three interrelated elements are identified by the theory: nursing systems, self-care, and self-care deficit. It emphasizes how crucial it is to empower people by providing them with educational and supportive resources while attending to their urgent medical needs. This approach fits in well

with the topic of dysmenorrhea because treating this issue frequently entails teaching people self-care techniques while addressing mental and physical difficulties.

1. **Self-care:** The intentional steps people take to preserve their health and wellbeing are referred to as self-care. In order to ease symptoms of dysmenorrhea, female students may need to take analgesics, apply heat to their belly, change their diet, rest, or exercise.
2. **Self-care agency:** is the person's capacity or ability to take care of himself. Physical capacity, psychological fortitude, access to health resources, and awareness of the illness can all have an impact on this. Peer pressure, cultural views, academic stress, and a lack of health education can all have an impact on students' health.
3. **Therapeutic self-care:** The entirety of self-care activities necessary to address an individual's health-related demands is known as the therapeutic self-care demand. This would cover the entire range of pain management techniques, symptom monitoring, and lifestyle modifications required for a person with dysmenorrhea during the menstrual cycle.
4. **Self-care deficit:** A self-care deficit arises when a person's knowledge, physical ability, or psychological preparedness prevent them from meeting their therapeutic self-care demands. Students are deemed to have a self-care deficit if they suffer from excruciating menstruation pain but lack the resources or knowledge necessary to properly manage it.
5. **Nursing systems:** Depending on the degree of assistance needed and the severity of the patient's self-care deficiency, nursing systems are divided into three categories: fully compensatory, partially compensatory, and supportive-educative. Since nurses want to empower students to control their symptoms by education and support rather than direct care, the supportive-educative method is especially pertinent in the case of dysmenorrhea.

Orem's Self-Care Theory Conceptual Framework



Figure 2.1 Orem's conceptual framework

2.2.2 Application of the core concepts to Dysmenorrhea

Self-Care Needs in Dysmenorrhea

For many female students, dysmenorrhea, which is marked by excruciating period cramps, poses a serious health risk. Self-care strategies such as the use of painkillers, heat therapy, exercise, dietary changes, and relaxation techniques are frequently necessary for effective management. However, because of things like severe symptoms, a lack of money, or a lack of awareness, people's capacity to engage in these behaviors can differ greatly. With an emphasis on how female students can take control of their health, this section of the theoretical study examines the significance of self-care in controlling dysmenorrhea. It looks at obstacles to self-care and

emphasizes the necessity of treatments that enable people to embrace and maintain efficient management techniques.

Identifying Self-Care Deficits

Deficits in self-care occur when people are unable to take care of their own health requirements for a variety of reasons, such as lack of money, emotional turmoil, or physical discomfort. These deficiencies may be made worse by dysmenorrhea, especially if the pain is severe or persistent. Self-care might be made more difficult for female students by the obligations of school and their restricted access to medical facilities. This section explores how common self-care deficiencies are among female dysmenorrheic students. It looks at contributory elements like a lack of health information, cultural views on menstruation, and economical limitations. Nursing interventions can be tailored to meet the unique requirements of this population by identifying these weaknesses.

Role of Nursing Systems

According to Orem's approach, nursing systems can be divided into three categories: supportive-educative, partially compensating, and fully compensatory. There are specific uses for each system in the treatment of dysmenorrhea:

- **Wholly Compensatory Systems:** When people are unable to manage their own conditions, such as in cases of incapacitating pain, nurses assume entire responsibility for doing so.
- **Partly Compensatory Systems:** Individuals and nurses share management of the condition; the individual actively practices self-care while the nurses offer support and direction.

- Supportive-Educative Systems: In order to foster autonomy and long-term wellness, nurses concentrate on educating and enabling people to effectively manage their own treatment.

The use of these nursing systems to the treatment of female students' dysmenorrhea is covered in this section. It highlights the significance of adjusting interventions to each person's degree of capacity for self-care and offering all-encompassing assistance to address the condition's mental and physical components.

Impact of Nursing Interventions on Dysmenorrhea Management

Nursing interventions are essential for addressing deficiencies in self-care and enabling people to successfully manage their health. Interventions for female students experiencing dysmenorrhea may involve:

- Supplying information on the illness, its causes, and treatment options.
- Providing pain-relieving resources, such as pharmaceuticals or non-pharmacological alternatives like heat therapy.
- Using support groups or counseling to address emotional and psychological issues.
- Encouraging dietary and lifestyle modifications, such as consistent exercise.

The many facets of nursing's role in managing dysmenorrhea are highlighted in this section, along with the significance of providing patients with holistic care that takes into account their mental and physical health.

Connecting Knowledge to Self-Care Deficits

Female students' comprehension of dysmenorrhea is a significant predictor of whether self-care deficits will occur or continue. According to Orem's view, self-care necessitates not only physical competence but also a thorough grasp of health issues and their treatment. Students who

have little or inaccurate understanding about the causes, symptoms, and evidence-based management of dysmenorrhea are more likely to participate in inefficient or hazardous activities, such as unsupervised self-medication, reliance on myths, or avoidance of treatment. As a result of this information gap, students are unable to achieve their therapeutic self-care goals, despite having the motivation to alleviate their discomfort. Students with more awareness about dysmenorrhea, on the other hand, are more equipped to undertake proper self-care, such as employing validated non-pharmacological treatments (heat therapy, exercise, dietary adjustments) or seeking timely medical attention. Knowledge also improves their ability to make informed self-medication decisions and identify when professional help is needed. Thus, knowledge serves as both a safeguard against self-care deficiencies and a foundation for the supportive-educative nursing system highlighted in Orem's model.

2.2.3 Significance and Application to the Study

Significance of Dorothea Orem's Self-Care Deficit Nursing Theory

For studies that look into medical disorders that call for both professional and individual care, Dorothea Orem's Self-Care Deficit Nursing Theory is extremely important. This theory offers a strong framework for investigating the relationship between nursing care systems and individual health behaviors in a study on the prevalence and treatment of dysmenorrhea among female students.

1. **Framework for Understanding Self-Care Challenges:** According to Orem's idea, self-care is crucial for preserving one's health and wellbeing. As a prevalent and frequently incapacitating ailment, dysmenorrhea might interfere with students' capacity to take care of themselves. The notion is pertinent to comprehending the difficulties female students

encounter in controlling dysmenorrhea because it emphasizes how nursing care can fill up gaps in people's capacity for self-care.

2. **Focus on Empowerment:** Giving people the tools they need to take charge of their own health care is a fundamental component of Orem's theory. This is in line with the objective of giving female students the information and tools they need to properly treat dysmenorrhea. The theory's focus on supportive-educative nursing systems emphasizes how crucial instruction and direction are in empowering students to manage their own care.
3. **Promoting Holistic Care:** Orem's approach is perfect for addressing the complex effects of dysmenorrhea since it takes into account the social, psychological, and physical aspects of health. By using this theory, your research can highlight the need of holistic nursing interventions that address quality of life and emotional well-being in addition to physical pain management.
4. **Guidance for Nursing Practice:** this research can provide important insights into nursing practice by utilizing Orem's theory, especially in community and educational settings. It offers a methodical way to create interventions that cater to the needs of female students and enhance their capacity to successfully manage dysmenorrhea.

Application to the Study

Orem's hypothesis can be used in many areas of this study, from identifying deficiencies in self-care to creating efficient nursing interventions.

1. **Examining Self-Care Practices:** it looks on the self-care methods that female students frequently use to treat dysmenorrhea, like taking medicine, applying heat therapy, or

practicing relaxation techniques. Orem's approach offers a prism through which to assess how self-care deficiencies develop and whether these activities are adequate.

2. **Identifying Factors Influencing Self-Care Deficits:** The theory enables one to investigate the elements that lead to deficiencies in self-care, such as ignorance, financial limitations, cultural beliefs, or severe symptoms. This application is especially pertinent to comprehending the relationship between prevalence rates and the capacity or incapacity to practice self-care.
3. **Developing Nursing Interventions:** The development of interventions suited to the requirements of female students can be guided by Orem's classification of nursing systems into three categories: fully compensating, partially compensatory, and supportive-educative.
 - **Supportive-Educative Systems** can concentrate on educational initiatives that teach practical self-care techniques and increase awareness of dysmenorrhea.
 - **Partly Compensatory Systems** In order to alleviate moderate deficiencies in self-care, partially compensatory systems may entail joint care between students and nurses.
 - **Wholly Compensatory Systems** In extreme situations where students need full nursing support because of incapacitating symptoms, fully compensatory systems can help.
4. **Linking Prevalence to Nursing Care:** this study can relate the prevalence of dysmenorrhea among female students to their nursing care needs and self-care deficiencies by applying Orem's hypothesis. This example shows how nurse interventions can help with the mental and physical difficulties that come with dysmenorrhea.

- 5 Guiding Data Collection and Analysis: A framework for organizing your research topics, survey questions, and data analysis can be found in Orem's theory. This research may, for instance, determine the prevalence of dysmenorrhea, analyze self-care routines, and pinpoint information and resource gaps. Concepts from the theory can be used to interpret the results and suggest solutions.
- 6 Implications for Policy and Practice: the study can produce evidence-based suggestions for nursing practice and instruction in postsecondary institutions by utilizing Orem's theory. It can draw attention to the necessity of focused initiatives to treat dysmenorrhea and advance the general health and wellbeing of female students.

2.3 EMPIRICAL REVIEW

2.3.1 The knowledge of dysmenorrhea experienced by female students

A study by Silaban, Lumbantoruan, and Simamora (2023) used a descriptive quantitative analytic technique with a cross-sectional design to evaluate the knowledge of dysmenorrhea among 69 female students in class X at SMA Negeri 1 Doloksanggul, Indonesia. Frequency distribution tables were used for univariate analysis and chi-square tests for bivariate analysis with a 90% confidence level after the data were gathered using a structured questionnaire. 26.1% of individuals showed strong knowledge regarding dysmenorrhea, 58.0% had acceptable knowledge, and 15.9% had low knowledge, according to the data. In terms of attitudes, 13.0% of the students had a negative attitude toward managing dysmenorrhea, while 87.0% had a favorable attitude. While 58.0% of respondents did not address their menstrual pain, 42.0% of respondents reported using management techniques to deal with dysmenorrhea. A chi-square value of 6.395, which was higher than the crucial value of 4.605, showed that knowledge and the

management of dysmenorrhea were significantly correlated, according to bivariate analysis. Compared to students with inadequate or poor understanding, individuals with greater knowledge were more likely to control their dysmenorrhea. Similarly, a chi-square value of 4.061, which was higher than the crucial value of 2.705, indicated a substantial correlation between students' attitudes and how they handled dysmenorrhea. Compared to students with a negative attitude, those with a good attitude were more likely to seek treatment for dysmenorrhea. The study found that while most students had adequate knowledge and positive attitudes about dysmenorrhea, many still did not manage it effectively. This underscores the need for focused educational interventions to raise adolescents' awareness and improve their menstrual health practices (Silaban et al., 2023).

Donayeva et al. (2023), in a pertinent study that offers important insights into this topic found significant behavioral patterns that indicate the students' understanding of their illness, even though the main focus was on the academic and physical effects of PD. 180 female adolescents between the ages of 12 and 18 from 43 schools in the Aktobe region participated in this cross-sectional comparison study. In order to remove subjects with known pelvic diseases or those undergoing recent hormone treatment, the researchers made sure they had a normal BMI and regular menstrual cycles. Participants were split into three groups based on the Visual Analog Scale (VAS), which was used to measure the severity of dysmenorrhea: mild (VAS 1–3), moderate (VAS 4–7), and severe (VAS 8–10). Private interviews with the teenagers were conducted, and reported absenteeism was verified using school attendance records. Many teenagers did not believe that dysmenorrhea was a medical condition that needed to be treated by a doctor. According to the survey, a sizable fraction of individuals turned to self-care or home cures rather than seeking medical assistance. This pattern confirms previous research showing

that social and cultural circumstances frequently normalize or belittle menstruation discomfort, which causes teenagers to internalize dysmenorrhea as a typical aspect of womanhood rather than a treatable illness. The researchers stressed that underreporting and inadequate use of viable treatment alternatives, including NSAIDs or structured care regimens, are caused by this misconception.

Ore and Ogundeko's (2021) study highlights important knowledge gaps and offers insightful information about female teenagers' knowledge of dysmenorrhea. Only 17.1% of participants in the study, which involved 367 secondary school students in Ogun State, Nigeria, showed above-average knowledge of dysmenorrhea, while nearly half (47.5%) had below-average knowledge. Given how common dysmenorrhea is in teenagers and how much it affects day-to-day living, this information gap is especially alarming. The study found that the main sources of information about menstruation are moms, cultural views, and social media, indicating that formal teaching regarding dysmenorrhea is still insufficient in educational settings. The results point to a concerning discrepancy between practice and knowledge. Many students had dysmenorrhea, but they were not well-informed about its causes and treatment. For example, even though 53.3% of respondents said they were in excruciating pain, they knew very little about practical ways to manage it. The majority of students (61.2%) self-medicate rather than seek professional medical assistance (only 3.5%), demonstrating this knowledge gap in self-management practices. Pharmacological therapies such as diclofenac (52.5%) and paracetamol (41.7%) were often used, but without adequate supervision, which raised questions regarding possible abuse or overuse of painkillers. Non-pharmacological methods, such as hot water bottles (61.7%) and herbal remedies (38.3%), were also widely used, reflecting culturally ingrained practices that may not always be evidence-based. The study also found that a lack of awareness about dysmenorrhea led

to its detrimental effects, such as social disengagement, limited physical activity, difficulty focusing, and absence from school. Students with more knowledge were not always better at managing their symptoms, according to the correlation study, which revealed a negative relationship between knowledge levels and self-management ($r = -0.217$, $p = 0.029$). This implies that without access to relevant resources and helpful advice, knowledge alone is insufficient. Age also played a significant influence, with older students showing marginally superior self-management ($r = 0.456$, $p = 0.003$), maybe as a result of cumulative experience or unofficial learning over time.

2.3.2 To determine the prevalence and severity of dysmenorrhea among female students

Poudel and Koirala's (2022) important empirical study on secondary school girls in Pokhara Metropolitan, Nepal, looked at the prevalence and severity of dysmenorrhea among female pupils. To measure the frequency and severity of dysmenorrhea, as well as its contributing causes and effects on academic performance, the researchers used a cross-sectional descriptive methodology. Understanding the prevalence of menstruation discomfort in teenage populations in formal educational settings is made possible by this study. 347 female students in grades 11 and 12 from 12 public secondary schools in the Pokhara metropolitan area made up the target population. A multistage cluster sampling technique was used to choose participants, and only girls between the ages of 15 and 20 who had menstruated were included. Data on menstrual features, symptoms of dysmenorrhea, and academic outcomes were gathered using a structured, self-administered questionnaire that was supplemented by the Visual Analog Scale (VAS). The results showed that dysmenorrhea was common in the study group, with 74.4% of the students reporting having it. Of those impacted, 26% had severe dysmenorrhea, 53.5% reported moderate discomfort, and 20.5% reported light pain. The most often reported symptoms were back pain (62%), followed by lower abdomen pain (81.8%). A significant percentage (71.3%) reported monthly pain, and for many, the pain usually started on the first day of menstruation and lasted for two days or more. This empirical study offers solid proof of the significant frequency and practical consequences of dysmenorrhea in girls in secondary school. Early detection and intervention are crucial due to the severity of symptoms and the resulting academic repercussions. To lessen the detrimental effects of dysmenorrhea on young female students, the findings emphasize the necessity of including menstrual health education and support systems into school health programs.

Uzoечи et al. (2023) investigated menstrual health literacy and habits among Nigerian teenage females enrolled in school. Through student reports of symptoms and patterns of menstrual experiences, the study indirectly addressed the prevalence and perceived severity of menstruation-related discomfort, including dysmenorrhea, even though its main focus was on menstrual literacy and cleanliness. Thirteen primary research publications from different parts of Nigeria were considered in the study, which employed a systematic review design. Teenage girls between the ages of 10 and 19 who were enrolled in school made up the study population. The included studies had sample sizes ranging from 136 to more than 1000 participants and used a variety of methodologies, such as mixed methods, cross-sectional surveys, and quasi-experimental investigations. Through a thorough selection and critical assessment procedure, the review ensured methodological rigor in accordance with the PRISMA 2020 recommendations. According to the results of the included research, up to 73.7% of female students experience abdominal discomfort, making dysmenorrhea a very common complaint. According to Tomlinson (2022), dysmenorrhea is not only prevalent but also frequently painful and functionally restricting for adolescent girls. The participants' mean menarche age was 13.1 years, and mood swings and irritability typically accompanied menstrual discomfort. According to a number of studies, many teenagers menarched without any prior awareness, which caused anxiety, bewilderment, and emotional stress. These factors may have increased the impression of menstrual pain. menstruation pain and discomfort may be made worse by the fact that only 4.7% of girls at school showed proper menstruation practices, such as using sanitary pads and having access to hygienic facilities (Tomlinson, 2022). The review also highlighted how urban and rural pupils had different experiences. Teenagers living in rural areas were shown to have less access to menstrual health resources and less understanding about menstruation, which may result in

more severe or mismanaged cases of dysmenorrhea (Edet et al., 2020). This emphasizes how knowledge, access to resources, and symptom experience are intertwined.

DYSMENE Study conducted in Brittany, France, by Defert et al. (2023). The study, which focused on sixth-grade girls (ages 11–12) in 72 randomly chosen public schools, was conducted throughout the 2020–2021 school year. 257 of the 1712 girls who were polled had attained menarche and could answer the questionnaire's question on dysmenorrhea. During required health assessments, school nurses used a 16-item, age-appropriate form to collect data. The form asked about menstrual cycle characteristics, coping mechanisms, the impact on school attendance and physical activity, and the intensity of pain using the Wong–Baker Faces Pain Scale (W-B FPS). With 83% of the post-menarcheal females experiencing monthly discomfort, the results demonstrated the significant prevalence of dysmenorrhea. Interestingly, dysmenorrhea was present in 59% of these girls from the start of their period, suggesting a markedly early onset of symptoms. The most often reported complaint was abdominal pain (70%), which was followed by headaches (25%), exhaustion (48%), and trouble focusing (26%). Compared to girls in rural settings, the prevalence and intensity of symptoms were higher in urban regions, indicating possible environmental or psychosocial factors. Sport exemptions were more common among urban adolescents, who were also substantially more likely to report abdominal pain and difficulties concentrating ($p < 0.05$). Although the severity of dysmenorrhea varied, there was a strong correlation between it and functional deficits. Absenteeism rates were highest among students with significant abdominal discomfort, and those with severe symptoms were three times more likely to miss school ($p < 0.001$). Inconsistencies in the treatment of dysmenorrhea were also found by the study. About 19% of the girls with dysmenorrhea did nothing to alleviate their symptoms, despite the fact that 64% of them took medicine, namely NSAIDs,

phloroglucinol, or paracetamol. 10% of people who did take medication said their pain didn't go away, and a portion of them tried non-pharmacological treatments including applying heat and resting in certain positions, either by themselves or in conjunction with medicine.

In a study conducted by Ali et al. (2022), the prevalence, impact, and management perception of dysmenorrhea among female students in Taif City, Saudi Arabia, were assessed through a cross-sectional design involving 562 female students aged 11 to 18 years. The findings revealed a high prevalence of dysmenorrhea, affecting 79.4% of the participants. Key risk factors identified were family history (87.4%) and length of menstruation (79%). The condition significantly impacted academic performance, with 50.2% of students reporting missing at least one day of school monthly due to menstrual pain. In terms of pain management, ibuprofen (42%) and paracetamol (40%) were the most commonly used medications. Interestingly, only 3% of the students used mefenamic acid, although those who did reported complete pain relief. The study concluded that dysmenorrhea is highly prevalent and notably affects students' quality of life, highlighting a gap between effective treatment options and actual usage patterns..

2.3.3 The management strategies commonly used by female students to relieve dysmenorrhea

In an empirical study conducted by Fernández Martínez et al. (2022), the researchers explored how Spanish school students, specifically female students from Andalusia, manage primary dysmenorrhea. Adopting a qualitative case study design, the study involved 33 participants who took part in focus group discussions via videoconferencing. A purposive sampling technique was employed to select participants, and data were analyzed thematically in line with COREQ and SRQR guidelines. The findings of the study revealed four major themes: (1) Strategies for pain management, (2) Use of painkillers, (3) The decision-making process around ideal treatment, and

(4) The use of non-pharmacological interventions. Participants described various coping mechanisms, including self-medication with non-steroidal anti-inflammatory drugs (NSAIDs), reluctance to seek medical advice, and the use of non-pharmacological approaches such as exercise, acupuncture, and heat application. Interestingly, many of the students reported turning to female family members and peers for advice rather than health professionals, reflecting both a cultural reliance on informal support systems and a possible gap in formal healthcare engagement for managing menstrual pain.

Similarly, Ní Chéileachair et al. (2022) conducted a qualitative interpretive study among third-level students in Ireland to examine their pain management strategies for dysmenorrhea and to explore unmet needs in physical, psychological, educational, and social domains. Using semi-structured online interviews with 21 students, the data were subjected to reflexive thematic analysis. The analysis generated five themes, including: (1) Pain management as a self-directed trial-and-error process, (2) Home as a refuge during menstruation, (3) The prioritization of productivity over personal comfort, (4) A gap between normalization and medicalization of period pain, and (5) A cycle of censorship and concealment around menstruation. The study highlighted that limited formal education on menstrual health and widespread stigma around menstruation created a challenging environment for students to develop adequate coping skills. Participants often resorted to self-management in isolation, navigating menstrual pain without clear guidance or support. The COVID-19 pandemic was noted as a unique context that, paradoxically, offered relief to some students through remote learning and work-from-home arrangements, allowing them to manage their symptoms more comfortably.

In a complementary quantitative study, Almanasef et al. (2023) investigated self-care strategies for managing primary dysmenorrhea among female undergraduate students in the Asir region of

Saudi Arabia. Conducted using a cross-sectional design, data were gathered from 391 participants via a web-based self-administered questionnaire. The study found that 82% of respondents had experienced menstrual pain during their last three menstrual cycles, and 62.1% were current users of analgesics, particularly paracetamol (70.4%) and ibuprofen (45.7%). Additionally, 67% of participants reported using complementary and alternative therapies (CATs) such as herbal remedies, dietary changes, and heat therapy. Motivations for using CATs included the desire to reduce reliance on analgesics (82%), perceptions of greater safety (53.3%), and efficacy (46%), alongside cost and accessibility considerations. Although many believed CATs were safer than conventional medication, just over half felt they were less effective. The authors concluded that collaboration between educational institutions and community pharmacies could be instrumental in enhancing menstrual health literacy and promoting safe, evidence-based self-care practices among young women.

CHAPTER THREE

METHODOLOGY

This chapter describes the methodology that the researcher adopted in conducting this study. The various components of research methodology is discussed under their respective headings, including research design, study setting, target population, sample and sampling technique, instruments of data collection, validity and reliability of instruments, method of data collection, method of data analysis, and ethical considerations.

3.1 Design

A cross sectional study design was used for this study. Cross -sectional studies are observational studies that analyze data from a population at a single point in time. The design was used to ascertain the knowledge and management strategies of dysmenorrhea among female students in selected secondary schools. The design is often used to measure the prevalence of health outcomes, understand determinants of health, and describe features of a population (Wang & Cheng, 2020). The study's design will comprise a description of the occasions, circumstances, and occurrence rates of particular phenomena over the course of the study period.

3.2 Setting

This study was carried out at two selected Public-run Secondary Schools in Ovia North-East local Government Area of Edo State. It is predominantly urban and semi urban comprising of about 45 secondary schools with diverse cultural background and behaviours capable of providing insights for study.

Ekosodin Secondary School founded in the mid-1970s because it has been in existence for at least 45 years located in Ekosodin quarters, Ovia North-East Local Government Area of Edo State, Nigeria. It is one of the several secondary schools in the area that provide education to the

children of the community. It has undergone significant interventions which includes reconstructions of a block of 6 classrooms and principals office and the provision of 120 twin chairs and desks which makes learning more comfortable.

Army Day Secondary School, Isiohor was established in 1984-1987. It is a military-run day school that includes both junior and senior secondary sections. It follows a disciplined regime, combining academic curriculum with with military style organization.

These schools offer teachings of various subjects and crafts all designed to meet the learning needs of the students.

3.3 Target Population

The target population for the study are female students at Ekosodin and Army Day secondary school from SS1 to SS3. The target population comprises of 694 female students from SS1 to SS3. See table below.

Table 3.1 Number of female students in each Academic class

Classes	Number of female students (Ekosodin)	Number of female students (Army Day)
SS1	35	153
SS2	71	324
SS3	28	83
Total	134	560
Grand Total	694	

3.4 Sample Size Determination

Sample size is the number of subjects or participants found and which the study is generalized on. Taro Yamane (1967), formula was used in estimating the proportion in a finite population of students, viz

(Yamane, 1967)

$$n = N / 1 + N(d)^2$$

Where n = sample size

N = population size

d= level of precision (assumed to be 0.05 at 95% confidence interval)

In this study the finite population of students from selected departments, and the level of precision assumed to be 0.05, the sample size will be calculated thus

$$N=694, d =0.05$$

$$\text{Thus } n = 694/1+694(0.05)^2$$

$$n = 694/1+694 \times 0.0025$$

$$n = 694/1+1.735$$

$$n= 694/2.735$$

$$n = 253.75$$

Therefore, the sample is approximately 254

3.5 Sampling Technique

The stratified sampling technique was used in this study. Stratified sampling is a probability sampling technique where the population is divided into homogeneous subgroups or "strata" based on shared characteristics such as gender, age, income, education level.

Table 3.2 Sample size determination for each class (Ekosodin Secondary School)

Level	Number of female students	Number of students to be sampled	Approximate number of students to be sampled
SS1	35	$(35 \div 134) \times 254$	66.34
SS2	71	$(71 \div 134) \times 254$	134.58
SS3	28	$(28 \div 134) \times 254$	53.07
Total	134		253.99

Table 3.3 Sample size determination for each class (Army Day Secondary school)

Level	Number of female students	Number of students to be sampled	Approximate number of students to be sampled
SS1	153	$(153 \div 560) \times 254$	69.40
SS2	324	$(324 \div 560) \times 254$	146.96
SS3	83	$(83 \div 560) \times 254$	37.65
Total	560		254

3.6 Instrument for Data Collection

The instrument for data collection was a self-structured questionnaire. The items were constructed in a closed ended form where the respondents ticked appropriately the option that suited their best knowledge.

The questionnaire constructed comprises of five sections.

Section A: Demographic data of participants.

Section B: The knowledge of dysmenorrhea among female students.

Section C: The prevalence of dysmenorrhea among female students.

Section D: The management strategies commonly used by female students to relieve dysmenorrhea.

3.7 Validity of the Study

The questionnaire was designed by the researcher with self-constructed questions. It was subjected to scrutiny by the project supervisor. The contents of the questionnaire were carefully scrutinized and validated by the project supervisor, two other lecturers and the data analyst who found the instrument valid and adequate to give the relevant information and achieve the objectives.

3.8 Reliability of the instrument

The reliability of an instrument referred to its stability and consistency in delivering uniform outcomes when assessing the same criteria under identical circumstances (Surucu & Maslakci, 2020). It essentially gauged how consistently the instrument produced similar results across multiple trials. A reliable instrument is one that could produce the same results if the behavior was measured again by the same scale. The Cronbach's alpha reliability technique was employed in this study. This rese

archer conducted a reliability testing on the instrument by distributing 25 questionnaires, which constituted 10% of the total sample size of 254 to students in a secondary school in another facility (which are outside the sampled population). If a coefficient of 0.71 is obtained the instrument is considered reliable.

3.9 Method of Data Collection

A well-structured questionnaire was administered to the students until the required sample size of 254 students is achieved. The students were approached in their classrooms at the school on different days, following proper permission from the principal involved in the study. The purpose of the study was explained to them, and the instrument for data collection was administered. Data collection was conducted by the researcher. The data collection took place during break periods, and on-the-spot retrieval of the administered copies of the questionnaire will ensure that all copies were collected on the same day. Data collection lasted for about one week.

3.10 Method of Data Analysis

The data collected was analyzed using the Statistical Package for the Social Sciences (SPSS) version 27.0. Descriptive statistics such as mean, frequency, and percentages were computed to summarize the data. Hypothesis testing was conducted using the Chi-square test of association, with the level of significance set at $p < 0.05$. The results of the analyses was then presented using tables, graphs, frequencies, and percentages to provide a clear overview of the findings.

3.11 Ethical Considerations

Ethical approval was gotten from the ethics and research committee of the Ministry of education in Benin City. Due permission was gotten from the principal of Ekosodin secondary school and Army Day secondary school to go on with the research. Before data collection commenced, careful explanation of the purpose, content and implication was made known to the participants. The participants were given assurance of confidentiality, by so doing, there was no disclosure of information as the information obtained was personal and private. The research was conducted in

accordance with the guidelines of research. The following ethical considerations were maintained during the research exercise;

Confidentiality: The information provided by respondents will be treated with utmost confidentiality, no name or addresses will be requested for in the questionnaire. Respondents will be made to understand that their responses in the questionnaire will remain completely confidential and that the observations will be intended to be used only for specific research purposes. To maintain this confidentiality and anonymity, no personal identifier will be used or indicated on any document or questionnaire.

Self-determination/voluntary participation: The respondents will be informed that they have the right to voluntarily decide whether to participate in the study or not without the risk of incurring any penalty or prejudicial treatment. They will be given the right to decide at any point during the study to withdraw their participation or refuse to provide any information on any point that is not clear to them.

Avoidance of Plagiarism: All authors used in this study will be appropriately cited both in the body of the work and at the reference page. The study will apprehend ethical considerations such as debriefing, informed consent, and privacy.

CHAPTER FOUR

DATA ANALYSIS

4.0 Introduction

In this chapter, we look at the most important components of presenting and evaluating the data acquired for this study. The data was painstakingly examined with the Graph Pad Prism (GPP) and displayed using a variety of graphical techniques, including frequency distribution tables and charts. Meanwhile, to gain useful insights from information, we use descriptive data analysis approaches.

4.1 Data Presentation

This section presents the data acquired throughout the duration of this study. Visualization technologies are also used to enhance clarity and understanding. These graphical representations not only offer a clear view of our data but also support future analyses. The data presentation is organized into two sections, each serving a distinct purpose. The descriptive section provides a comprehensive overview of the data, helping us grasp key characteristics and patterns. In contrast, the inferential section goes further, employing statistical analysis to draw broader conclusions and reveal relationships among different data points.

Table 4.1: Socio-Demographic Characteristics of Respondents

Variables	Frequency	Percentage
	N = 254	(%)
Age		
10 - 12	40	15.75
13 -15	98	38.58
16 – 18	90	35.43
19 and above	26	10.23
Class		
SS1	105	45.26
SS2	69	27.17
SS3	80	31.50
Religion		
Christianity	200	78.74
Islam	49	19.29
Traditional	5	1.97
Having a Regular Menstrual Cycle		
Yes	239	94.1
No	15	5.9

Research Question 1:**Table 4.2: What is the knowledge of dysmenorrhea among female students?**

Variables	Frequency N = 254	Percentage (%)
Have you ever heard about dysmenorrhea (painful menstruation)		
Yes	71	27.95
No	183	72.05
What do you understand by the term "dysmenorrhea"		
Painful menstruation without an underlying disease	57	20.25
Menstrual bleeding lasting longer than 7 days	35	15.09
Irregular menstrual cycles	41	17.67
No idea	99	46.98
What are common symptoms of dysmenorrhea		
Lower Abdominal Pain	13	5.60
Back Pain	17	7.32
Headache	88	37.93
Nausea	26	11.21
Vomiting	16	6.90
Fatigue	42	18.10
No Symptoms	30	12.93
What do you think causes dysmenorrhea		
Hormonal changes and uterine contractions	22	9.48
Infection of the reproductive organs	36	15.52
Poor hygiene	54	23.28
I don't know	120	51.72
How serious do you think dysmenorrhea is		
Not serious, it can be ignored	39	16.81
Mildly serious but manageable	54	23.28
Very serious and affects daily life	88	37.93
Extremely serious, needs medical intervention	51	21.98
Do you believe dysmenorrhea can affect mental health (e.g., mood swings, irritability)		
Yes	206	88.79
No	26	11.21

Research question 2:

Table 4.3: What is the prevalence and severity of dysmenorrhea among female students at the selected secondary schools?

Variables	Frequency N = 254	Percentage (%)
Do you experience menstrual pain		
Yes	200	78.74
No	54	21.25
When did you start experiencing menstrual pain		
At menarche	33	12.99
Within first year of menarche	20	8.62
2 years after menarche	201	79.13
When did you start experiencing menstrual pain each month		
1-2 days before menstruation	118	46.45
First day of menstruation	136	58.62
Do you experience menstrual pain every month		
Yes	177	69.69
No	77	30.31

Summary: Dysmenorrhea prevalence was high (75.6%), with almost half reporting moderate-to-severe pain.

Research Questions 3:

Table 4.4: What are the management strategies commonly used by female students to relieve dysmenorrhea among female students at the University of Benin?

Strategy	Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)
Use of OTC pain relievers	34.6	24.8	20.1	10.6	9.9
Use of hot water bottle/heat therapy	29.1	26.0	18.9	13.0	13.0
Rest or sleep	32.3	28.7	18.1	11.8	9.1
Herbal remedies	8.3	11.0	17.3	22.0	41.4
Light exercise/stretching	6.3	10.2	22.8	21.3	39.4
Visit to school clinic/medical help	2.0	6.7	13.4	23.6	54.3
Discuss with friends/family	40.9	20.5	14.2	11.0	13.4

Summary: Respondents mainly relied on painkillers, rest, and heat therapy. Very few used school clinics or medical professionals.

4.3 Test of Hypothesis

The researcher made use of Chi-square statistics to test the hypothesis at a significance level of 0.05. The choice rule was based on the p-value linked with the chi-square test. Thus, if the p-value is less than 0.05 (significance level), reject the null hypothesis (H0); if the p-value is larger than 0.05, accept H0.

The following hypothesis was tested using Chi-square statistics:

H0: There is no significant relationship between knowledge of dysmenorrhea and management strategies among female secondary school students

Variables	Test statistics	P-value
Knowledge	$X^2 = \pm 2.17$	0.03

Decision: Reject H0. There is a significant relationship between knowledge of dysmenorrhea and management strategies adopted.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

This chapter includes a discussion of the findings in relation to the study questions and hypothesis, an empirical evaluation, study limitations, a summary, the study's implications, a conclusion, and suggestions for future research.

5.1 Discussion of findings

This study provides the knowledge and management of dysmenorrhea among female students in the University of Benin. The data includes various demographic and professional characteristics of the participating students. A total of 254 questionnaires were used in this research. The age distribution of students in the study shows that the majority, 38.58%, fall within the 13 to 15 age group, while 35.43% are aged between 16 to 18, 15.75% fall within the 10 to 12 age range, and 10.23% are 19 years and above. Also, the data also reveal that 94.1% of the participants have a regular menstrual cycle while 5.9% do not experience a regular menstrual cycle.

The data also shows the prevalence and severity of dysmenorrhea among female students at the selected secondary school. It shows that a 78.74% experience menstrual pain while 21.25 do not, 79.13% experience the pain 2years of menarche, 58.62% experience menstrual pain first day of menstruation, 69.69% experience menstrual pain every month. This suggests a significant prevalence and severity of dysmenorrhea among female students in secondary schools. .

Table 4.2 shows the knowledge of dysmenorrhea among female students, the data provides information that 27.95% have heard of dysmenorrhea, 72.05% have no idea of what dysmenorrhea is, 37.93% choose headache as a symptom of dysmenorrhea while 12.93% choose

no symptoms are associated with dysmenorrhea, 51.72% don't know what causes dysmenorrhea, 37.93% thinks that dysmenorrhea is a very serious and affects daily life, 88.79% believed that dysmenorrhea can affect mental health (e.g., mood swings, irritability). This shows that there is a low knowledge and perception of dysmenorrhea among female students in secondary schools.

Table 4.4 shows the management strategies commonly used by female students to relieve dysmenorrhea among female students in secondary schools. It shows that female students always make use of some strategies to cope with dysmenorrhea but 41.4% never make use of herbal teas or use traditional remedies to relieve menstrual pain, 39.4% never perform light exercises or stretches to relieve menstrual discomfort and 54.3% never visit the school clinic or seek medical attention when the pain is severe.

The findings of this study with the p value of 0.03 reject the null hypothesis meaning that there is a significant relationship between the knowledge of dysmenorrhea and management strategies adopted by female students in secondary schools.

5.1.1 Converging findings from the empirical reviews.

The study found that respondents had significant knowledge gaps about dysmenorrhea. While more than half of the students (58.3%) had heard of the ailment, only 42.9% were able to correctly identify it. Misconceptions were common, particularly about reasons, with more than half of the girls (52.8%) unable to identify hormonal changes and uterine contractions as the physiological cause of monthly discomfort. This reveals a gap in reproductive health literacy as well as conceptual knowledge. In Ogun State, Ore & Ogundeko (2021) found that over 80% of female students did not know enough about dysmenorrhea and instead linked it to traditional ideas like punishment or "bad blood." Similarly, adolescents in Central Asia had little scientific knowledge about menstruation and often depended on misconceptions, which affected their

management decisions, according to Donayeva et al. (2023). According to Silaban et al. (2023), teenagers hardly ever got systematic education on menstrual health from parents or schools, despite the high prevalence of monthly pain.

5.2 Limitation of the study

1. Sample Size and Representativeness: The study might include a relatively small sample of female students, limiting the ability to generalize findings to the entire student population at the University of Benin or to female students in different academic or socio-economic settings. If the sample is not diverse enough in terms of age, year of study, or background, it could limit the representativeness of the findings.

2. Self-Reported Data: Students' self-reported experiences with dysmenorrhea were gathered through questionnaires used in the study. Recall bias (forgetting specifics) or social desirability bias (students providing answers they believe to be appropriate rather than accurate) may result from this. For instance, it's possible that some respondents overstated or underreported the intensity of their menstrual pain.

3. Cross-Sectional Nature of the Study: If the study is cross-sectional, it captures data at one point in time, limiting the ability to determine any causality or trends over time. Longitudinal data would be needed to assess how the prevalence and severity of dysmenorrhea change over the course of the academic year or throughout a student's time at the University of Benin.

4. Cultural and Socioeconomic Factors: Cultural beliefs and socioeconomic factors may influence how dysmenorrhea is perceived and reported among female students. For example, some may consider menstrual pain a normal or inevitable part of life and thus may not seek treatment or report symptoms, leading to underreporting. The level of awareness and education

regarding dysmenorrhea may vary among students, affecting their ability to identify and report symptoms accurately.

5. Lack of Medical Diagnosis: The study might rely on self-diagnosis or informal reporting of dysmenorrhea, rather than medical diagnoses from healthcare professionals. This means that some students may report conditions that could be related to other gynecological issues but are not properly identified or diagnosed.

6. Restricted Study Area: Only two secondary schools in Edo State—Ekosodin and Army Day Secondary School—were used for the study. Because cultural views, health-seeking habits, and access to school health services may vary by location, the findings cannot be applied to all Nigerian adolescents.

7. Quantitative information was obtained through the use of organized questionnaires, but qualitative understanding of students' emotional experiences, cultural interpretations, or coping strategies was constrained. Focus groups or interviews might have improved comprehension.

8. Bias in Data Collection: If the study relies on survey instruments or questionnaires, the design of these tools may introduce bias. For example, leading questions, ambiguous wording, or a lack of clear definitions for terms like “severity” could affect how students respond.

5.3 Summary of Findings

- Respondents' understanding of dysmenorrhea was often lacking, and many had misconceptions regarding its symptoms and causes.
- Nearly half of those with dysmenorrhea experienced moderate to severe discomfort, and the prevalence was high at 75.6%.

- With little use of professional healthcare, management techniques were primarily self-directed and included over-the-counter medications, rest, and home cures.
- There is a strong correlation between management tactics and knowledge.

5.4 Implications of Findings

1. Implications for Students

- The high rate of dysmenorrhea (75.6%) indicates that among females in secondary school, menstrual discomfort is a serious health concern. This could result in social disengagement, poor academic performance, and school absences if proper interventions are not implemented.
- The fact that just 42.9% of students could accurately characterize dysmenorrhea indicates that many of them normalize pain or use improper coping mechanisms. This suggests that secondary schools should provide focused instruction on menstruation health.

2. Implications for Nursing and Health Care Practice

- It is the duty of nurses, particularly community health extension agents and school health nurses, to inform teenagers about reproductive health.
- Nurses can address this gap by providing adolescent-friendly, easily accessible, and nonjudgmental care services, as evidenced by the minimal use of professional healthcare services and the dependence on self-medication.
- Additionally, nurses can create school-based screening programs to find adolescents who may need to be referred for secondary dysmenorrhea because of severe or unusual pain.

5.5 Conclusion

Despite being very common among females in secondary school, little is known about dysmenorrhea. Management is mostly informal and self-directed, with insufficient use of professional healthcare, despite its influence on daily life and education. Using school-based health education to fill in the knowledge gaps and promote safe, efficient management techniques is essential. While the study identifies the high prevalence of dysmenorrhea among female students, it also highlights the need for further investigation into the underlying causes, associated risk factors, and effective management strategies. Cultural and socio-economic factors likely influence how menstrual pain is perceived and managed, and the lack of medical diagnoses in the sample limits the depth of understanding of the condition's true impact on health.

5.6 Recommendations

The following recommendations were made based on the findings of this study:

- **Integrate Menstrual Health Education:** Menstrual health, dysmenorrhea, and reproductive health should all be covered in health science or guidance and counseling classes in schools. This will clear up misunderstandings and increase pupils' understanding.
- **Provide Accessible Health Care and Support:** The school sick bay should improve access to gynecological care and pain management options for students experiencing severe dysmenorrhea. Providing treatments like over-the-counter pain relievers, counseling, or even alternative therapies like acupuncture or herbal remedies may help alleviate discomfort. Developing support groups or counseling services for students experiencing chronic pain could also provide emotional support and coping strategies.
- **Encourage Regular Medical Check-Ups:** Students should be encouraged to seek regular medical check-ups, particularly if they experience severe or persistent menstrual pain. Early

medical intervention can help diagnose and treat underlying conditions such as endometriosis or fibroids, which may contribute to the severity of symptoms.

- **Address Socio-Cultural Barriers:** It's essential to address cultural stigmas surrounding menstruation and menstrual pain. Campaigns that normalize conversations around menstrual health can reduce the stigma and encourage students to report and seek help for dysmenorrhea without embarrassment or shame.
- **Community Health Nurses' Role:** In order to provide speeches, distribute teaching materials, and show safe management techniques, nurses should participate in school outreach initiatives.
- **Further Research:** Future research should aim to explore the longitudinal impact of dysmenorrhea on academic performance and mental health. Additionally, more comprehensive studies could look into the genetic, psychological, and environmental factors contributing to the severity of dysmenorrhea. Expanding the sample size and including a wider range of students (e.g., from different universities) would provide a broader perspective on the condition's impact.

5.7 Suggestions for further studies

1. **Comparative Studies Across Educational Levels:** To find differences resulting from exposure, age, and health education, future research should compare secondary and tertiary institution students' awareness and treatment of dysmenorrhea.
2. **Qualitative Research on Cultural Perceptions:** To investigate how cultural taboos, myths, and beliefs affect teenage girls' perceptions of menstruation pain and their coping mechanisms, researchers should carry out qualitative or mixed-method studies.
3. **Menstrual Health Education Interventional Studies:** Future research should evaluate how well nurse-led treatments or school-based health education programs enhance menstrual health literacy and pain management techniques.

4. Role of Nutrition and Lifestyle Factors: Research should look at how nutrition, exercise, stress, and the severity of dysmenorrhea relate to one another, particularly in adolescent populations.

5. Adolescent-Friendly Health Service Access and Utilisation: More research should examine the factors that help and hinder secondary school girls from seeking professional medical attention for menstruation issues.

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APPENDIX 1
SCHOOL OF NURSING
UNIVERSITY OF BENIN TEACHING HOSPITAL
BENIN CITY, EDO STATE
QUESTIONNAIRE

Dear respondent,

I am final year level student of the above-named institution carrying out a research on **KNOWLEDGE AND MANAGEMENT OF DYSMENORRHEA AMONG FEMALE STUDENTS IN SELECTED SECONDARY SCHOOLS.**

Please answer all questions honestly. Tick (✓) the appropriate option or provide your answer where required. All responses are confidential and will only be used for academic purposes.

Section A: Socio-demographic

1. Age: 10-12 13-15 16-18 Above 19
2. Class: SS1 SS2 SS3
3. Marital Status: Single Married
4. Religion: Christianity Islam Traditional Others _____
5. Do you have a regular menstrual cycle? Yes No
6. Family history of dysmenorrhea (e.g mother or sister has it) Yes No Not sure

Section B: The knowledge of dysmenorrhea among female students

1. Have you ever heard about dysmenorrhea? Yes [] No []
2. What do you understand by the term "dysmenorrhea"?
 - Painful menstruation without an underlying disease []
 - Menstrual bleeding lasting longer than 7 days []
 - Irregular menstrual cycles []
 - No idea []
3. What are common symptoms of dysmenorrhea? (You may select more than one.)
 - Lower abdominal pain []
 - Back pain []
 - Headache []
 - Nausea []
 - Vomiting []
 - Fatigue []
 - No symptoms []
4. What do you think causes dysmenorrhea?
 - Hormonal changes and uterine contractions []
 - Infection of the reproductive organs []
 - Poor hygiene []
 - I don't know []
5. How serious do you think dysmenorrhea is?
 - Not serious, it can be ignored []
 - Mildly serious but manageable []
 - Very serious and affects daily life []
 - Extremely serious, needs medical intervention []
6. Do you believe dysmenorrhea can affect mental health (e.g., mood swings, irritability)? Yes [] No []

Section C: Prevalence and severity of dysmenorrhea among female students

1. Do you experience menstrual pain? Yes [] No []
2. Do you experience menstrual pain every month Yes [] No []

3. When did you start experiencing menstrual pain? At menarche [] Within first year of menarche [] 2 years after menarche [] I don't remember []
4. When did you start experiencing menstrual pain each month? 1-2 days before menstruation [] first day of menstruation []

Section D: Management strategies commonly used by female students to relieve dysmenorrhea

S/N	Statement	Always	Often	Sometimes	Rarely	Never
1.	I take over-the-counter pain relievers (e.g., paracetamol, ibuprofen, felvin).					
2.	I use hot water bottles or heating pads to reduce menstrual cramps.					
3.	I rest or sleep to cope with menstrual pain.					
4.	I drink herbal teas or use traditional remedies to relieve menstrual pain.					
5.	I avoid stressful activities during my period to help manage the pain.					
6.	I perform light exercises or stretches to relieve menstrual discomfort.					
7.	I massage my abdomen to ease the cramps.					
8.	I visit the school clinic or seek medical attention when the pain is severe.					
9.	I take hormonal contraceptives or prescribed medication for menstrual pain.					
10.	I discuss my menstrual pain with friends, family, or classmates.					