



Research Paper

## Knowledge, Attitude, and Practice of Self-Care During Menstruation By Female Undergraduate Students In A Private University In Port Harcourt, Nigeria

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### Abstract

The aim of the study was to examine the knowledge, attitudes, and practices of self-care during menstruation by female undergraduates in a private University of Medical Sciences, in South- South Nigeria. But specifically, the objectives were : (1) to assess the level knowledge of self-care during menstruation among female undergraduates students of the university.(2) to examine the attitude of female undergraduates towards menstruation, and (3) to identify the practices of self-care towards menstruation among female undergraduates. The descriptive cross-sectional study was used. The instrument for data collection was a questionnaire developed by the researchers. The reliability coefficient of the instrument using Pearson Product Moment correlation coefficient was 0.8. Health belief model was the theory that guided the study. A total of 232 female undergraduate students participated in the study. The findings revealed that 97.7% had adequate knowledge of self-care during menstruation, 64.4% of the female undergraduate had a positive attitude towards menstrual hygiene and 77.3% practiced good menstrual hygiene. Also, the findings showed that more than half of the respondents had adequate knowledge and their awareness translated to a positive attitude towards self-care during menstruation. The study recommended that mothers should act as role models for their female children and prepare them before menarche. Pamo University of Medical Sciences should provide means of early menstrual health education for female undergraduates, provide incinerators to ensure proper disposal of sanitary pads and the environmental service providers should be trained on how to handle disposed sanitary items.

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## **I. Introduction**

nosocomial infections are infections acquired in the hospital or other health care facilities that were not present or incubating at the time of the client's admission. It includes those infections that become symptomatic after the client is discharged as well as infections among medical personnel. Most nosocomial infections are transmitted by health care personnel who fail to put into practice standard infection prevention measures such as hand washing procedures or change of gloves between client contact. Compliance on the part of HCWs including nursing and medical students with standard precautions has been recognized as being an efficient means to prevent and control H

Menstruation is the shedding of the lining of the uterus. The endometrial tissue is shed from the womb and is released through the vagina (Yvette 2018). The average age of menarche around the globe is 12–13, but menarche can typically occur between ages 9 and 15 years (ACOG, 2016). Among non-pregnant women, menstruation lasts from puberty to menopause. Regular menstruation occurs for a few days that is usually 3 to 5 days, although if it lasts from 2 to 7 days, it is considered normal (Womenshealth, Gov., 2014).

Self-care during menstruation is the process of taking care of oneself during the menstrual period of the menstrual cycle. They are the activities carried out by the adolescent to maintain optimum health during the menstrual period. Some materials such as pads, tampons, and menstrual cups have been manufactured to help improve hygiene and self-care during menstruation. It handles the special healthcare needs and requirements of females during monthly menstrual periods. The areas of special concern among females during periods include the choice of the best period protection material, how often and when to change the sanitary protection, satisfactory cleaning of the vagina and vulva as well as the assumed benefits of vaginal douching at the end of each menstrual period. Provisions for good menstrual hygiene include home-made remedies like

Pieces of cotton cloth which are either placed on a woman's undergarment or on a homemade belt that wraps around the waist. These clothes can be washed, dried and used again. Available commercial products for women's hygiene during menstruation include pads, tampons, and menstrual cups.

Self-care during menstruation is very important. This is because poor self-care during period could expose the female to fungal or bacterial infections of the reproductive tract and urinary tract. Irritation of the skin may cause discomfort and could result in dermatitis, accompanied by rashes, skin swells, sores, and blisters. Trapped moisture provides a breeding ground for bacteria and fungus. Also wearing a pad for too long can lead to an infection, such as yeast infection.

Adolescent menstrual and proper self-care plays an essential role in adolescent health and wellbeing. The attitude and behaviour toward menstruation and menstrual hygiene practice are affected by many factors, including social, cultural, economic, and religious background (Hayam et al 2021). Poor menstrual hygiene can result in significant reproductive disorders, and influence female dignity, well-being, and academic performance (Sommeret al., 2015). However, improving the knowledge about menstruation even before menarche can improve self-care during menstruation.

At least 500 million women and girls globally lack adequate facilities for menstrual hygiene management. Inadequate water, sanitation, and hygiene facilities, particularly in public places, such as in schools, workplaces or health centers, can pose a major obstacle to women and girls. The unavailability of means to dispose of used sanitary pads and water to wash hands means that women and girls face challenges in maintaining their menstrual hygiene in a private, safe and dignified manner. Various research papers have also reported that schools in Africa, countries such as Ghana and Nigeria have insufficient toilets, inadequate privacy measures in there, and inadequate disposal facilities for used absorbents (world bank 2018).

Also UNESCO (2014) reports that one out of every 10 girls in sub-Saharan Africa misses school during her menstrual cycle. A Ugandan study by Boosey et al (2014) found that nearly two-thirds of schoolgirls in rural areas miss school at least once a month owing to menstruation. Similarly, in the Amhara province of Ethiopia, more than half the girls in secondary and preparatory schools remain absent during menstruation. Therefore, this study seeks to assess the knowledge, attitude and practice of self-care during menstruation by female undergraduates in PAMO University of Medical Sciences

### **Statement of the Problem**

Most adolescents at menarche do not have proper knowledge and insight towards menstrual cycle and self-care during menstruation. Most females are faced with challenges such as: body odour, increased rate of urinary tract infections, public disgrace related to periodic stain due to the inability of adolescents to adequately calculate menstrual cycle. Other researchers have written on this topic in Rivers state, Kano state and other institutions, but it is doubtful if any researcher have carried out a research on the topic in Pamo undergraduates. In view of these, this study seeks to assess the knowledge, attitude and practice of female undergraduates towards self-care during menstruation in Pamo University of medical sciences.

1. **Research questions**
1. What is the level of knowledge on self-care towards menstruation?
2. What is the attitude of undergraduates towards menstruation?
3. What are the self-care practices carried out during menstruation?

## **II. LITERATURE REVIEW**

### **Concept of knowledge**

Knowledge can refer to a theoretical or practical understanding of a subject. It can be implicit (as with practical skill or expertise) or explicit (as with the theoretical understanding of a subject): facts, information and skills acquired by a person through experience or education. Knowledge is a theoretical or practical understanding of a subject. It is the awareness or familiarity gained by experience of a fact or situation (Grimm, 2014). Several researchers have revealed that a large number of adolescent secondary school girls possess scanty knowledge regarding the phenomenon. A study of Indian adolescent secondary school girls found out that the girls are generally not told anything about menstruation not until they experience it. Girls have extremely limited information about why they menstruate and how to manage menstrual flows hygienically and safely. Mothers and friends act as their main source of information (Carlson, 2014).

### **Concept of attitude**

Attitudes are views, beliefs, or evaluations of people about something. Attitude is the belief (views) of a person towards something (Alex, 2020). Attitude is a psychological construct, a mental and emotional entity that characterizes a person. They are complex and are an acquired state through experiences. It is an individual's predisposed state of mind regarding a value and it is precipitated through a responsive expression towards oneself, a person, place, thing, or event which in turn influences the individual's thought and action (Richard, 2016). Menstruation has usually been associated with some levels of embarrassment, shame, and suffering by the community. Boys find menstruating girls smelly and objectionable, therefore girls will simply stay home to deal with this, to avoid the embarrassment associated with staining while at school. Girls slip behind in their studies and are incapable of learning because of menstrual hygiene related stress and often eventually drop out. Menstruation is a taboo subject for too many people, male and female alike, leading to misunderstanding, confusion, and prejudice. Embarrassment and stigma around menstruation not only affects how adolescent girls feel about menstruation, but also makes it difficult to cope at a very practical level. It inflicts indignity upon women and girls and violates their rights to non-discrimination, equality, bodily integrity, health, privacy and right to freedom from inhuman and degrading treatment. Girls are forbidden from cooking or preparing meals, participating in social events, working in the field, and going to their various religious places during their periods they are considered impure, filthy, and even cursed (Wanjiku 2016).

### **Concept of practice**

Practice is the act of rehearsing a behavior repeatedly, to help learn and eventually master a skill. It is the knowledge of how something is usually done, the actual application or use of an idea, belief, or method, as opposed to theories relating to it. The lack of knowledge and education about menstruation feeds into many traditional and cultural practices that exacerbate the negative feelings many schoolgirls experience. These practices often lead girls to feel isolated and stigmatized, as well as discourage girls from participating in school and other social events while menstruating. Some ethnic groups in particular areas of Malawi pay a man called a fisi to have sexual intercourse with a girl who has begun menstruating as a sexual initiation rite. Cultural initiation rituals following menarche in Tanzania were commonplace in the past. However, these practices continue only in certain ethnic groups, such as the Masai and Zaromo. Compulsory schooling is linked to a decrease in these initiation rituals (Vaughn, 2013). From a very practical perspective, girls who lack adequate sanitary materials may miss school each month during their period. In sub-Saharan Africa, the most commonly used feminine hygiene products are reusable cloths and sanitary pads among schoolgirls. Girls make reusable cloths using scraps from shirts, dresses, old towels, or blankets. Girls from peri-urban and rural areas typically utilize reusable menstrual materials and often respond that sanitary pads are too expensive for them to purchase. Girls from rural areas indicate that sanitary pads are inaccessible in their areas. A very small proportion of girls use tampons and menstrual cups. Many reusable cloth users explain the obstacles they face when washing and drying their clothes. Most girls wash their cloth during their nightly baths. They do not want to put their clothes out to dry in a place they can be seen. Consequently, girls dry their clothes in a hidden place without light. Under the bed is the most common drying space. Most girls only have two or three clothes so they often resort to wearing damp cloths. This can cause health risks and can also lead to potential embarrassment when the cloth gives off a strong, distinctive scent (Vaughn, 2013).

Other feminine products girls use include cotton, wool, socks, toilet paper, pages torn from school exercise books and old newspapers, pieces of sponge torn from mattresses, and additional clothing worn as

menstrual protection. In poor rural areas, girls use leaves, cow dung, or dig a hole in the ground to sit on for the duration of menses. In Kenya, some girls use soft grass that they place in their underwear or sit on to manage their menses. In Ethiopia, 25% of schoolgirls use nothing and typically isolate themselves during menstruation (Jacquelyn, 2013). In several cultures, diverse restrictions are imposed on women and girls during their menstruation period, thus resulting in poor personal menstrual hygiene and unsafe sanitary conditions leading to gynecological consequences.

The research clearly demonstrates that self-care during menstruation is a problem for many schoolgirls in sub-Saharan Africa. Numerous schoolgirls are missing school, underperforming, and living with negative emotional experiences and physical pain. The existing research provides many recommendations and examples of promising initiatives to resolve the menstrual hygiene situation. Further research will add to this base and help define the problem more clearly.

### **Concept of menstruation**

Menstruation is a physiological phenomenon that begins in females in adolescent age. Poor menstrual hygiene can result in significant reproductive disorders. However, improving the knowledge about menstruation even before menarche can improve self-care during menstruation. The menstrual cycle is complex and is controlled by many different glands and the hormones that these glands produce. A brain structure called the hypothalamus causes the nearby pituitary gland to produce certain chemicals, which prompt the ovaries to produce the sex hormones estrogen and progesterone.

The menstrual cycle is a biofeedback system, which means each structure and gland is affected by the activity of the others.

### **Phases of the menstrual cycle**

The four main phases of the menstrual cycle are:

- menstruation
- follicular phase
- ovulation
- the luteal phase

### **Menstruation**

Menstruation is the elimination of the thickened lining of the uterus (endometrium) from the body through the vagina. Menstrual fluid contains blood, cells from the lining of the uterus (endometrial cells) and mucus. The average length of a period is between three days and one week. Sanitary pads or tampons are used to absorb the menstrual flow. Both pads and tampons need to be changed regularly (at least every four hours). Using tampons has been associated with an increased risk of a rare illness called toxic shock syndrome (TSS) (Rosner, et al 2021).

### **Follicular phase**

The follicular phase starts on the first day of menstruation and ends with ovulation. Prompted by the hypothalamus, the pituitary gland releases follicle-stimulating hormone (FSH). This hormone stimulates the ovary to produce around five to 20 follicles (tiny nodules or cysts), which bead on the surface. Each follicle houses an immature egg. Usually, only one follicle will mature into an egg, while the others die. This can occur around day 10 of a 28-day cycle. The growth of the follicles stimulates the lining of the uterus to thicken in preparation for possible pregnancy, (Rosner, et al 2021)

### **Ovulation**

Ovulation is the release of a mature egg from the surface of the ovary. This usually occurs mid-cycle, around two weeks or so before menstruation starts. During the follicular phase, the developing follicle causes a rise in the level of estrogen. The hypothalamus in the brain recognizes these rising levels and releases a chemical called gonadotrophin-releasing hormone (GnRH). This hormone prompts the pituitary gland to produce raised levels of luteinizing hormone (LH) and FSH. Within two days, ovulation is triggered by the high levels of LH. The egg is funneled into the fallopian tube and toward the uterus by waves of small, hair-like projections. The life span of the typical egg is only around 24 hours. Unless it meets a sperm during this time, it will die. When you want to have a baby you can improve your chance of getting pregnant if you know about ovulation and the 'fertile window' in the menstrual cycle, (Rosner et al 2021)

### **Luteal phase**

During ovulation, the egg bursts from its follicle, but the ruptured follicle stays on the surface of the ovary. For the next two weeks or so, the follicle transforms into a structure known as the corpus luteum. This structure starts releasing progesterone, along with small amounts of oestrogen. This combination of hormones maintains the thickened lining of the uterus, waiting for a fertilized egg to stick (implant). If a fertilized egg implants in the lining of the uterus, it produces the hormones that are necessary to maintain the corpus luteum. This includes human chorionic gonadotrophin (HCG), the hormone that is detected in a urine test for pregnancy. The corpus

luteum keeps producing the raised levels of progesterone that are needed to maintain the thickened lining of the uterus. If pregnancy does not occur, the corpus luteum withers and dies, usually around day 22 in a 28-day cycle. The drop in progesterone levels causes the lining of the uterus to fall away. This is known as menstruation. The cycle then repeats, (Rosner et al, 2021)

### **Common menstrual problems**

Some of the more common menstrual problems include:

**Premenstrual syndrome (PMS)** – hormonal events before a period can trigger a range of side effects in women at risk, including fluid retention, headaches, fatigue, and irritability. Treatment options include exercise and dietary changes.

**Dysmenorrhea** – or painful periods. It is thought that the uterus is prompted by certain hormones to squeeze harder than necessary to dislodge its lining. Treatment options include pain-relieving medication and oral contraceptive pill.

**Heavy menstrual bleeding** (previously known as menorrhagia) – if left untreated, this can cause anemia. Treatment options include oral contraceptives and a hormonal intrauterine device (IUD) to regulate the flow.

**Amenorrhea** – or absence of menstrual periods. This is considered abnormal, except during pre-puberty, pregnancy, lactation and post menopause. Possible causes include low or high body weight and excessive exercise (Rosner et al 2021)

### **Physiology of Menstruation**

The reproductive system of a female, unlike men, shows regular cyclic changes that teleologically may be regarded as periodic preparation for pregnancy and fertilization. In primates and humans, the cycle is a menstrual cycle, and its most conspicuous feature is the periodic vaginal bleeding that occurs with the shedding of uterine mucous (menstruation). The length of the cycle is notoriously variable, but an average figure is 28 days from the start of one menstrual period to the start of the next. By common usage, the days of the cycle are identified by number starting with the first day of menstruation. It begins at puberty, ranging from the ages of 10 to 16, and ends at menopause at an average age of 51 (Rosner et al, 2021)

### **Functions**

Hormones are secreted in a negative and positive feedback manner to control the menstrual cycle. Hormone secretion begins in the hypothalamus where gonadotropin-releasing hormone (GnRH) is secreted in an increased, pulsatile fashion once puberty starts. gonadotropin-releasing hormone (GnRH) is then transported to the anterior pituitary, where it activates its 7-transmembrane G-protein receptor. This provides a signal to the anterior pituitary to secrete stimulating follicle hormone (FSH) and luteinizing hormone (LH). follicle hormone (FSH) and luteinizing hormone (LH) provide input to the ovaries. Within the ovarian follicle, there are 2 cell types responsible for hormone production, theca cells, and granulosa cells. LH stimulates theca cells to produce progesterone and androstenedione by activating the enzyme, cholesterol desmolase. Once androstenedione is secreted, the hormone diffuses to the nearby granulosa cells. Here, FSH stimulates the granulosa cells to convert androstenedione to testosterone then 17-beta-estradiol by activating the enzyme, aromatase. As levels of 17-beta-estradiol or progesterone increase based on the phases of the menstrual cycle, there is negative feedback back to the anterior pituitary to lower the levels of FSH and LH being produced and subsequently, the levels of 17-beta-estradiol and progesterone produced. An exception to this is during ovulation.

In this case, once a critical amount of 17-beta-estradiol is produced, it provides positive feedback to the anterior pituitary to produce increased amounts of FSH and LH. This feedback system is represented in figure 1. Additionally, within the feedback system, the granulosa cells produce inhibin and activin, which inhibit and stimulate FSH release from the anterior pituitary, respectively. This feedback mechanism is controlled by upregulating, to increase hormone production, or downregulating to decrease hormone production, the GnRH receptors on the anterior pituitary (Rosner et al 2021).

### **Normal Menstruation**

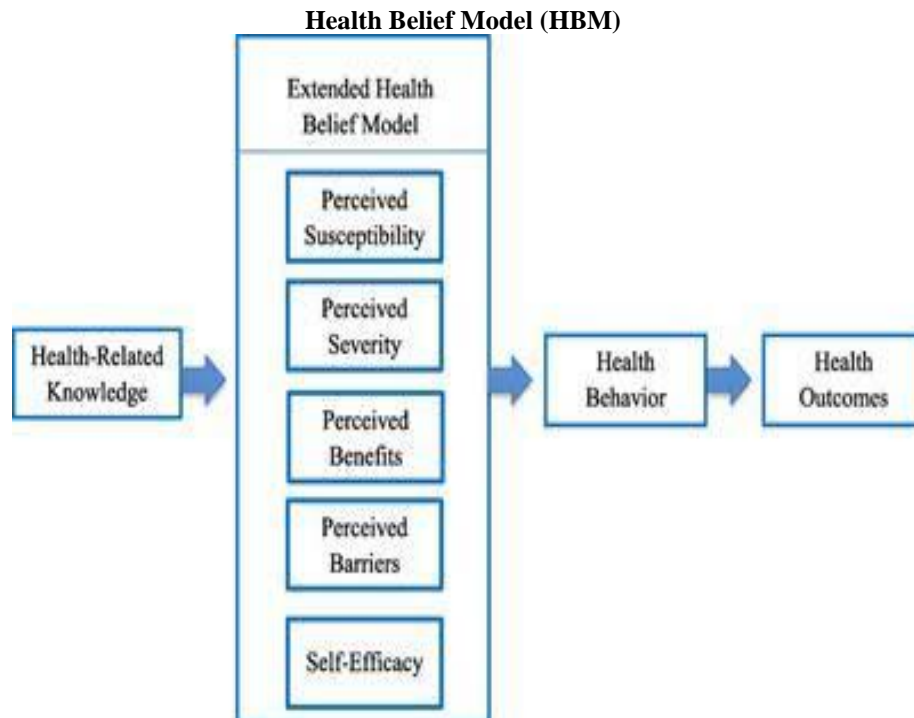
When the hormone levels decrease, the endometrium layer, as it has been changed throughout the menstrual cycle, is not able to be maintained. This is called menses, considered day 0 to day 5 of the next menstrual cycle. The duration of menses is variable. Menstrual blood is chiefly arterial, with only 25% of the blood being venous blood. It contains prostaglandins, tissue debris, and relatively large amounts of fibrinolysis from endometrial tissue. The fibrinolysis lyses the clot so that menstrual blood does not contain clots typically unless the flow is heavy.

The usual duration of the menstrual flow is 3-5 days, but flows as short as 1 day and as long as 8 days can occur in a normal female. The amount of blood loss can range from slight spotting to 80 mL and the average being 30mL. Loss of more than 80 mL of the blood is considered abnormal. Various factors can affect the

amount of blood flow, including medications, the thickness of the endometrium, blood disorders, disorders of blood clotting, etc, (Rosner et al 2021)

## 2.2 Theoretical Framework

To elucidate the study, we shall apply the following theories.



### THE HEALTH BELIEF MODEL

The health belief model (HBM) is a social psychological health behavior change model developed to explain and predict health-related behaviors, particularly in regard to the uptake of health services. The HBM was developed in the 1950s by social psychologists at the U.S. Public Health Service and remains one of the best known and most widely used theories in health behavior research. The HBM suggests that people's beliefs about health problems, perceived benefits of action and barriers to action, and self-efficacy explain engagement (or lack of engagement) in health-promoting behavior. A stimulus, or cue to action, must also be present in order to trigger the health-promoting behavior.

### Constructs of the Health Belief Model

The following constructs of the HBM are proposed to vary between individuals and predict engagement in health-related behaviors.

#### Perceived susceptibility

Perceived susceptibility refers to the subjective assessment of the risk of developing a health problem. The HBM predicts that individuals who perceive that they are susceptible to a particular health problem will engage in behaviors to reduce their risk of developing the health problem. Individuals with low perceived susceptibility may deny that they are at risk for contracting a particular illness. Others may acknowledge the possibility that they could develop the illness, but believe it is unlikely. Individuals who believe they are at low risk of developing an illness are more likely to engage in unhealthy, or risky, behaviors. Individuals who perceive a high risk that they will be personally affected by a particular health problem are more likely to engage in behaviors to decrease their risk of developing the condition (Smith, 2021).

#### Perceived severity

Perceived severity refers to the subjective assessment of the severity of a health problem and its potential consequences. The HBM proposes that individuals who perceive a given health problem as serious are more likely to engage in behaviors to prevent the health problem from occurring (or reduce its severity). Perceived seriousness encompasses beliefs about the disease itself (e.g. whether it is life-threatening or may cause disability or pain) as well as broader impacts of the disease on functioning in work and social roles. For

instance, an individual may perceive that dysmenorrhea is not medically serious, but if she perceives that there would be serious financial consequences as a result of being absent from work for several days, then she may perceive dysmenorrhea to be a particularly serious condition.

The combination of perceived severity and perceived susceptibility is referred to as a perceived threat. Perceived severity and perceived susceptibility to a given health condition depend on knowledge about the condition. The HBM predicts that a higher perceived threat leads to a higher likelihood of engagement in health-promoting behaviors (Smith, 2021).

### **Perceived benefits**

Health-related behaviors are also influenced by the perceived benefits of taking action. Perceived benefits refer to an individual's assessment of the value or efficacy of engaging in a health-promoting behavior to decrease the risk of disease. If an individual believes that a particular action will reduce susceptibility to a health problem or decrease its seriousness, then he or she is likely to engage in that behavior regardless of objective facts regarding the effectiveness of the action. For example, individuals who believe that wearing sunscreen prevents skin cancer are more likely to wear sunscreen than individuals who believe that wearing sunscreen will not prevent the occurrence of skin cancer (Smith, 2021).

### **Perceived barriers**

Health-related behaviors are also a function of perceived barriers to taking action. Perceived barriers refer to an individual's assessment of the obstacles to behavior change. Even if the individual perceives a health condition as threatening and believes that a particular action will effectively reduce the threat, barriers may prevent engagement in the health-promoting behavior. In other words, the perceived benefits must outweigh the perceived barriers in order for behavior change to occur. Perceived barriers to taking action include the perceived inconvenience, expense, danger (e.g. side effects of a medical procedure), and discomfort (e.g. pain, emotional upset) involved in engaging in the behavior. For instance, lack of access to affordable health care and the perception that a flu vaccine shot will cause significant pain may act as barriers to receiving the flu vaccine. In a study about breast and cervical cancer screening among Hispanic women, perceived barriers, like fear of cancer, embarrassment, fatalistic views of cancer, and language, were proved to impede screening (Smith, 2021).

### **Modifying variables**

Individual characteristics, including demographic, psychosocial, and structural variables, can affect perceptions (i.e. perceived seriousness, susceptibility, benefits, and barriers) of health-related behaviors. Demographic variables include age, sex, race, ethnicity, and education, among others. Psychosocial variables include personality, social class, and peer and reference group pressure, among others. Structural variables include knowledge about a given disease and prior contact with the disease, among other factors. The HBM suggests that modifying variables affect health-related behaviors indirectly by affecting perceived seriousness, susceptibility, benefits, and barriers (Smith, 2021).

### **Cues to action**

The HBM explains that a cue, or trigger, is necessary for prompting engagement in health-promoting behaviors. Cues to action can be internal or external. Physiological cues (e.g. pain, symptoms) are an example of internal cues to action. External cues include events or information from close others, the media, or health care providers promoting engagement in health-related behaviors. Examples of cues to action include a reminder postcard from a dentist, the illness of a friend or family member, mass media campaigns on health issues, and product health warning labels. The intensity of cues needed to prompt action varies between individuals by perceived susceptibility, seriousness, benefits, and barriers. For example, individuals who believe they are at high risk for a serious illness and who have an established relationship with a primary care doctor may be easily persuaded to get screened for the illness after seeing a public service announcement, whereas individuals who believe they are at low risk for the same illness and also do not have reliable access to health care may require more intense external cues in order to get screened (Smith, 2021).

### **Self-efficacy**

Self-efficacy was added to the four components of the HBM (i.e. perceived susceptibility, severity, benefits, and barriers) in 1988. Self-efficacy refers to an individual's perception of his or her competence to successfully perform a behaviour. Self-efficacy was added to the HBM in an attempt to better explain individual differences in health behaviors. The model was originally developed in order to explain engagement in one-time health-related behaviors such as being screened for cancer or receiving an immunization. Eventually, the HBM was applied to more substantial, long-term behavior change such as diet modification, exercise, and smoking.

Developers of the model recognized that confidence in one's ability to effect change in outcomes (i.e. self-efficacy) was a key component of health behaviour change (Smith, 2021).

### **Application to Study**

This study will identify the relationship between the perceived benefits of self-care during menstruation and utilize its hygienic measures. According to the health belief model, women are motivated to change health behaviour based on improved knowledge which can prevent illness and improve their health status. Highlighting these benefits in health education will improve outcomes.

### **2.3 Empirical Review**

Wanjiku(2016), conducted research on knowledge, attitude, and practices of menstrual hygiene among adolescent girls between S1-S4 at St Aloysius bwanda secondary school Kalung.The study method was cross-sectional quantitative data involving 188 adolescent girls who were sampled randomly. Data was collected through questionnaires.The purpose of this study was to assess the knowledge, attitude, and practices of menstrual hygiene among adolescent girls between S1- S4 at St Aloysius Bwanda Secondary School Kalungu so as to adopt interventions to promote adequate menstrual hygiene.The study established that the overall level of knowledge of adolescent girls on menstrual hygiene was generally low. This study reveals that adolescent girls had generally negative attitudes towards menstrual hygiene and practices of the adolescent girls towards menstrual hygiene was generally poor.

Akwasi et al(2018), carried out a study titled Assessing the Knowledge, Attitude and Practice of Menstrual Hygiene Management Among Junior High Schools Adolescent Females in the Yendi Municipality in the Northern Region of Ghana. The study method was cross sectional and used quantitative research methods. Semi-structured questionnaires were used to collect data from the female adolescent students aged 10-19 years. A total of 412 female adolescents from 9 basic schools in the Yendi Municipality participated in the study. Students were scored for their level of knowledge, attitude and practices of menstrual hygiene management.The aim of the study was to examine the knowledge, attitudes, and practices of menstrual hygiene management among both premenarcheal and post-menarcheal adolescent students in basic schools in the Yendi Municipality in Ghana. The study found that although awareness of menstruation was universal, the Likert scores showed that 67.5% had adequate knowledge of menstrual hygiene management. About a tenth (13.6%) of the adolescent female students had a positive attitude towards menstrual hygiene management and a third (31.1%) practiced good menstrual hygiene management. He concluded with the findings that more than half of the respondents have adequate knowledge but their awareness and knowledge did not translate to positive attitude towards good menstrual hygiene management practices due to negative socio-cultural norms and practices among others that tend to stigmatize menstruation.

Maryam et al (2016) investigated a study titled Knowledge, Attitude and Practice of Menstrual Hygiene among High Schools Students in Jatinangor This study was conducted to assess the level of knowledge, attitude and practice of menstrual hygiene among high school's students in Jatinangor. This method used was the descriptive cross-sectional study was conducted from May until June 2013 in high schools around Jatinangor. This study population was taken from four schools selected through cluster random sampling from 17 junior and senior high schools available in Jatinangor. Total sampling from four schools was undertaken and a total of 238 female high school students' data were established. The respondents aged between 13–19 years old. The findings made were that, most of the participants in this study have good knowledge, attitude and practice about menstrual hygiene, but a few of them still have poor and moderate knowledge and attitude, although there is no poor practice among them.

Etor et al (2020) conducted a research on Knowledge of Menstrual Hygiene Among Female Secondary School Students in Khana, Rivers State, Nigeria. This study examined knowledge of menstrual hygiene practices among female secondary school students in Khana Local Government Area. The research method used was the descriptive cross-sectional survey design was adopted for the study. The population of the study consisted of female senior secondary school students in Khana Local Government Area. A simple random sampling technique was used to select a sample of two hundred and fifty participants for the study. Data was collected using a semi-structured questionnaire and analyzed using simple frequencies, percentages and chi-square at 0.05level of significance. The finding of this study showed that 55.8% of the population had good knowledge of menstrual hygiene. It revealed that 100% have heard of menstrual cycle. 33.9% of the respondents indicated that the normal duration of a menstrual cycle is 27 days while more than half (66.1%) indicated 28 days. Majority (83.5%) of the Population know their menstrual cycle. The tested hypothesis revealed a significant relationship between the menstrual cycle and practice of menstrual hygiene among female secondary school student. It was concluded that more than half of the respondents had good knowledge of menstruation. However, menstrual cycle influence practice of menstrual hygiene among female secondary school students and recommended that the government of Nigeria in collaboration with its stalk holders should develop and



disseminate reproductive health programmes on menstrual hygiene management targeting both parents and their adolescents.

Zelalem et al(2019) study title Knowledge and menstrual hygiene practice among adolescent school girls in southern Ethiopia. The main objective of this study was to assess the knowledge and menstrual hygiene practice among adolescent school girls in southern Ethiopia. This was an institutional based cross-sectional study conducted at Gedeo zone high schools among 791 randomly selected adolescent girls using multi stage sampling technique. Data were collected using interviewer administered questionnaire. It was concluded that majority of adolescent school girls had poor knowledge regarding menstruation and their hygienic practices are incorrect. Lower age, longer duration of menses flow and poor knowledge towards menstruation were significant correlates of poor hygienic practice. This demonstrates a need to design acceptable awareness creation and advocacy programs to improve the knowledge and promote safe hygienic practice of adolescent school girls during menstruation.

Al Mutairi et al (2021) Concluded a research on Knowledge and practice of self-hygiene during menstruation among female adolescent students in Buraidah city. The aim of this study was to determine the knowledge and practice of adolescent girls towards menstrual hygiene, in Buraidah city. A cross-sectional study was conducted among 258 intermediate school girls in Buraidah city. A semi-structured, self-administered questionnaire was used to collect information on demographics, menstrual history, knowledge about menstruation, hygiene practices, and school absence during menstruation. After the research they concluded that Knowledge and practice toward menstrual hygiene is unsatisfactory. Creating awareness on self-hygiene during menstruation is recommended.

Michael et al (2020) concluded the research on Knowledge and practice of adolescent females about menstruation and menstruation hygiene visiting a public healthcare institute of Quetta, Pakistan. The study is aimed to assess menstruation-related knowledge and practices of adolescent females visiting a public health care institute of Quetta city, Pakistan. A questionnaire-based cross-sectional survey was conducted. 923 female adolescents attending general out-patient departments of Mohtarma Shaheed Benazir Bhutto Hospital Quetta, Balochistan, was approached for data collection. It was concluded with the fact that female adolescents of had certain misconception regarding menstruation because of poor access to health-related education. Education can be provided at healthcare facilities, residential area as well as religious centers. Adolescent reproductive health should be included in the school curriculum; this will influence general reproductive health of females.

Evans et al(2016) study title Relationship between Female University Students' Knowledge on Menstruation and Their Menstrual Hygiene Practices: A Study in Tamale, Ghana. This study therefore assessed the knowledge of female undergraduate students in Schools of Medicine and Allied Health Sciences in the University for Development Studies in Tamale, Ghana, on menstruation and their practice of good menstrual hygiene. The study also assessed factors that could influence the knowledge of these students on menstruation as well as their practice of good menstrual hygiene. The instrument for this study was a semi structured questionnaire. This questionnaire was initially piloted among 20 students which ensured correction of ambiguous and inconsistent questions before it was administered for the actual data collection. The findings from their research was that female university students possessed average knowledge on menstruation but they practiced good menstrual hygiene. There was a positive and significant association between knowledge of students on menstruation and their practice of good menstrual hygiene. Of all the sociodemographic factors, age and course of study of students positively influenced their knowledge about menstruation, while religion and year of study were associated with their practice of safe menstrual hygiene. The mean age at menarche was 13.66 years which means that education on menstruation and menstrual hygiene management should start from upper primary so that females would be well informed on this normal phenomenon before menarche.

Murshida et al(2019) concluded a research on Knowledge of Menstruation and the Practice of Hygiene among Adolescent Girls in Bangladesh. The purpose of this study was to assess knowledge of menstruation and practice of hygiene among adolescent girls in Bangladesh. The descriptive study design used convenient sampling technique 100 adolescent girls were recruited from Girls High School in Dhaka City. Self- structured questionnaire was used. The study illustrated the number of adolescent girls had good knowledge of menstruation and menstrual hygiene practice. Therefore, future study and educational program may be necessary for this type of population. In addition, further research is also demand for factors identifying the knowledge and practice of adolescent with diverse adolescent girls.

Adika et al (2013) did a study on Self-care practices of menstrual hygiene among adolescent's school going girls in Amassoma Community, Bayelsa State. The main objectives for this study are: To determine the self-care practices associated with menstrual hygiene among adolescents in Amassoma community, to determine their perception of menstruation, to determine what factors influence their self-care practice of menstrual hygiene. In this descriptive survey study, 209 adolescent girls were purposefully selected at random from two schools, from a list of schools in Amassoma community. The findings from this study made the researchers to make the following recommendation. 1. Menstrual hygiene and self-care practice guide should be taught by

teachers and easily practicable at home by their parents (mothers), sisters and experienced neighbors with a provision of listenable ears to the adolescents' girls needs to avoid poor health outcome due to poor self-care practices. 2. Menstrual hygiene and self-care practices should be included in the curriculum of secondary school training. 3. Campaigns and seminars to improve adolescent menstrual hygiene and self-care should be organized by teachers and parent's association, as well as health care organization. 4. Sanitary pads should be made available by the government, the office of women affairs and gender matters to all adolescent females, and the need for regular bathing and change of pads should be emphasized by teachers and school health visitors.

Summarily, the literature reviewed both internationally and locally revealed that the knowledge of the adolescent girls on self-care during menstruation is generally low and they have so much misconceptions regarding menstruation. This study will assess and improve the knowledge, attitude and practices of female undergraduate towards self-care during menstruation in Pamo University.

### **Research Design**

A descriptive cross-sectional study is a type of research design in which data will be collected from different individuals at a single point in time. It compares different population groups at a single point in time. In a study carried out by Wanjiku (2016) study titled, knowledge, attitude and practices of menstrual hygiene among adolescent girls between S1-S4 at St Aloysius bwanda secondary school Kalung, the cross-sectional design was used to carry out the research. This design will be adopted and carried out on female students from different departments in the school, on random selection and only those eligible will be part of the study.

### **Area of Study**

The research will be conducted in Pamo University of Medical Sciences (PUMS). The institution is located at No. 1 Tap Road, Off Port Harcourt – Aba Expressway, Elelenwo, in Port Harcourt metropolis, Rivers State. It has amazing scenery, with flowers, trees, and beautiful structures, hostels, academic buildings, and even administrative building. It comprises about three (3) faculties – Clinical Sciences, Allied Health Sciences, and Basic Medical Sciences – and eight (8) departments – Anatomy; Biochemistry; Medical Laboratory Science; Medicine and Surgery; Nursing Science; Pharmacology; Physiology; and Radiography.

### **Population of Study**

The population for this study included the female undergraduates in PAMO University of Medical Sciences, Port Harcourt. The total number of female undergraduates in PUMS is 446.

### **Sampling Technique**

A multi-stage random sampling procedure was used for selecting the participants in this study. This technique was chosen to ensure a fairly equal representation of the variables for the study. The stratification was based on gender, male and female, where the female gender participated in a simple random sampling.

### **Instrument for Data Collection**

The instrument was designed by the researchers. The questionnaire has four (4) sections A, B, C, and D. Section "A" is about the socio-demographic data of the respondents. Section "B" is about the level of knowledge on self-care towards menstruation. Section "C" is about the attitude towards self-care during menstruation. Section "D" is about the practice of self-care during menstruation by the respondents.

### **Reliability of Instrument**

The reliability of the instrument was tested using the test-retest method. 21 copies of the instrument were administered (twice at two week interval) to female undergraduates in the Rivers State University (RSU). The 21 copies of the questionnaire for the pretest were analyzed using the Pearson Product Moment Correlation Coefficient) and a reliability value of 0.8 was obtained.

### **Procedure for Data Collection**

The research explained the aim of the study to the study participants. The participants were informed that their participation was voluntary and that they could withdraw their participation at any point during the survey. They were encouraged to provide honest responses to the questions and assured of confidentiality to any information provided on the questionnaire. The copies of the questionnaire were administered directly to the chosen sample for the study. A total of 232 copies of the questionnaire were administered.

### **Method of Data Analysis**

A descriptive analysis was done, expressing data and results on tables, charts, frequencies, and percentages for dichotomous variables, and as mean with standard deviation (SD) for continuous variables. The percentages were calculated for every outcome. Nonparametric chi-square ( $\chi^2$ ) test was used to assess differences between groups and correlations between variables and the answers were given on the 5-point Likert scale. The results were grouped in different categories from never to rarely, to sometimes, too often, and then to always. The Statistical Package for Social Sciences (SPSS version 22.0) was used for all analyses.

**Ethical consideration**

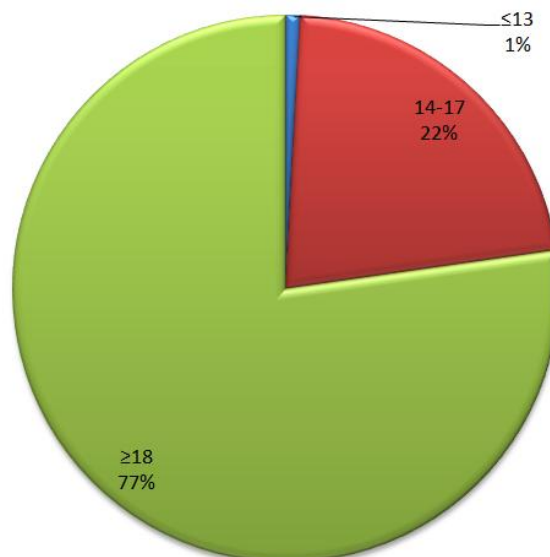
The purpose of the research was explained to the prospective respondents and informed consent was obtained after assurances that whatever information they provide will be used strictly for academic purposes and would be kept confidential.

**Socio-Demographic Distribution**

The socio-demographic profile of respondents was age, department, level of study, and religion (see **Table 4.1**). There were 2 (0.9%) out of 232 respondents were aged  $\leq 13$  years, while 50 (21.9%) and 180 (77.3%) were aged between 14 and 17 years, 18 years and above respectively. Twenty (8.6%) respondents are in anatomy department, 14 (6.4%) are in biochemistry, while 34 (14.6%), 83 (35.6%), 39 (16.7%), 27 (11.6%), 9 (3.9%) and 6 (2.6%) are in medical laboratory science, medicine & surgery, nursing sciences, pharmacology, physiology and radiography respectively. Again, 30 (13.3%) out of 232 respondents were Catholic, 55 (23.6%) were Anglican, while 138 (59.2%), 2 (0.9%) and 7 (3.0%) were Pentecostal, Muslim and others respectively. Thirty-four (14.6%) respondents are in 100 level of study, 78 (33.5%) are in 200L, while 70 (30.0%) and 50 (21.9%) are in 300L and 400L respectively.

**Table 4.1: Socio-Demographic Distribution**

Variables (n=233)	Categories	Frequency	Percentage (%)
Age (Years)	$\leq 13$	2	0.90
	14-17	50	21.9
	$\geq 18$	180	77.3
Department	Anatomy	20	8.60
	Biochemistry	14	6.40
	Medical Lab. Science	34	14.6
	Medicine & Surgery	83	35.6
	Nursing Sciences	39	16.7
	Pharmacology	27	11.6
	Physiology	9	3.90
	Radiography	6	2.60
Level of Study	100	34	14.6
	200	78	33.5
	300	70	30.0
	400	50	21.9
Religion	Catholic	30	13.3
	Anglican	55	23.6
	Pentecostal	138	59.2
	Muslim	2	0.90
	Others	7	3.00



**Figure 4.1: Pie-Chart of Respondents' Age (years) Distribution**

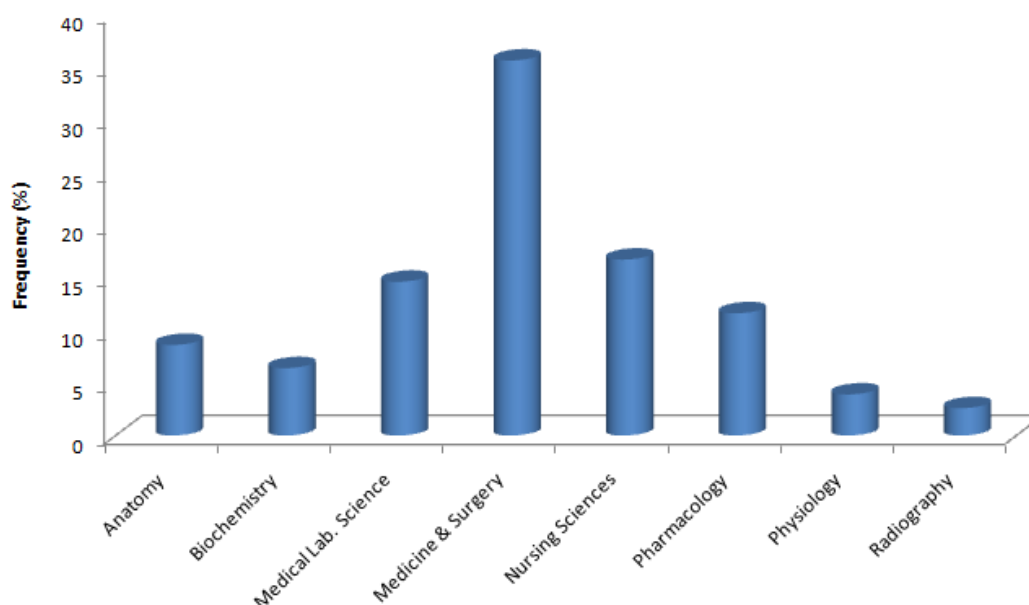


Figure 4.2: Bar-Chart of Department Distribution

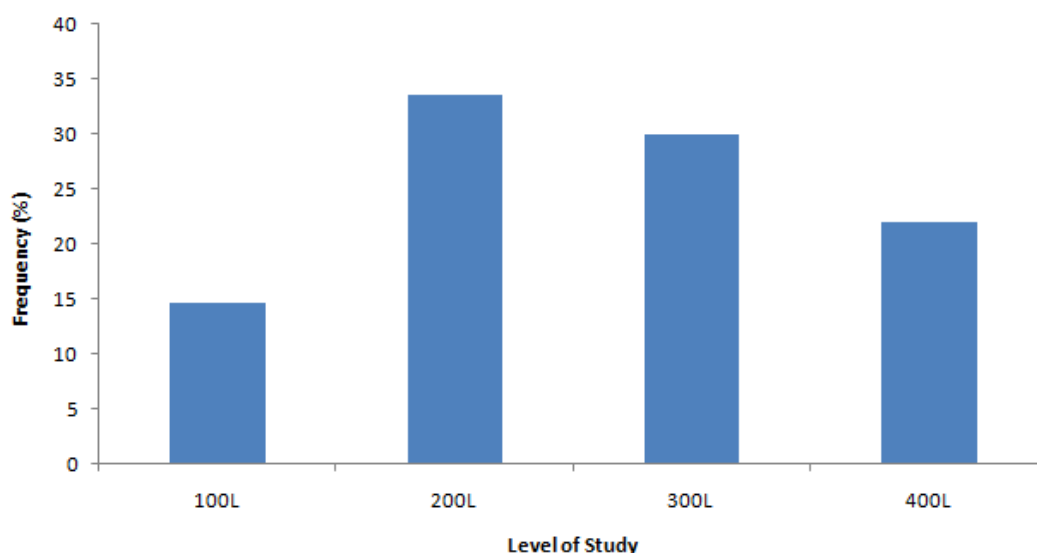


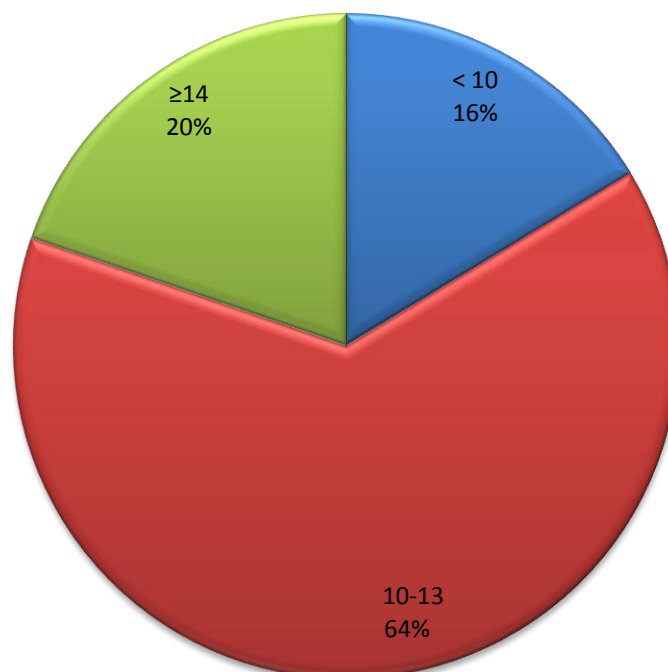
Figure 4.3: Bar-Chart of Level of Study Distribution

Thirty-eight (16.3%) out of 232 respondents specified that they experienced their menarche at the age of less than 10 years; while 148 (63.9%) and 46 (19.7%) had experienced their menarche at the age between 10 -13 years and 14 years and above respectively. One hundred and nine (81.1%) respondents live with their biological parents; while 40 (17.2%) and 3 (1.7%) lived with guardians and foster parents respectively. Also, 225 (97%) respondents opined that their mothers are literate and 7 (3.0%) are illiterates. Two hundred and twenty-nine (98.7%) said their family is capable of providing them with sanitary pads and 3 (1.3%) responded no (see Table 4.2).

Table 4.2: Family Information/ Experience

Variables (n=233)	Categories	Frequency	Percentage (%)
At what age did you experience your menarche? (Year)	< 10	38	16.3
	10-13	148	63.9
	≥14	46	19.7
Who do you live with?	Biological Parents	189	81.1

	Guardians	40	17.2
	Foster Parents	3	1.70
What is the education status of your mother?	Literate	225	97.0
	Illiterate	7	3.00
Is your family capable of providing you with sanitary pads?	Yes	229	98.7
	No	3	1.30



**Figure 4.4: Menarche Experience in Age (Year)**

#### **4.2 Level of knowledge on self-care toward menstruation?**

This study revealed that of the 232 respondents, 227 (97.9%) opined that the natural or physiological body is the cause of menstruation; while 4 (1.7%) and 1 (0.4%) said it was disease and others respectively. Nine (3.9%) respondents opted that menstrual blood comes from abdomen; while 83 (35.6%), 138 (59.7%) and 2 (0.9%) said urethra/vagina, uterus and others respectively. Apparently, 112 (48.1%) respondents opined that the duration of a normal period was 2-4 days and 120 (52.0%) said 5-7days. Again, 225 (97.0%) respondents have heard of the menstrual cycle; while 7 (3.0%) have not. One hundred and fifty-eight (67.8%) respondents know how to calculate their menstrual cycle; while 75 (32.2) do not. Of the 232 respondents, 10 (4.3%) have heard of products like tampons only; while 113 (48.9%) and 1 (0.4%) have heard of disposable sanitary pads and menstrual cups respectively. However, 41 (17.6%) have heard of tampon and disposable sanitary pad; 27 (11.6%) tampon, disposable sanitary pad and menstrual cup; 28 (12.0%) tampon, disposable sanitary pad, menstrual cup and reusable pad; 3 (1.3%) tampon, disposable sanitary pad and reusable pad; 3 (1.3%) disposable sanitary pad and menstrual cup. Nine (3.9%) respondents reported that any type of cloth available is the ideal material used during menstruation but 220 (94.8%) opined ready-made sanitary pads and 2 (1.3%) said others. Two hundred and twelve (91.4%) respondents said they have heard about menstruation before they started having their periods and 20 (8.6%) said not at all. Consequently, of the 232 respondents, 104 (45.1%) opined that their source of information on self-care during menstruation is their mother only; while 1 (0.4%) mother, sister and peers; 3 (1.3%) mother and sister; 15 (6.4%) mother, sister, peers and school; 7 (3.0%) mother, sister and school; 3 (1.3%) mother and peers; 4 (1.7%) mother, peers and school; 14 (6.0%) mother and school; 21 (9.0%) sister only; 3 (1.3%) sister and peers; 2 (0.9%) sister, peers and school; 1 (0.4%) sister and school; 6 (2.6%) and 48 (20.6%) are only peers and school respectively. Fifty-eight (24.9%) and 174 (75.1%) respondents opined that controlling blood and effective management and care of oneself are the self-care during menstruation.

**Table 4.3: Knowledge on self-care towards menstruation**

S/N	Items	Scale	Frequency	Percentage (%)
9	What is the cause of menstruation?	Natural or Physiological Body	227	97.9
		Disease	4	1.7
		Others	1	0.4
10	From which organ does menstrual blood come from?	Abdomen	9	3.9
		Urethra/Vagina	83	35.6
		Uterus	138	59.7
		Others	2	0.9
11	What is the duration of a normal period?	2-4 Days	112	48.1
		5-7 Days	120	52.0
12	Have you ever heard of the menstrual cycle?	Yes	225	97.0
		No	7	3.0
13	Do you know how to calculate your menstrual cycle?	Yes	158	67.8
		No	75	32.2
14	Which of these products have you heard of?	Tampon	10	4.3
		tampon and disposable sanitary pad	41	17.6
		tampon, disposable sanitary pad and menstrual cup	27	11.6
		tampon, disposable sanitary pad, menstrual cup and reusable pad	34	14.6
		tampon, disposable sanitary pad and reusable pad	3	1.3
		Disposable Sanitary Pad	113	48.9
		disposable sanitary pad and menstrual cup	3	1.3
		Menstrual Cup	1	0.4
15	What is the ideal material used during menstruation?	Any Type of Cloth Available	9	3.9
		Ready Made Sanitary Pads	220	94.8
		Others	3	1.3
16	Have you ever heard about menstruation before you started having your periods?	Yes	212	91.4
		No	20	8.6
17	What is your source of information on self-care during menstruation? (n=233)	Mother	104	45.1
		mother, sister and peers	1	0.4
		mother and sister	3	1.3
		mother, sister, peers and school	15	6.4
		mother, sister and school	7	3
		mother and peers	3	1.3
		mother, peers and school	4	1.7
		mother and school	14	6
		Sister	21	9
		sister and school	3	1.3
		sister, peers and school	2	0.9
		sister and school	1	0.4
		Peers	6	2.6
School	48	20.6		
18	What is self-care during menstruation?	Controlling Blood During Menstruation	58	24.9
		Effective Management and Care of Oneself During Menstruation	174	75.1

### Attitude of undergraduates towards menstruation?

This study revealed that 22(9.4%) respondents opined that there are traditional beliefs that influence their menstrual hygiene and 210 (90.6%) thinks contrary. Seven-eight (33.5%) respondents have comfortable perception regarding sanitary napkins (advantages); while 61 (26.2%), 4 (2.1%) and 89 (38.2%) have adequate absorption; do not stain cloths and no idea respectively. The disadvantages regarding sanitary napkins are expensive 100 (43.3%), not available 9 (3.9%) and no idea 123 (52.8%). Apparently, 41 (17.6%) opined that they have encountered stigma as a result of menstruation and 191 (82.4%) said the opposite. Forty-four (18.9%) respondents opted that there are bad words, terms, or phrases used to describe girls who are menstruating at school but 189 (81.1%) had contrary views. Also, 44 (18.5%) respondent opined that at school they are treated differently if others know they are menstruating and 188 (81.5%) have no such experiences. Respondents opined that at school they get any of the following advantages while menstruating which are rest from regular school work 20 (8.6%), leave school early 7 (3.0%), respect from others 15 (6.4%) and no advantage 190 (82.0%). Apparently, 207 (89.3%) respondents opined that they have sometime had their period while at school and 25 (10.7%) said they have not. Of the 208 respondents who have sometime had their menstruation while at school, 8 (3.8%) feel excited, 40 (19.7%) fear & confused, 134 (64.4%) stressed and 25 (12.0%) ashamed and embarrassed.

**Table 4.4: Attitude of Undergraduates towards Menstruation.**

S/N	Items	Scale	Frequency	Percentage (%)
19	Are there any traditional beliefs that influence your menstrual hygiene?	Yes	22	9.4
		No	210	90.6
20	What is your perception regarding sanitary napkins (advantages)?	Comfortable	78	33.5
		Adequate Absorption	61	26.2
		Do Not Stain Cloths	4	2.1
		No Idea	89	38.2
		Expensive	100	43.3
21	What is your perception regarding sanitary napkins (disadvantages)?	Not Available	9	3.9
		No Idea	123	52.8
		Yes	41	17.6
22	Have you ever encountered stigma as a result of menstruation?	No	191	82.4
		Yes	41	17.6
23	Are there bad words, terms, or phrases used to describe girls who are menstruating at school?	Yes	43	18.9
		No	189	81.1
24	At school are you treated differently if they know you are menstruating?	Yes	44	18.5
		No	188	81.5
25	At school, do you get any of the following advantages while menstruating?	Rest from Regular School Work	20	8.6
		Leave School Early	7	3
		Respect from Others	15	6.4
		No Advantage	190	82
26	Have you ever had your period while at school?	Yes	207	89.3
		No	25	10.7
27	If yes, how did you feel?	Excited	8	3.8
		Fear & Confusion	40	19.7
		Stressed	134	64.4
		Ashamed and Embarrassed	25	12.0

#### 4.4. Self-care practices carried out during menstruation

Results from this study shows that the type of sanitary material used during their period are 6 (2.6%) cloth, 22 (9.4%), 204 (87.6%) sanitary pad and 1 (0.4%) other. One hundred and seventy-six (75.5%) respondents opined that they change their absorbents while at school and 57 (24.5%) said they do not. Also, 9 (3.9%) opined to reuse sanitary cloths, while 224 (96.1%) said they do not. Of those who reuse sanitary cloths, 1

(0.4%) uses plain water to wash sanitary cloth, while 2 (0.9%) lukewarm water, 5 (2.1%) soap & water and 1 (0.4%) antiseptics. Fifty-two (22.3%) respondents use plain water to clean genital area, while 145 (62.2%) lukewarm water, 32 (13.7%) soap & water and 4 (1.7%) antiseptics. Apparently, 180 (77.3%) respondents often change their sanitary pad 6-8hourly and 53 (22.7%) 10-12 hourly. Thirty-eight (16.3%) dispose sanitary material by burning, while 181 (77.7%) throw it in routine water and 14 (6.0%) others. Finally, all respondents 233 (100%) opined they wash their hands after changing sanitary material.

**Table 4.5: Self-Care Practices carried out during Menstruation**

S/N	Items	Scale	Frequency	Percentage (%)
28	Type of sanitary material used during your period?	Cloth	6	2.6
		Tampon	22	9.4
		Sanitary Pad	204	87.6
		Others	1	0.4
29	Do you change your absorbents while at school?	Yes	176	75.5
		No	57	24.5
30	Do you reuse sanitary cloths?	Yes	9	3.9
		No	224	96.1
31	What do you use to wash the sanitary cloth?	Plain Water	1	0.4
		Luke Warm water	2	0.9
		Soap & Water	5	2.1
		Antiseptics	1	0.4
32	What do you use to clean the genital area?	Plain Water	52	22.3
		Luke Warm water	145	62.2
		Soap & Water	32	13.7
		Antiseptics	4	1.7
33	How often do you change your sanitary pad?	6-8 Hourly	180	77.3
		10-12 Hourly	53	22.7
34	How do you dispose sanitary material?	Burn-it	38	16.3
		Throw It in Routine Water	181	77.7
		Others	14	6
35	Do you wash your hands after changing sanitary material?	Yes	233	100

### III. DISCUSSION OF FINDINGS

#### **Knowledge of self-care during menstruation among female undergraduates**

The study revealed a high level of knowledge of self-care during menstruation among female undergraduates. 97% of the females had their mothers as a source of information. These findings are in line with a study by Carlson, (2014) who reported that the first informant was the mother in 52.5% of the subjects. This will go a long way in maintaining a healthy reproductive tract for each and every girl child who, after she becomes a mother, percolates the healthy message to her female offspring. A high percentage of 228(97.9%) of the girls knew correctly that menstruation is a physiological process. The explanation of this observation could be due to the fact that the girls had accurate and timely information on menstrual hygiene, with the majority of mothers, peers, and school being their informants; however, mothers and peers lack the necessary knowledge about biological changes as the body reaches puberty. This finding is in line with Sommer, (2010). Just a little percentages of 139(59.7%) of the participants were aware that menstrual bleeding came from the uterus.

Most of the adolescents 226(97.0%) were acquainted with the menstrual cycle and duration of menstrual bleeding 121(52.0%). This could be related to the perceived knowledge attained from peers and other sources of information. However, this finding is at variance with Carlson et al, (2011), which showed that there is a significant gap in the knowledge on menstruation among adolescent girls where the girls had low levels of awareness about menstruation as regards to the menstrual cycle. However, this means that the girls had greater awareness of the menstrual cycle.

It was evident that a higher percentage of 222(94.0%)female undergraduates have heard of the disposable sanitary pads, the awareness of sanitary pads is higher, which is possibly due to the interplay of the number of factors like availability, accessibility, cost, exposure to mass media, local customs as well as storage and disposal issues. The study findings are in line with KounteyaSinha, (2011).



### **Attitude of female undergraduates towards menstruation.**

The study revealed that female undergraduates had a good attitude towards menstruation. A percentage of 22(9.4%) girls had traditional beliefs influencing their attitude toward menstrual hygiene, while 90.6% had a contrary thought.

### **Practices of self-care towards menstruation among female undergraduates.**

Results from this study revealed that the type of sanitary material used during their period are sanitary pads (87.6%) and (75.5%) changing their absorbents while at school. Also, reusing sanitary clothes are not practiced (96.1%) and often change sanitary pads 6-8 hourly (77.3%) with regular washing of hands after changing sanitary material.

### **Implications of Findings to Nursing**

Health workers need to increase awareness of menstrual hygiene among adolescent girls, especially in schools through continuous outreach programs. Their interaction with women, teachers, parents, and adolescents will improve menstrual hygiene in schools.

## **IV. Summary**

The research is on Knowledge, Attitude, and Practice of self-care during menstruation by female undergraduates in Pamo University, Port Harcourt, Rivers State. The primary purpose of the study is to assess the level of knowledge of self-care during menstruation, examine the attitude, and identify the practices of female undergraduates towards self-care during menstruation. A descriptive study design was used for the study. A structured questionnaire was developed according to the objectives of the study to guide the generation of information. Research questions were analyzed using simple frequency and percentage. Results revealed that the majority of respondents are knowledgeable about self-care during menstruation and the majority have a positive attitude and hygienic practices during menstruation.

## **V. Conclusion**

The study shows that menstrual hygiene among adolescent girls is not so much of a challenge as most of the respondents are undergraduates and have basic knowledge of menstrual hygiene. The study established that the overall level of knowledge of the female undergraduates on self-care during menstruation was excellent. This study reveals that the majority of female undergraduates had a generally positive attitude toward menstrual hygiene. The attitudes of the girls were not influenced by beliefs and taboos about menstruation, perceptions of menstruation, and stigma and discrimination. Practices of the female undergraduate towards self-care during menstruation were excellent as it was evident that a large proportion of the adolescent girls practiced safe practices during menstruation.

Based on the data and findings, it was concluded that 97.9% of respondents had good knowledge of menstruation.

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