KNOWLEDGE AND EXPERIENCE OF DYSMENORRHOEA AMONG HEARING IMPAIRED SECONDARY SCHOOL GIRLS IN IBADAN, OYO STATE, NIGERIA

BY

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ABSTRACT

Adolescents and young people with disabilities generally face various forms of challenges in accessing health care than their abled peers. Many medical health practitioners have not seen dysmenorrhoea as a public health issue which can expose the hearing impaired young adolescence to some risky behaviours. The experience of dysmenorrhea by the hearing impaired girls who form a colossal chunk of the disabled has not been adequately explored and documented in Nigeria. Hence, this study assessed the knowledge and experience of dysmenorrhea among hearing impaired secondary school girls in Ibadan.

This cross-sectional study was conducted among 112 in-school deaf girls selected from all the three special schools in Ibadan metropolis using a combination of convenience and total sampling methods. Three interviewers who were experts in the use of sign language assisted in the data collection. Data on socio-demographic characteristics, knowledge, perception, experience and coping mechanism of dysmenorrhea were collected using a pretested interviewer administered questionnaire in sign language. The knowledge of dysmenorrhea was assessed using a 10-point scale and scores were categorized as good (≥5) points and poor (<5) points. The data were analysed using descriptive statistics and Chi square test at $p \leq 0.05$ level of significance.

Mean age of the studied participants was 15.5±3.0 years, the mean age at menarche was 12.7±1.4 years. Eighty-three respondents (74.1%) had poor knowledge about dysmenorrhea. The mean knowledge score was 3.7±1.5. About 64.3% of the respondents had ever experienced dysmenorrhea. Ninety-one respondents (82.2%) had negative perception about dysmenorrhea. About 50.0% of the respondents believed that dysmenorrhea is normal for all women of reproductive ages, 59.8% believed that dysmenorrhea is an important health concern for women while 26.8% opined that dysmenorrhea is a spiritual attack. Signs and symptoms of dysmenorrhea reported included headache (81.9%), gluttony (72.2%), stomach discomfort (68.1%), feeling unhappy (66.7%), over sleeping (66.7%), pimples on the face (63.9%) and waist pain (63.9%). The most preferred medication for dysmenorrhea was paracetamol (73.6%) and herbs (55.6%). The most cited mechanisms for coping with

dysmenorrhea were physical exercise (84.7%) and drinking of hot tea, water and herbs (80.6%). There was no was significant association between respondents' characteristics and the prevalence and knowledge of dysmenorrhea ($p>0.05$).

The prevalence of dysmenorrhea was high among hearing impaired secondary school girls in Ibadan. The respondents had poor knowledge about dysmenorrhoea and many had ever experienced dysmenorrhoea. Hence, sensitization and preventive interventions targeting hearing impaired girls to ameliorate the situation is imperative.

Key words: Hearing impaired, dysmenorrhea, menstrual cycle, pain, Secondary school girls
Word count: 400

DEDICATION

This work is dedicated to God Almighty my creator and the source of my inspiration, wisdom, knowledge and understanding. He has been the source of my strength and only on his wings have i soared.

I also dedicate this work to my dear husband Izuoma Audrey Friday and my parents who encouraged and supported me on this quest, and to my children for their kind understanding. My love for you cannot be quantified. God bless you all.

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CERTIFICATION

This is to certify that this study was carried out by OBASI, Blessing Chinazaekpere in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria under my supervision.

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ABBREVIATIONS

CDR:	Crude Disability Rate
PD:	Primary Dysmenorrhea
PMDD:	Premenstrual Dysphonic Disorder
NAD:	National Association for the Deaf
NPC:	National Population Commission
NSAIDs:	Non-Steroidal Anti-Inflammatory Drugs
SD:	Secondary Dysmenorrhea
SDGs:	Sustainable Development Goals
WHO:	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background

Menstruation is a natural phenomenon that occurs throughout the reproductive years of every woman. Most females experience some degree of pain and discomfort during their menstrual periods which could have significant impacts on their daily activities and disturb their productivity at home or work place (Baghianimoghadam, Loo, Falahzadeh and Alavijeh, 2012).

Dysmenorrhea is one of the most common gynecological disorders among adolescent girls. The syndrome of dysmenorrhea is known to encompass a wide variety of physical (and affective) symptoms (Twigg, 2002; Emans, Laufer and Goldstein, 2005; Allen and Lam, 2012). The two broad categories of dysmenorrhea are the primary and secondary dysmenorrhea. Primary Dysmenorrhea (PD) is defined as recurrent, crampy pain occurring with menses in the absence of identifiable pelvic pathology. It is unusual for symptoms to start within the first six months after menarche (Coco 1999). Secondary Dysmenorrhea (SD) is menstrual pain associated with an underlying pelvic pathology such as endometriosis, pelvic inflammatory disease, congenital müllerian anomalies and ovarian cysts. Its onset may be many years after the onset of menarche (Twigg, 2002).

The prevalence of menstrual pain or dysmenorrhea among adolescents and young adults continues to be high globally. The prevalence of dysmenorrhea among adolescents ranges between 45 and 80% in Nigeria and other countries. (Loto, 2008; Okusanya, 2009; Agarwal and Agarwal, 2010; Yasir, 2014; Amu and Bamidele, 2014).

The consequences of dysmenorrhoea may include impaired quality of personal and social life, mood disorders, sleep disturbance and limitation of usual daily activities (Emans 2005; Allen and Lam 2012). Severe dysmenorrhea may result in absenteeism from school, inability to cope with daily activities (Allen and Lam, 2012; Mrugacz, Grygoruk, Sieczyński, Grusza, Bołkun and Pietrewicz, 2013). In line with the Sustainable Development Goals 5 (SDGs), females should be given quality education so that they can have better quality of life and be empowered to contribute effectively during adulthood (United Nations, 2015).

Previous studies in Nigeria revealed that school adolescents' girls have a knowledge deficit regarding deficit about menstruation and dysmenorrhoea (Ogunfowokan and Babatunde, 2010). Similarly, findings of a study among university students in Gilan showed an abysmal knowledge and practice of dysmenorrhoea (Panadhande, Pakzad and Ashoori, 2008).

Adolescents and young people with disabilities are faced with greater challenges because of their impairments (Anthony, 2001; Sangowawa et al., 2009; Arulogun, Titiloye, Afolabi, Oyewole and Nwaorgu, 2013). About 360 million people in the world suffer from hearing loss. Majority of them are from low or middle-income countries (WHO, 2013). In Sub-Saharan African, about 1.9% of the children have disabling hearing loss, while in adult males and females it is 7.8% and 5.5% respectively (WHO, 2012).

Studies have been conducted on dysmenorrhea among female students in Nigeria (Okusanya, Garba, Okome and Ohiosimuan 2009; Amu and Bamidele, 2014). However, there is dearth of information on the experience of dysmenorrhea among deaf secondary school students in Nigeria. In view of this, the study explored the knowledge and prevalence of dysmenorrhea among hearing impaired secondary school girls in Ibadan.

1.2 Problem Statement

Adolescence is a stage of physical, mental, psychosocial, and sexual development and maturation during which the individual refines sex roles, self-concept and relationships with persons of same or opposite sex (Sahli et al., 2009). Sexual and reproductive health issues are important aspects of this developmental process (Slap et al., 2003).

In many societies including Nigeria, menstruation is not openly discussed leading to lack of attention on the issues about menstruation. There is an unspoken 'culture of silence' with regard to menstruation among young girls. Many girls find difficult to discuss menstrual issues with their mothers and certainly not with their fathers leading to limited information about menstruation. Therefore, menstruation becomes something to be ashamed of and to hide, and is ignored in families, schools and communities (Adinma and Adinma 2008; Burgers and Lhlungpa 2008; Caruso et al., 2012). Consequently, there is substantial gap in the knowledge of menstruation among adolescent girls that ensure good management of menstruation.

Dysmenorrhoea is a common public health issue which affects the health of adolescents. It is at the adolescent years that the pains associated with dysmenorrhoea reaches its peak.

The dysmenorrhoea pains negatively affect the cognitive and psychosocial development of adolescents (Brown et al., (2017).

According to statistics from the World Health Organization, roughly 360 million people worldwide are hearing impaired or hard of hearing (WHO, 2013). People who are deaf or hard of hearing are less likely to have access to sex education, STI prevention, and care services. They are more at risk for infection due to the stress of marginalization, extreme poverty, sexual exploitation and illiteracy. People with disabilities have less access to socio-cultural support and more risk for negative sexual health outcomes (UNAIDS, 2014).

Facilities available for catering for these children are grossly inadequate. Not only do they have less access to education they often face other forms of discrimination and eventually have fewer opportunities for gainful existence than their hearing counterparts (Anthony 2001). In addition, there are many misconceptions about their sexuality as it is sometimes assumed that persons with disabilities are asexual and consequently do not require education about their sexuality (Esmail et al., 2010). As a result, inadequate attention is often given to address their reproductive health needs.

This research tends to fill in this gap because it is a public health issue which affects the quality of life of the hearing impaired young adolescence which they may not be able to reveal because of their condition. Moreover, many medical health practitioners have not seen dysmenorrhoea as a public health issue which can expose the hearing impaired young adolescence to some risky behaviours mentioned above.

1.3 Justification

Finding from this study will enable policy makers to plan school health programmes and health promotional activities to include sexuality, menstrual education and proper management of menstrual problems among hearing impaired secondary school girls. This will enable young hearing impaired girls to manage their menstruation in order to improve their wellbeing and optimal functioning during menstruation.

The result of this study will be communicated to parents and members of the society to discourage those beliefs, misconceptions and taboos that jeopardize the health and well-being of these girls. It will expose them on the need to discuss issues relating to adolescent's sexuality, reproductive health and menstrual problems and where to get help.

Furthermore, educational administrators will see the need to expand information on menstruation to include biological processes, what to do or expect when they start menstruating and some common health problems and management.

1.4 Research questions

1. What is the level of knowledge on dysmenorrhoea among hearing impaired secondary school girls?
2. What are the experiences of dysmenorrhoea among hearing impaired secondary school girls?
3. What are the coping mechanisms for dysmenorrhoea among hearing impaired secondary school girls?
4. What are the perceived effects of dysmenorrhoea among hearing impaired secondary school girls?

1.5 Objectives

1.5.1 Broad Objective

The broad objective of this study was to investigate the knowledge and experience of dysmenorrhoea among d hearing impaired secondary school girls in Ibadan, Oyo state, Nigeria

1.5.2 Specific objectives

The specific objectives of the study were to:

1. Assess the knowledge of dysmenorrhoea among hearing impaired secondary school girls.
2. Determine the experience of dysmenorrhoea among hearing impaired secondary school girls
3. Assess the coping mechanism for dysmenorrhoea among hearing impaired secondary school girls
4. Determine the perceived effects of dysmenorrhoea among hearing impaired secondary school girls.

1.6 Research Hypothesis

The study tested the following null hypothesis:

1. There is no association between the knowledge of dysmenorrhoea and age of respondents
2. There is no association between the knowledge of dysmenorrhoea and age at menarche
3. There is no association between respondent's perception about dysmenorrhoea and age of respondents
4. There is no association between respondent's perception about dysmenorrhoea and age at menarche

1.7 Operational Definition

Dysmenorrhea: Dysmenorrhea is the medical term for menstrual cramps, which are caused by uterine contractions (Cleveland Clinic, 2018).

Primary Dysmenorrhea: Primary Dysmenorrhea is defined as painful menses with cramping sensation in the lower abdomen that is often accompanied by other symptoms, such as sweating, headache, nausea, vomiting, diarrhoea, and tremulousness (Vincenzo De Sanctis et al., 2015).

Secondary dysmenorrhea: Secondary dysmenorrhea is pain that is caused by a disorder in the woman's reproductive organs, such as endometriosis, adenomyosis, uterine fibroids, or infection. Pain from secondary dysmenorrhea usually begins earlier in the menstrual cycle and lasts longer than common menstrual cramps (Cleveland Clinic, 2018).

Deaf: The Deaf are individual with very little or no functional hearing and who often uses sign language to communicate (National Technical Institute for the Deaf, 2018).

Hard of Hearing: Hard of Hearing refers to individuals who has a mild-to-moderate hearing loss who may communicate through sign language, spoken language, or both (National Technical Institute for the Deaf, 2018).

CHAPTER TWO

LITERATURE REVIEW

2.1 Deafness

The term “deaf” is often mistakenly used to refer to all individuals with hearing difficulties, the word "deaf" usually refers to an individual with very little or no functional hearing and who often uses sign language to communicate. Hard of Hearing refers to an individual who has a mild-to-moderate hearing loss who may communicate through sign language, spoken language, or both (National Technical Institute for the Deaf, 2018). Hearing Impaired**,** used to describe an individual with any degree of hearing loss, is a term offensive to many deaf and hard-of-hearing individuals. They consider the terms "deaf" and "hard of hearing" to be more positive. Although it is true that their hearing is not perfect, they prefer not to be labeled "impaired" as people (National Technical Institute for the Deaf, 2018).

Many advocates believe that recognition by the hearing public that a deaf culture exists is a crucial first step toward educating the Nation about the needs of the deaf and hard of hearing. it is thought that people who are deaf are less kind, less communicative, and less confident than people without a sensory disability (Willis, 2011). Overall, two major stereotypes are typically applied to individuals who are deaf, that they are non-sociable and less intelligent. As one’s self perception is influenced by the attitudes and acceptance of significant individuals in one’s environment and society as a whole, it can be inferred that stereotypes of low intelligence and sociability impact a deaf person’s self-concept (Willis, 2011).

2.2 Adolescent deaf

It is often assumed that adolescence is a very ‘‘difficult’’ period of life, with adolescents being highly stressed and moody. It is further assumed that adolescents are under stress because they have to cope with enormous changes in their lives. Some of these changes are in sexual behaviour following puberty (Rostami, Bahmani, Bakhtyari and Movallali 2014). There are also large social changes, with adolescents spending much more time with others of the same age and much less time with their parents than they did when they were younger. Adolescence is also a time at which decisions need to be made about the future. In addition to these difficulties, in this tough period, having a hearing disorder would make it even harder and problematic. In deed deaf adolescents are more worried than their peers (Sahli, Arslan and Belgin 2009).

According to researches deaf adolescent girls can feel excluded and isolated by the hearing world which affects their ability to acquire fundamental social skills for later life which may cause self-esteem. A range of factors such as communication method, parents' communication competence and school type (residential versus mainstream) have been reported as risk factors specific to deaf adolescent girls when it comes to menstrual pain or dysmenorrhea (Greydanus et al., 2002). Communication barriers often make it difficult for deaf adolescent girls to even discuss their symptoms of dysmenorrhea with parent and other health care providers. On the other hand, deaf adolescent girls are more likely to have difficulty in disclosing abuse. They may have no language to describe their experiences and their distress because adults in their lives may not understand them if they have no common communication (Greydanus et al., 2002).

Unfortunately, the deaf adolescent's adult's feelings and experiences are intensified by communication barriers and by isolation from family and peers. Membership in the deaf culture increases a sense of belonging and social support of peers, this may ultimately be the resource that helps a deaf individual through his or her lifetime (Greydanus et al., 2002). The communication difficulties of these deaf people increase depressive symptoms. The key risk factors are developmental delays associated with early communication deprivation. It seems to be related to the quality of life and sense of well-being and happiness of the deaf with their communication and interaction with hearing population and especially the deaf in the school age and adolescence (Rostami et al., 2014).

Communication barriers and low ability to express demands and needs, may lead to give up interests and activities and this make them be at risk for mental health problems especially depression. Studies have found that deaf individuals have higher rates of psychiatric disorder than those who are hearing, at the same time they encounter difficulties in accessing mental health services too. Many deaf adolescents confront everyday challenges as they navigate in a hearing world where ignorance and misconceptions frequently lead to access issues that may affect social-emotional wellbeing (Rostami et al., 2014).

Typically, secondary schools and colleges are safe place to explore ideas, opportunities, and lifestyles, and offers increased opportunities for self-governance and individuation from parents (Cullaty 2011). The estimated number of students with a hearing loss who attend college is approximately 45% (Schroedel et al., 2005). The estimates of those

numbers that actually graduate, however, are one out of every four This lack of retention can be attributed to academic reasons and non-academic reasons, such as social integration issues (Schroedel et al., 2005).

The significantly higher loneliness ratings by deaf college students are a reflection of their different lifestyle experience. The supposition is that deaf individuals have an experience of this world that is neither better nor worse than that of a hearing person in world of life (Seamon, 2015)

Coping is an interactive process that is affected by situational, social support, and personal characteristics. In addition, one's perceptions of coping resources do not necessarily translate into coping outcomes. Perhaps, the participants in this study did not have a realistic insight into their ability to cope (Rostami et al., 2014).

2.3 Concept of Menstruation

Menstruation is a cyclic uterine bleeding in response to cyclic hormonal changes (Mihm et al., 2011). Menstruation is the normal, healthy shedding of blood and tissue from the uterus that exits the body through the vagina (Burgers and Lhalungpa 2008). Menstruation is a periodic uterine bleeding through the vagina that occurs with the shedding of the uterine mucosa that signifies one of the signs of puberty, and occurs one or two years following the appearance of secondary sexual characteristics (Lawan et al., 2010).

Menstruation occurs when the ovum is not fertilized and begins about 14 days after ovulation in a 28 cycle. The menstrual discharge also referred to as the menses, or menstrual flow, is composed of blood mixed with fluid, cervical and vaginal secretions, bacteria, mucus, leucocytes, and other cellular debris. The menstrual discharge is dark and has a distinctive odour (Moore et al., 2011).

Menstrual parameters vary greatly among individuals. Generally, menstruation occurs every 28 days plus or minus 5 to 10 days (Hilborn et al., 2013). Emotional and physical factors such as illness, excessive fatigue, stress or anxiety and vigorous exercise can alter the cycle interval (Kaplan, 2013). Certain environmental factors such as temperature and altitude may also affect the cycle. The duration of menses is from 2-8 days with the blood loss averaging 30 to 80ml and the loss of iron averaging 0.5 to 1mg daily (Centre for Menstrual Cycle and Ovulation Research, 2018).

2.3.1 Menstrual Cycle

Menstrual Cycle occurs in four phases; menstrual, proliferative, secretory and Ischaemic phases. 1. **Menstrual Phase:** Menstruation occurs during the menstrual phase, some endometrial areas are shed, while others remain. Some of the remaining tips of the endometrial glands begin to regenerate. The endometrium remains in a resting state following menstruation. Oestrogen levels are low; the endometrium is 1 to 2 mm deep. During this part of the cycle, the cervical mucosa is scanty, viscous and opaque (Cheng and Bostwick, 2011).

2. The proliferative phase

The phase begins when the endometrial glands enlarge, becoming twisted and longer in response to increasing amounts of oestrogen. The blood vessels become prominent and dilated, the endometrium increases in thickness six to eight folds. This gradual process reaches its peak just before ovulation. (Centre for Menstrual Cycle and Ovulation Research, 2018).

3. The Secretory Phases

This phase follows ovulation. The endometrium, under oestrogenic influence, undergoes slight cellular growth. Progesterone, however causes such marked swelling and growth that the epithelium is wrapped into folds (Ferguson et al., 2016). The amount of tissue glycogen increase, the glandular epithelial cells begin to fill with cellular debris, become twisted and dilate. The glands secrete small quantities of endometrial fluid in preparation for fertilized ovum. The vascularity of the entire uterus increases greatly providing a nourishing bed for implantation. If implantation occurs, the endometrium under the influence of progesterone continues to develop and become even thicker (Hafez and Hafez, 2013).

4. Ischaemic Phase

If fertilization does not occur the corpus luteum begins to degenerate, and as a result both oestrogen and progesterone level fall. Areas of necrosis appear under the epithelial lining. Extensive vascular changes also occur. Small blood vessels rupture, and spiral arteries constrict and retract, causing a deficiency of blood in the endometrium, which becomes pale. The ischaemic phase is characterized by escape of blood into the stromal cells of the

uterus. The menstrual flow begins, and the menstrual cycle is launched again (Moore et al., 2011).

2.3.2 Knowledge about Menstruation

In most developing countries including Nigeria formal education about reproductive health is very limited. In these parts of the world, menstruation and related issues are treated with top secrecy; as a result, many young girls lack appropriate and sufficient information regarding menstrual hygiene (Burgers and Lhalungpa, 2008). Knowledge of menstruation is typically gained once a girl has reached menarche. Many girls in African society are unaware of menstruation prior to her first experience; because of this, these girls expressed feelings of fear, because they thought they had a wound (Caruso, Freeman, Salim and Fehr, 2012).

Adinma and Adinma (2008) stated that the information girls received in most cases is not adequate to prepare them for menarche, as process and characteristics of menstruation and menstrual cycle are not covered. This to a large extent influences menstrual practices of these adolescent girls. They further stated that the knowledge these girls have about menstruation, function of the reproductive organs and their inter relationships is deficient. Some even perceive menstrual bleeding as emanating from abdomen, intestine and even liver or occurring as a result of curse from gods, sin and disease. Mahon and Fernandes (2010) in a survey conducted in Nepal discovered that most girls have heard about menstruation, but majority are not prepared in any way for their first period (menarche). A common belief among girls was that menstruation was removal of bad blood from the body necessary to prevent infection.

The major source of information about menstruation in developing countries is from mothers, sisters and friends. The information most girls receive is regarding the use of pieces of cloths in absorbing their menstrual bleeding, the practice of rituals, the concept of cultural pollution and cautions about their behaviour toward men and boys (Mahon and Fernandes, 2010).

2.4 Menstrual Problems

Pain was one of the menstrual symptoms most often reported in the literature. Across six studies (Chou et al, 2008; Mason and Cunningham, 2008), participants who reported

abnormal pain during the menstrual period ranged from 22.2% to 90.9%. Chou et al. (2008) indicated 37.5% of the participants felt abnormal pain. Rodgers et al. (2006) reported that 54% of the participants had experienced abnormal period pain, which was the most frequent problem experienced in the last 6 months.

Ditchfield and Burns (2004) reported that 91% of the participants described pain as a significant negative impact on their lives, for example, "agony, "like the bones in me are pulling out" and "I can't move because of the pain." Some of the studies presented different kinds of approaches that participants reported they used: massage, herbal medications, and pain relieving medication (Carlson and Wilson, 1994) and warm water or sweets (e.g., chocolate, candies, black sugar, hot chocolate, or cookies) (Chou et al., 2008) to relieve discomfort.

Menstrual problems are abnormality that is associated with menstruation. Although menstruation is associated with some degrees of discomforts, where it becomes more severe that it interferes with normal activities or optimal functioning of the individual, it becomes abnormal. Sharma, Malhotra, Taneja and Shah (2008) opined that period of menarche needs special attention because menstruation in adolescent girls is often associated with related problems and poor practices. Menstrual problems have heavy impact in social responsibilities of these adolescents. Some of the problems are: dysmenorrhea, pre-menstrual syndrome (PMS), dysfunctional uterine bleeding.

2.4.1 Meaning of Dysmenorrhea

Dysmenorrhoea is a painful menstruation of sufficient magnitude, so as to incapacitate the day to day activities (Meanal, Kulkari and Druged, 2011). Dysmenorrhoea is the commonest health and gynaecological problems and menstrual disorders girls and women of reproductive age face. It is leading cause of recurrent short term school absence in adolescent girls (Agarwal and Agarwal 2010). Dysmenorrhoea is classified into: Primary dysmenorrhea and Secondary dysmenorrhoea.

1. Primary Dysmenorrhoea

This is defined as painful menstruation in woman with normal pelvic anatomy, usually begins during adolescence. It is characterized by pelvic cramps, pain beginning shortly

before or the onset of menses and lasting one to three days French 2008; (Hilario, Bozzini, Borsari and Baracat 2008).

2. Secondary Dysmenorrhoea

This pain is caused by a disorder in the woman's reproductive organs. Pain from secondary dysmenorrhoea usually begins earlier in the menstrual cycle and lasts longer than common cause of secondary dysmenorrhoea are endometriosis, lieomyoma, adenomyosis, ovarian cysts and pelvic congestion (French 2008; Hilario, Bozzini, Borsari and Baracat 2008).

2.4.1.1 Signs and symptoms of dysmenorrhea

The main symptom of dysmenorrhea is pain concentrated in the lower abdomen, in the umbilical region or the suprapubic region of the abdomen. It is also commonly felt in the right or left abdomen. It may radiate to the thighs and lower back. Symptoms often co-occurring with menstrual pain include nausea and vomiting, diarrhoea or constipation headache, dizziness, disorientation, hypersensitivity to sound, light, smell and touch, fainting, and fatigue. Symptoms of dysmenorrhoea often begin immediately following ovulation and can last until the end of menstruation. This is because dysmenorrhoea is often associated with changes in hormonal levels in the body that occur with ovulation (Hilario et al., 2008).

2.4.2 Premenstrual Menstrual Syndrome (PMS)

Many women feel physical or mood changes during the days before menstruation. When these symptoms happen month after month, and affect a woman's life, there are known as premenstrual and syndrome (American College of Obstetricians and Gynecologists, 2011).

2.4.3 Common Symptoms of Premenstrual Menstrual Syndrome (PMS)

The symptoms of PMS are both emotional and physical and they are as follows:

Emotional Symptoms include: Depression, angry out bursts, irritability, crying spells, anxiety social withdrawal poor Concentration, insomnia, increased nap taking and changes in sexual desire. Physical Symptoms include the following: Thirst and appetite changes (Food cravings), breast tenderness, bloating and weight gain, headache, swelling of the hands or feet, skin problems, gastrointestinal symptoms and abdominal pain.

2.4.3.1 Diagnosis of Premenstrual Menstrual Syndrome (PMS)

In order to diagnose Premenstrual Menstrual Syndrome (PMS), a health care provider must confirm a pattern of symptoms. A woman's symptoms must be present in the 5 days before her period for at least three menstrual cycle end within 4 days after her period for at least three menstrual cycles, end within 4 days after her period starts and interfere with some of her normal activities. To help in the diagnosis the girl is asked to keep record of her symptoms each day for 2-3 months. She should also record the dates of her periods (ACOG, 2011).

2.4.4 Premenstrual Dysphoric Disorder

When symptoms are severe and cause problems with work or personal relationship it is premenstrual dysphonic disorder (PMDD). PMDD is a severe type of PMS that affects a small percentage of women. This can be treated with Serotonin reuptake inhibitors can help treat PMDD in some women.

2.5 Management of Dysmenorrhea and Premenstrual Menstrual Syndrome (PMS)

If symptoms are mild to moderate, they can often be relieved by changes in lifestyle or diet. If it is severe that it interferes with one's life it is best to seek medical advice (ACOG, 2011),

1. Exercise: American College of Obstetricians and Gynecologists (ACOG) asserts that aerobic exercise lessens PMS symptoms. It reduces fatigue and depression. This includes brisk walking, running, cycling and swimming increases heart rate and lungs function. Exercising most days of the week not just during the days of the symptoms will help relieve the symptoms (ACOG, 2011).

2. Relaxation: Relaxation therapy and reduction of stress will help relieve the symptoms. Relaxation like breathing exercises, meditation, and massage may help. Having enough sleep is very important and will help to reduces the symptoms

3. Dietary Management

Saturated fats should be avoided: limit red meat and dairy products. Avoid fried foods, replace dairy products with soya, rice or oat milk, soya spreads and cheese. Soya products supply phytooestrogen's to help balance hormone levels (Mizon, 2011). Replace red meat with fish such as trout salmon, mackerel, and sardines since these provide essential fatty acids (EFA'S) to balance hormones (Mizon, 2011).

Limit sources of caffeine such as Coffee tea, cola replace with herb teas, fruit teas and bottle/filtered water. Caffeine is associated with PMS and increases menstrual pains (Mizon, 2011).

Avoid processed / fast foods: since these contains additives and are lower in nutrients required for good hormonal balance (Mizon, 2011). Increase intake of filtered water up to 8 glasses /2 litres daily, will help the liver to detoxify used oestrogen and xenoestrogen (Mizon,2011). Avoid refine carbohydrates and sugar Increase intake of whole grain instead of refined polished food like pasta (spaghetti, macaroni), brown bread instead of white bread to help regulate blood glucose levels. Include a serving of beans or lentils daily. The whole grains, beans or lentils will also raise fibre intake which help to remove used estrogen from the digestive tract so that it cannot be recycled. Increase fibre intake also helps to reduce the levels of unhealthy bacteria in the digestive tract predating the reconjugation and recycling of old oestrogen. These complex carbohydrates as well as lean chicken and turkey will also help to raise tryptophan intake, serotonin and melatonin levels (Mizon, 2011). Increase intake of fruits and vegetables. Reduce salt intake reduce fluid retention that causes bloating. Change eating schedule, eat six small meals instead of large ones.

4. Drug Management of PMS and Dysmenorrhoea

Non-steroidal anti-inflammatory (NSAIDs) are effective in relieving the pain of primary dysmenorrhoea. They can have side effects like nausea, dyspepsia peptic ulcer, and diarrhea. People, who are unable to take the more common NSAIDs, may be prescribed a COX-inhibitors (Proctor and Farquhar, 2006).

Besides these drugs anti-spasmodics like buscopam is used that relax the muscles and helps to reduce the pain. Calcium 1,200mg reduces physical and mood symptoms example improvement in mood swings, depression, tension, anxiety, and anger. Magnesium supplement will reduce water retention, breast tenderness and mood symptoms. Vitamin E will help reduce symptoms, Antidepressant: example imipramine, amytrptyline; Diuretics: this is used if water retention is a major problem (Hollister, 1972).

2.6 Conceptual Frame work

2.6.1 Precede model

The Precede model has provided moral and practical guidance for the fields of health education and health promotion since Lawrence Green first developed Precede in 1974. The Precede today remains the most comprehensive and one of the most used approaches to promoting health. It has been used over the years by health care planners and researchers to design interventions that acknowledge a wide range of individual and environmental determinants of health (Mo and Mak 2008; Binkley and Johnson 2014; Hosseini et al., 2016; Moshiki et al., 2017; Azar et al., 2017). The PRECEDE acronym stands for Predisposing, Reinforcing, Enabling Constructs in Educational/Environmental Diagnosis and Evaluation.

2.6.2 Predisposing Factors

The predisposing factors explored in this study were age, sex, ethnicity, religion, academic performance, family history of dysmenorrhea, parental characteristics perception and experience of dysmenorrhea.

2.6.3 Enabling Factor

These are factors that enable people to act on their predisposition. The enabling factor considered in this study was sources of information about dysmenorrhea.

2.6.4 Reinforcing Factors

Reinforcing factors are those factors that encourages repetition and persistent after the commencement of a new behaviour. These factors include influence from friends, peers, acquaintances, parents, religious leaders and mass media. Pressures from friends and peers can significantly influence the opinion and belief of the students about dysmenorrhea. Consequently, student may adopt a particular a particular way of managing dysmenorrhea from their friends and peers which will eventually change their perception, coping mechanism and health seeking behavior dysmenorrhea. Interventions targeted at the peers group, friends and acquaintances will help in correcting the opinion and perception of students about dysmenorrhoea that may be heinous and inimical to the societal norm. Hence, this model was used to design the questionnaire that was used in this study.

Predisposing Factors

Age at menarche

Heavy menstrual flow

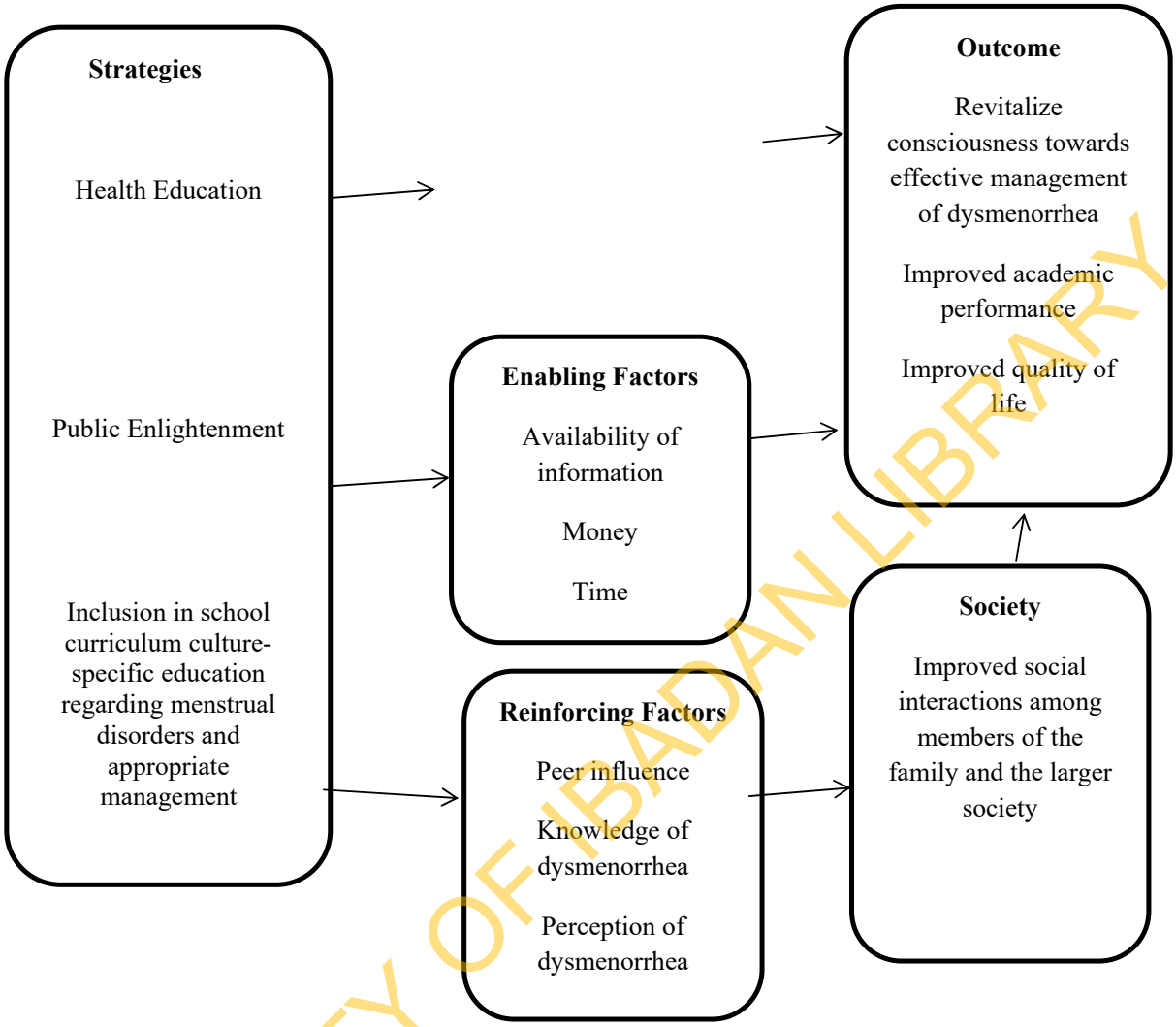

Figure 2.1: Precede model (Mo and Mak 2008)

CHAPTER THREE

METHODOLOGY

3.1 Study Area

Ibadan is the capital of Oyo State located in the Southwest region of Nigeria with a population of 5,580,894 persons comprising 2,802,432 males and 2,778,462 females and an estimated growing population rate of 3% per year (NPC, 2006). Ibadan metropolis has 11 Local Government Areas. There are four secondary schools for the hearing impaired in Ibadan.

3.2 Study setting

This study was conducted among three schools for the hearing impaired in Ibadan. These schools have a total number of 264 students, 127 males and 137 females. One of the schools (Methodist High School, Bodija) is partial mainstream Schools where hearing impaired students and hard of hearing are in the same school with typical hearing students but in separate classes with the hearing students, and provision of interpreter services during lecture periods; the second school (Ijokodo High School, Ijokodo) was a total mainstream School where hearing impaired students are in the same school and class with the hard of hearing, interpreter services are available for all lecture periods. The last school (Christian Mission School for the hearing impaired, GRA, Onerike, Ibadan) is a special school for hearing impaired students only and most of them are boarders.

3.3 Study Design

This study adopted a descriptive cross sectional design to investigate the knowledge and experience of dysmenorrhoea among d hearing impaired secondary school girls in Ibadan

3.4 Variables

3.4.1 Dependent Variable

The two dependent variables explored in this study were prevalence and knowledge of dysmenorrhoea

3.4.2 Independent Variable

The independent variables explored in this study included age, sex, ethnicity, religion, academic performance, family history of dysmenorrhea, parental characteristics, sources of information about dysmenorrhea.

3.5 Study Population

The study population was made up all female deaf students in the three selected hearing impaired schools who were eligible and consented to participate in the study.

3.5.1 Inclusion Criteria

The female hearing impaired students who were eligible to participate in this study included those who had ever menstruated, communicate using sign language as the primary language and consented to participate in the study.

3.5.2 Exclusion Criteria

Female hearing impaired students who had any form of psychiatric disorder were excluded from this study. This was because it could adversely affect their responses questions to questions during the interview.

3.6 Sample Size

The sample size for this research work was estimated using the conventional sample size formula for proportion:

Sample size (n) = $\frac{Z\alpha^2 pq}{d^2}$

Where: n = Sample size

Zα = Z statistic for the level of confidence of 95% (1.96)

P = prevalence of dysmenorrhoea from a previous study = 77.8% (Amu and Bamidele 2014).

(1-P) = (0.222)

d = Precision of 5% (0.05)

n = $\frac{(1.96)^2 \times 0.778 \times 0.222}{(0.05)^2}$

n = 265

Adjusting for non-response rate of 10%

n = $\frac{265}{(1-10\%)}$

n = 295

Considering population less than 10,000

$$nf = \frac{295}{1 + (\frac{n}{N})}$$

$$nf = \frac{295}{1 + (\frac{295}{137})}$$

$$nf = \frac{295}{1 + (2.15)}$$

$nf = 94$

This gave a minimum sample size of 94 study participants.

3.7 Sampling Technique

A total sampling of all the eligible and consenting female hearing impaired students was done

3.8 Data Collection

A pre-tested semi-structured interviewer questionnaire was used to collect information from the study participants. The questionnaire had five parts namely:

Section A: This assessed the socio-demographic characteristics of the hearing impaired secondary school girls.

Section B: This assessed the knowledge of dysmenorrhea among hearing impaired secondary school girls

Section C: This documented the experiences of dysmenorrhoea among hearing impaired secondary school girls.

Section D: This sought out the coping mechanism for dysmenorrhoea among hearing impaired secondary school girls.

Section E: This assessed the perceived effects of dysmenorrhoea among hearing impaired secondary school girls.

3.9 Validity of Instrument

To ensure validity of the instrument, a draft of the questionnaire was constructed by consulting relevant literature, subjected to reviews from other experts. The questionnaire was reviewed among experts in Health Education and Promotion, Communication,

Epidemiology, and Medical Statistics for face, construct and content validity. Certified interpreters who were trained as research assistants collected the data.

3.10 Reliability of Instrument

The suitability of the instrument to the study population was pretested among 11 female hearing impaired students in Dubar Grammar School Oyo Town, Oyo LGA, Oyo State with similar characteristics with the study group. Reliability of the instrument for the studied population was determined with the Cronbach's alpha coefficient (0.87). Eleven female hearing impaired students in Dubar Grammar School, Oyo Town, Oyo LGA were recruited for the pre-test which is 10% of the sample size for the main study.

3.11 Data Analysis

The Statistical Package for Social Sciences (SPSS) version 20 was used to enter and analyze the quantitative data. Descriptive statistics was used to summarize the socio-demographic characteristics of respondents. The knowledge about dysmenorrhoea was assessed using a 10-item scale. Each correct answer was scored "1" while wrong answer was scored "0". The minimum and maximum obtainable scores were "0" and "10" respectively. The cut-off point for good knowledge of dysmenorrhea was 5. Bivariate analysis was used to determine the factors associated with the prevalence and knowledge of dysmenorrhea. A p-value of less than 0.05 was used to indicate statistical significance.

3.12 Ethical Considerations

Ethical approval was obtained from the Ethics Review Committee of the Oyo Ministry of Health and informed consent was sought from all participants. Also, permission to carry out the study was obtained from relevant local school authorities. The nature, purpose and process of the study was explained to the participants after which written informed consent was obtained.

- **Use of sign language**

The questionnaire was self-administered by respondent but using sign language by trained expert to interpret to the respondent.

- **Confidentiality of Data**

All data acquired during the course of the research was kept confidential and anonymity assured. The questionnaire did not bear any incriminating information or identity of the participants. Confidentiality of data was maintained through coding, storage and archiving.

- **Beneficence to Participants**

The vulnerability of the deaf girls was acknowledged and the potential benefit of this study to the school was emphasized.

- **Non-Maleficence to Participants**

No harm was done to the participants as a result of the research. Also, efforts were made to ensure that questionnaire administration.

- **Right to Decline / Withdrawal from Study**

Participants were informed about the nature of the study and consent forms to read and sign. The participants had the right to withdraw from the study with no consequences of doing so.

CHAPTER FOUR

RESULTS

4.1 Socio-demographic Characteristics of Respondents

The mean age of respondents was 15.5±3.0 years and age range was 10-26 years. Most of the respondents (45.5%) were aged 13-15 years while 11.6% were age 18 years and above. Most of the respondents were Yoruba (67.9%) and 67.9% were in junior secondary. More than two-third (68.8%) of the respondents were Christians while others were Muslims (31.2%) (Table 4.1).

Table 4.1 Socio-demographic Characteristics of Respondents (N = 112)

Variables	Frequency	Percentage
Age (years)		
10-12	14	12.5
13-15	51	45.5
16-18	34	30.4
> 18	13	11.6
Mean±SD	15.5±3.0	
Class		
JSS	76	67.9
SSS	36	32.1
Ethnicity		
Yoruba	76	67.9
Igbo	28	25.0
Others	8	7.1
Religion		
Christianity	77	68.8
Islam	35	31.2

4.2 Respondent's Knowledge of dysmenorrhoea

Most of the respondents (74.1%) had poor knowledge of dysmenorrhea. The overall mean knowledge score was 3.7±1.3. The minimum and maximum scores were "0" and "6" respectively. Most respondents (83.0%) were able to explain the meaning of dysmenorrhea. About 12.5%, 56.3% and 14.3% were able to identify primary, secondary and primary and secondary respectively as types of dysmenorrhea. A low proportion of the respondents identified endometriosis (19.6%), fibroids (11.6%) and age at menarche (27.7%) as causes of dysmenorrhea. About 38.4% and 41.1% knew that drugs () and exercise () respectively can ameliorate dysmenorrhea. (Table 4.2).

Table 4.2 Respondent's Knowledge of dysmenorrhea (N = 112)

Knowledge Questions	Frequency	Percentage
Definition of dysmenorrhea		
Correct	93	83.0
Wrong	19	17.0
***Types of dysmenorrhea**		
Primary	11	12.5
Secondary	63	56.3
Primary and Secondary	96	14.3
***Causes of dysmenorrhea**		
Endometriosis	22	19.6
Fibroids	13	11.6
Age at menarche	31	27.7
***Prevention of dysmenorrhea**		
Taking drugs	43	38.4
Exercise	46	41.1
Cure for dysmenorrhea		
Correct	68	60.7
Wrong	44	39.3

* = *Correct options*

4.3 Respondents' Perception of dysmenorrhoea

Most respondents had a negative perception about dysmenorrhea (81.2%). Sixty-seven respondents (59.8%) believed that dysmenorrhea is an important health concern for women. Half of the respondents believed that dysmenorrhea must be experienced by all women of reproductive ages. Nearly half of the respondents believed that physical exercise reduces dysmenorrhoea. About one-third of the respondents were of the opinion that having sex reduces dysmenorrhoea. Thirty (26.8%) of the students believed that dysmenorrhea is caused by spiritual attack (Table 4.3).

Table 4.3 Respondents' Perception of dysmenorrhea (N = 112)

Perception Items	Responses		
	Agree n (%)	Not Sure n (%)	Disagree n (%)
Dysmenorrhoea is an important health concern for women	67 (59.8)	26 (23.2)	19 (17.0)
Dysmenorrhoea is normal	59 (52.7)	30 (26.8)	23 (20.5)
Dysmenorrhoea occurs when one takes sugary foods or drinks	56(50.0)	28 (25.0)	28 (25.0)
Physical exercise reduces dysmenorrhoea	53 (47.3)	36 (32.1)	23 (20.5)
Hot drinks relieve the pain from dysmenorrhoea	47 (42.0)	31 (27.7)	34 (30.4)
I experience dysmenorrhoea because it is hereditary	44 (39.3)	39 (34.8)	29 (25.9)
Dysmenorrhoea hinders one from getting pregnant in the future	44 (39.3)	41 (36.6)	27 (24.1)
I don't sleep well when I experience dysmenorrhoea	43 (38.4)	31 (27.7)	38 (33.9)
Dysmenorrhoea is as a result of stress	42 (37.5)	46 (41.1)	24(21.4)
Having sex reduces dysmenorrhoea	35 (31.3)	33 (29.5)	44 (39.3)
Pregnancy can stop dysmenorrhoea	33 (29.5)	44 (39.3)	35 (31.3)
Dysmenorrhoea is a major disorder that can kill	32 (28.8)	36 (32.1)	44 (39.3)
Dysmenorrhoea is a spiritual attack	30 (26.8)	54 (48.2)	28 (25.0)

4.4 Respondents menstrual characteristics and experience of dysmenorrhoea

The mean age at menarche was 12.7±1.4 years; range (9-15 years). Most of the respondents (89.3%) have regular menstrual cycle. The menstrual period of most respondents lasted for at least four days (45.5%). About 64.3% of the respondents had experienced dysmenorrhea and 28% experienced it during their menstrual flow. Most respondents (40.2%) had moderate pain during menstruation and its most felt in the lower abdomen. Most respondent have experienced dysmenorrhea for less than one year (Table 4.4).

Table 4.4 Respondents Menstrual Characteristics and Experiences of Dysmenorrhea (N = 112)

Characteristics	Percentage	Frequency
Age at Menarche (years)		
9-11	25	22.3
12-13	56	50.0
14-15	31	27.7
Mean±SD	12.7±1.4	
Type of menstrual cycle		
Regular	100	89.3
Irregular	12	10.7
Duration of menstrual flow (days)		
≤ 2	25	22.3
3	36	32.1
≥ 4	51	45.5
Nature of menstrual flow		
Scanty	11	9.8
Moderate	45	40.2
Heavy	27	24.1
Irregular	29	25.9
Number of sanitary pads do you use in a day		
1	18	16.1
2	43	38.4
3	24	21.4
≥ 4	13	11.6
Can't recall	14	12.5
Duration of dysmenorrhoea (n=72)		
Less than one year	32	44.4
One to Three years	23	31.9
Four years and above	8	11.6
I can't recall	9	12.5
When exactly do you experience dysmenorrhoea? (n=72)		
Same day of menstrual flow	28	38.9
Before menstrual flow	18	25.0
Every day of menstrual flow or during menstruation	20	27.8
After menstruation	6	8.3
What part of the body do you experience pain? (n=72)		
Lower abdomen	46	42.0
Upper abdomen	18	16.1
Waist	7	6.3
Nature of the pain (n=72)		
Mild	5	6.9
Moderate	32	44.4
Severe	19	26.4
Irregular	16	22.2

4.5: Signs and Symptoms of Dysmenorrhoea

The most common cited sign and symptoms by respondents were headache (81.9%) and eating too much (72.2%). This was followed by Stomach discomfort (68.1%), Feeling unhappy (66.7%), Over sleeping (66.7%), pimples on the face (63.9%) and waist pain (63.9). The least cited sign and symptoms by the respondents were nausea and vomiting (33.3%) and diarrhea (27.89%) (Table 4.5).

Table 4.5: Signs and Symptoms of Dysmenorrhoea (n=72)

Signs and Symptoms	Frequency	Percentages
Headache	59	81.9
Eating too much	52	72.2
Stomach discomfort	49	68.1
Feeling unhappy	48	66.7
Over sleeping	48	66.7
Waist pain	46	63.9
Pimples on the face	46	63.9
Backache	42	58.3
Tenderness of the breast	40	55.6
Dizziness	39	54.2
Weakness	39	54.2
Loss of appetite	37	51.4
Mood swing	32	44.4
Stiffness of the muscle	32	44.4
Cramps	31	43.1
Nagging	27	37.5
Nausea and vomiting	24	33.3
Diarrhoea	20	27.8

4.6: Home Management of Dysmenorrhoea

The most preferred drug by student who had dysmenorrhoea was paracetamol (73.6%). Forty (55.6%) preferred herbal drugs, followed by boscopan (38.9%), Ibrupofen (33.3%) and oral contraceptives (33.3%) injection (33.3), Felvin (30.6%), alcohol (29.2%) and Diclofenac (27.8%). Drinking of warm water was the most cited home remedy of dysmenorrhea (84.7%), followed by exercise (81.9%), sipping hot lipton (70.8%), sit bath (61.1%), Massaging the stomach with hot water (59.7%) and sexual intercourse (8.3%) (Table 4.6)

Table 4.6: Home Management of Dysmenorrhoea (n=72)

Management practices	Frequency	Percentages
Drugs		
Paracetamol	53	73.6
Herbal drugs	40	55.6
Boscopan	28	38.9
Ibrupofen	24	33.3
Oral contraceptive pills	24	33.3
Injection	24	33.3
Felvin	22	30.6
Alcohol	21	29.2
Diclofenac	20	27.8
Home Remedies		
drinking warm water	61	84.7
Exercise	59	81.9
Sipping hot Lipton	51	70.8
Sit bath	44	61.1
Massaging the stomach with hot water	43	59.7
Sex intercourse	6	8.3

4.7 Reasons for taking drugs and its side effects

Most respondents experiencing dysmenorrhea took drugs to relieve them of the pain (80.6%). Fifty-one (70.8%) were recommended by a health professional while about 37.5% were convinced by friends. The predominate side effects experienced by respondents were indigestion (58.3%) and swollen face or body (56.3%), followed by drastic reduction in the flow of blood (45.8%), vomiting and ulcer (31.9%) (Table 4.7).

Table 4.7 Reasons for taking drugs and its side effects (n=72)

Reasons/Side Effects	Frequency	Percentages
Reasons		
Relieves pain	58	80.6
Recommended a health professional	51	70.8
Effective	46	63.9
Cheap and affordable	29	40.3
Convinced by a friend	27	37.5
Side Effects		
Indigestion	42	58.3
Swollen face/ body	39	56.5
Drastic reduction in the flow of blood	33	45.8
Vomiting	32	44.4
Ulcer	23	31.9

4.8 Coping Mechanism, health seeking practice and source of information about dysmenorrhea

Most respondents who had ever experienced dysmenorrhea sought help from the Patents Medicine Vendors (66.7%), followed by hospitals (58.3%), religious homes (16.7%) and tradomedical homes (13.9%) (Figure 4.1). The most cited mechanism for coping with dysmenorrhea were physical exercise (84.7%) and drinking of hot tea, water and herbs (80.6%). This was followed by rest/sleep (75.0%) and taking of drugs (68.1%) (Table 4.8). The most cited source of information about dysmenorrhea were health workers (90.3%) and mothers (87.5%) (Figure 4.2).

Table 4.8 Respondents Coping Mechanism for Dysmenorrhoea **N=72**

Coping mechanism	Frequency	Percentages
Physical Exercise	61	84.7
Drinking of hot tea ,water and herbs	58	80.6
Rest /sleep	54	75.0
Taking drugs	49	68.1
Consulting a physician or gynaecologist	43	59.7
Avoidance of sugary foods or drinks	43	59.7
Heating pads	42	58.3
Hot shower	40	55.6
Massage	40	55.6
Alcohol	23	31.9
Visiting patent drug dealers	22	30.6
Pregnancy and abortion	19	26.4
Sex	15	20.8

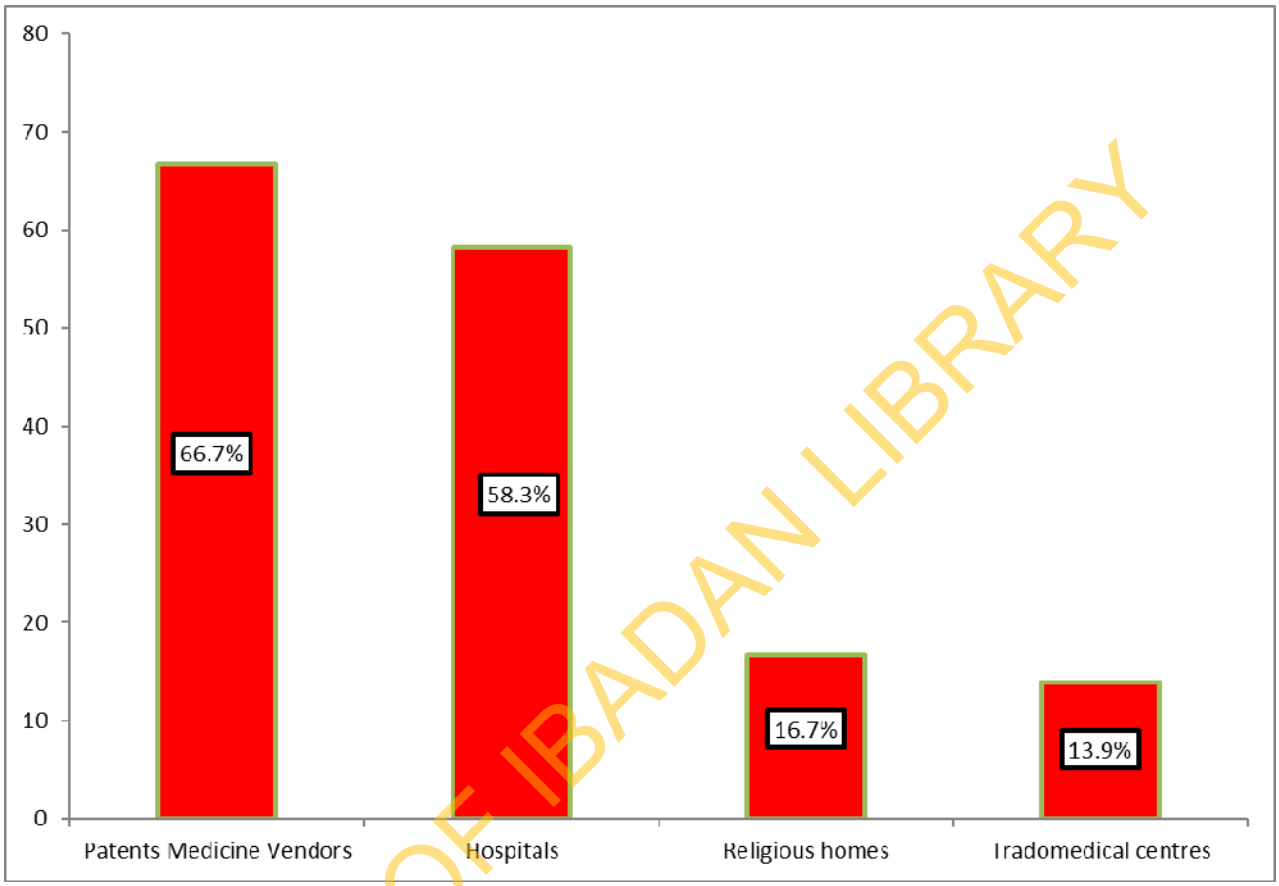

Figure 4.1: Respondents health seeking practice for dysmenorrhoea

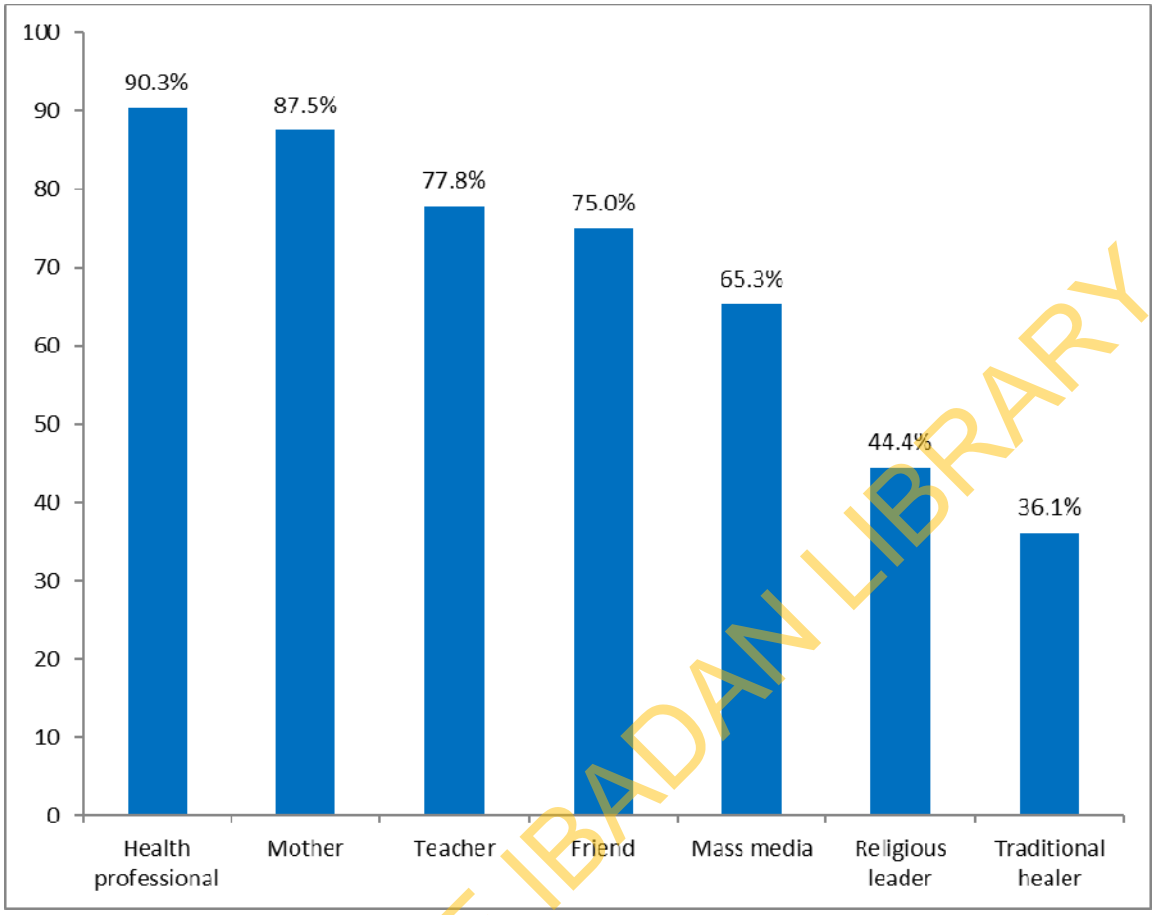

Figure 4.2: *Sources of Information about Dysmenorrhoea

* = multiple response

4.9: Association between respondent's characteristics and prevalence of Dysmenorrhoea

There was no significant association between respondent's characteristics and experience of dysmenorrhoea (P>0.05). However, younger respondents experienced dysmenorrhea than older respondents. Respondents who had earlier menarche had more dysmenorrhea that those that had late menarche. The prevalence of dysmenorrhea was higher among respondent that had irregular menstrual cycle. Prevalence of dysmenorrhea was higher among respondents who had shorter duration of menstrual flow (Table 4.9).

Table 4.9: Association between respondent's characteristics and prevalence of Dysmenorrhoea

Variables	Experience of Dysmenorrhoea		X^2	P-value
	Yes n (%)	No n (%)		
Age (years)				
10-12	11 (78.6)	3 (21.4)		
13-15	31 (60.8)	20 (39.2)	2.30	0.512
16-18	23 (67.6)	11 (32.4)		
> 18	7 (53.8)	6 (46.2)		
Age at Menarche (years)				
9-11	18 (72.0)	7 (28.0)		
12-13	38 (67.9)	18 (32.1)	3.13	0.209
14-15	16 (51.6)	15 (48.4)		
Ethnicity				
Yoruba	18 (64.3)	10 (35.7)		
Igbo	48 (63.2)	28 (36.8)	0.44	0.802
Others	6 (75.0)	2 (25.0)		
Religion				
Christianity	46 (59.7)	31 (40.3)	2.22	0.136
Islam	26 (74.3)	9 (25.7)		
Type of menstrual cycle				
Regular	64 (64.0)	36 (36.0)	0.03	0.855
Irregular	8 (66.7)	4 (33.3)		
Duration of Menstrual flow (days)				
≤ 2	19 (76.0)	6 (24.0)		
3	22 (61.1)	14 (38.9)	1.93	0.382
≥ 4	31 (60.8)	20 (39.2)		

4.10: Association between respondent's characteristics and knowledge of Dysmenorrhoea

Table 4.10 shows that the knowledge of dysmenorrhoea was not significantly associated with any of the respondents characteristics ($p>0.05$). However, younger respondents (10-12 years) had the least knowledge of dysmenorrhea than older respondents ($p>0.05$). The knowledge of dysmenorrhea increased with age at menarche. Respondents who experienced menarche at an older age had better knowledge of dysmenorrhea than those who experienced menarche at a younger age ($p>0.05$).

4.10: Association between respondent's characteristics and knowledge of Dysmenorrhoea

Variables	Knowledge of Dysmenorrhoea		X^2	P-value
	Poor n (%)	Good n (%)		
Age (years)				
10-12	13 (92.9)	1 (7.1)		
13-15	37 (72.5)	14 (27.5)	4.94	0.176
16-18	22 (64.7)	12 (35.3)		
> 18	11 (84.6)	2 (15.4)		
Age at Menarche (years)				
9-11	20 (80.0)	5 (20.0)		
12-13	42 (75.0)	14 (25.0)	1.13	0.568
14-15	21 (67.7)	10 (32.3)		
Ethnicity				
Yoruba	22 (78.6)	6 (21.4)		
Igbo	54 (71.1)	22 (28.9)	1.41	0.495
Others	7 (87.5)	1 (12.5)		
Religion				
Christianity	26 (74.3)	9 (25.7)	0.00	0.977
Islam	57 (74.0)	20 (26.0)		
Type of menstrual cycle				
Regular	75 (75.0)	25 (25.0)	0.39	0.533
Irregular	8 (66.7)	4 (33.3)		
Duration of Menstrual flow (days)				
≤ 2	17 (68.0)	8 (32.0)		
3	25 (69.4)	11 (30.6)	1.94	0.378
≥ 4	41 (80.4)	10 (19.6)		

4.11 SIGNIFICANT TEST FOR HYPOTHESES

Hypothesis 1: There is no association between the knowledge of dysmenorrhoea and age of respondents

The Chi-Square statistics was used to determine the association between the knowledge of dysmenorrhoea and age of respondents (X^2 =4.94; P = 0.176)

Therefore, we fail to reject the Null hypothesis that states that there is no association between the knowledge of dysmenorrhoea and age of respondents (Table: 4.11).

Table 4.11: Association between respondent's age and Knowledge of Dysmenorrhoea

Variables	Knowledge of Dysmenorrhoea		X^2	P-value
	Poor n (%)	Good n (%)		
Age (years)				
10-12	13 (92.9)	1 (7.1)		
13-15	37 (72.5)	14 (27.5)	4.94	0.176
16-18	22 (64.7)	12 (35.3)		
> 18	11 (84.6)	2 (15.4)		

Hypothesis II: There is no association between the knowledge of dysmenorrhoea and age at menarche

The Chi-Square statistics was used to determine the association between the knowledge of dysmenorrhoea and Age at Menarche (X^2 =1.13; P = 0.568)

Therefore, we fail to reject the Null hypothesis that states that there is no association between the knowledge of dysmenorrhoea and Age at Menarche (Table: 4.12).

4.12 Association between respondent's Age at Menarche and Knowledge of Dysmenorrhoea

Variables	Knowledge of Dysmenorrhoea		X^2	P-value
	Poor n (%)	Good n (%)		
Age at Menarche (years)				
9-11	20 (80.0)	5 (20.0)		
12-13	42 (75.0)	14 (25.0)	1.13	0.568
14-15	21 (67.7)	10 (32.3)		

Hypothesis III: There is no association between respondent's perception about dysmenorrhoea and age of respondents

The Chi-Square statistics was used to determine the association between the knowledge of dysmenorrhea and age of respondents (X^2 =5.83; P = 0.120).

Therefore, we fail to reject the Null hypothesis that states that there is no association between the knowledge of dysmenorrhoea and age of respondents (Table 4.13).

Table 4.13 Association between respondent's age and Perception about Dysmenorrhoea

Variables	Perception about Dysmenorrhoea		X^2	P-value
	Poor n (%)	Good n (%)		
Age (years)				
10-12	13 (92.9)	1 (7.1)		
13-15	38 (74.5)	13 (25.5)	5.83	0.120
16-18	27 (79.4)	7 (20.6)		
> 18	13 (100.0)	0 (0.0)		

Hypothesis IV: There is no association between respondent's perception about dysmenorrhoea and age at menarche

The Chi-Square statistics was used to determine the association between the knowledge of dysmenorrhea and age menarche (X^2 =0.195; P = 0.907).

Therefore, we fail to reject the Null hypothesis that states that there is no association between the knowledge of dysmenorrhoea and age at menarche (Table: 4.14).

Table 4.14 Association between respondent's Age at Menarche and Perception about Dysmenorrhoea

Variables	Perception about Dysmenorrhoea		X^2	P-value
	Poor n (%)	Good n (%)		
Age at Menarche (years)				
9-11	20 (80.0)	5 (20.0)		
12-13	45 (80.4)	11 (19.6)	0.195	0.907
14-15	26 (83.9)	5 (16.1)		

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1.1 Discussion

The mean age of respondents in this study is consistent with the finding of Saka and colleagues among in-school hearing children in Ilorin, Kwara, Nigeria (Saka et al., 2018). The age range of respondents was 10-26 years which is beyond secondary school age. This finding affirms the assertion of Sangowawa and colleagues that hearing impaired children commence schooling at an older age than hearing counterparts, which may be as a result of their inability to access to acquire formal education (Sangowawa et al., 2009). The mean age at menarche was 12.7±1.4 years in this study which is similar with the other studies among female students in Ibadan (Bello et al., 2017), Hong Kong (Chia et al., 2013), Turkey (Gagua et al., 2012), India (Afreen et al., 2016; Karanth and Liya 2018), Iraq (Al-Asadi and Abdul-Qadir 2013).

The study found a 64.3% prevalence of dysmenorrhea among the study population, which corroborates with the report among hearing undergraduate female students in India (62.5%) (Karanth and Liya 2018), Ile-Ife (64.0%) (Titilayo et al., 2009) and Jos (70.6%) (Emmanuel et al., 2013), female secondary school students in Nnewi (70.4%) (Egenti et al., 2016). Similarly, the prevalence obtained in the present study is in line with the report among in-schools adolescents in Turkey (52.1%) (Gagua et al., 2012) and Mysore, India (70.2%) (Omidvar et al., 2016). A higher prevalence of dysmenorrhea was documented among hearing adolescents in Ghana (74.4%) (Gumanga and Kwame-Aryee 2012), Asia (74.5%) (Wong and Khoo 2010), India (84.0%) (Afreen et al., 2016), Ibadan (87.3%) (Owonikoko et al., 2009). The observed variations in this prevalence of dysmenorrhea in the literature maybe attributed to the lack of a universally acceptable operational definition of dysmenorrhea (Tangchai et al., 2004; Chongpensuklert et al., 2008). It is difficult to measure pain associated with dysmenorrhea because of its attendant unpleasant sensations that partly affect the judgment of pain. More also, differences in the study design, ethnic affiliation, cultural background, geographic location may also be responsible for this variations (Tangchai et al., 2004).

In line with the report of Ameade et al. (2018), there was no significant association between the experience of dysmenorrhea and respondent's age, age at menarche, type of menstrual flow. This finding disagrees with the assertion of previous authors (Loto et al., 2008; Yamamoto et al., 2009; Kumbhar et al., 2011). The finding of a preponderance of dysmenorrhea among respondent who had earlier menarche is consistent with previous findings among students in Northern Ghana (Ameade et al., 2018), Iraq (Al-Asadi and Abdul-Qadir 2013), Palestine (Abu Helwa et al., 2018).

Muslims in this study experienced dysmenorrhea than Christians. This finding disagrees with the report of Ameade and colleagues among students (Ameade et al., 2018), The finding of this study shows that dysmenorrhea was more common among younger students agrees with the finding among Northern Ghanaian students (Ameade et al., 2018). Nevertheless, dysmenorrhea was found to be higher among some undergraduate students in India (Karanth and Liya 2018). In agreement with the findings of previous studies (Al-Asadi and Abdul-Qadir 2013; Ameade et al., 2018; Karanth and Liya 2018), student who had irregular menstrual cycle in this study suffered more from dysmenorrhea. However, undergraduate Indian students who had regular cycle suffered more from dysmenorrhea (Afreen et al., 2016).

The finding of this study showed that respondents who had shorter duration of menstrual flow suffered more from dynmenorrhea than others. This is consistent with the finding among female university students in India (Afreen et al., 2016) and Palestine (Abu Helwa et al., 2018). In contrast, there was a positive association between the duration of menstrual flow and prevalence of dysmenorrhea among university students in Northern Ghana (Al-Asadi and Abdul-Qadir 2013; Ameade et al., 2018).

Nearly one third of the respondents in this study had severe pain during dysmenorrhea. This is consistent with the findings among secondary school students in Basra, Iraq (Emmanuel et al., 2013; Egenti et al., 2016). In contrast, other studies documented that most students experienced moderate pain during dysmenorrhea (Al-Asadi and Abdul-Qadir 2013; Ameade et al., 2018). The nature of pain due to dysmenorrhea varied in greatly in the literatures. The differences in the severity of pain observed in this study may be as result of differences in pain perception and variability in pain threshold among different ethnic groups (Chongpensuklert et al., 2008).

The most commonly cited sign and symptoms of dysmenorrhea by respondents in this study was headache. In contrast, other authors reported that tiredness (Owonikoko et al., 2009; Al-Asadi and Abdul-Qadir 2013; Bello et al., 2017; Abu Helwa et al., 2018), lower abdominal pain (Yesuf et al., 2018), lethargy (Ameade et al., 2018), backache (Afreen et al., 2016) were the most cited symptoms of dysmenorrhea by students.

The most cited source of information about dysmenorrhea by the respondents in this study was health care professionals followed by mothers. This is in consonance with other authors asserted that the mothers were the major source of information about menstrual health (Adinma and Adinma 2008; Owonikoko et al., 2009; Saka et al., 2018). This is in contrast with the finding of among secondary school students in Nnewi, Nigeria which documented that most students learnt about dysmenorrhea through personal experiences which led to the use of self-medication by the affected children (Egenti et al., 2016).

Most respondents in this study had poor knowledge of dysmenorrhea. This finding corroborates the assertion previous studies from Nigeria (Farotimi et al., 2015; Saka et al., 2018), Gilan (Panahande et al., 2008) and Iran (Baghianimoghadam et al., 2012) which showed that adolescent's knowledge of dysmenorrhea was inadequate. Similarly, a study conducted in Ibadan revealed that in-school adolescents had inadequate knowledge about their menstrual health (Owonikoko et al., 2009). Conversely, some authors argued that adolescents in Nigeria had adequate knowledge of menstrual disorders and discomfort (Titilayo et al., 2009; Ogunfowokan and Babatunde 2010). The poor knowledge of dysmenorrhea reported in this study was quite expected because the disabilities of the respondents in the present study which may prevent their access to health care information.

Most respondents in this study complained to have experienced pain in their lower abdomen during menstruation when asked which part of their body do they experience pain during dysmenorrhea. This is consistent with the finding among students in Ethiopia (Adinma and Adinma 2008; Yesuf et al., 2018). Most respondents in this study had menstrual bleeding for at least four days which is in consonance with the finding among students in a selected tertiary institution in Ethiopia (Yesuf et al., 2018). The use of paracetamol by most respondents who had dysmenorrhea in this study agrees with the finding of among students in Northern Ghana (Ameade et al., 2018), Kwara (Saka et al.,

2018). However, Ibuprofen (Yesuf et al., 2018), non-steroidal anti-inflammatory drugs (NSAIDs) (Abu Helwa et al., 2018) were commonly used by respondents to manage dysmenorrhea in other studies. Drinking of warm water and regular physical exercise were employed by most respondents in this study as a remedy for dysmenorrhea is similar with a study in Ethiopia among undergraduate students which drinking more water or tea was employed.

The finding of this study showed that most respondents who had dysmenorrhea experienced pain the same day of menstrual flow which corroborate with the report of previous studies among students in India (Afreen et al., 2016), Palestine (Abu Helwa et al., 2018). However, a study conducted among university students in Northern Ghana found that most students experienced pain before the menstrual bleeding (Ameade et al., 2018).

Interestingly, this study affirms previous documentation that dysmenorrhoea is a normal part of the female menstrual cycle (Wong 2011; Egenti et al., 2016; Saka et al., 2018). Most respondents in this study opined that Dysmenorrhoea is an important health concern for women which corroborate with the finding of among secondary school students in Nnewi, Nigeria (Egenti et al., 2016). A study among in in-school children in Nepal suggested that menstrual problems can be caused by poor hygiene (Sapkota et al., 2013). This is contradictory to the finding of from other studies (Um et al., 2010, Bobhate and Shrivastava 2011). Less than one-thirds of the respondents in this study agreed that dysmenorrhea was due to spiritual attack. Similarly, none of the secondary school children in Onitsha perceived dysmenorrhea as a spiritual problem (Adinma and Adinma 2008). Most respondents in study perceived that Physical exercise reduces dysmenorrhoea which agrees with a Turkish study which found that participating in physical activity decreased the length of menstruation pain and volume of bleeding (Mahvash et al., 2012).

Like any other study, this study had some drawbacks. First, the cross-sectional nature of this study limits the validity in the investigation of causal inferences. Secondly, data obtained in this study was from three schools for the deaf Ibadan, Nigeria; this may affect the generalizability of the finding to all school for the hearing impaired in Nigeria. Finally, respondent's response may be biased as they knew that they were being studied. However, they were assured of the confidentiality their responses.

5.1.2 Implication for health promotion and reproductive health education

The findings of this study revealed that the student had poor knowledge and negative perception about the management of dysmenorrhoea. Though, studies have shown that knowledge does not always influence practice and perception. These groups of people have limited access to health information. There is communication barrier between the hearing impaired students and the community most especially the health care providers. Consequently, hearing impaired girls are unable to seek medical care at health facilities hence exposing them to poor perception and management practices of dysmenorrhoea. The plight of this category of the population should always be considered when designing any health education programmes.

5.2 Conclusion

This study has demonstrated that majority of the students were between the ages of 10-26 years. Most respondents had an overall poor knowledge of dysmenorrhea. Respondent's had poor knowledge about the prevention of dysmenorrhea. Mothers were the major source of information about dysmenorrhea. There was no significant association between respondents' characteristics and their knowledge about dysmenorrhea.

Nearly two-thirds of the respondents were currently experiencing dysmenorrhea. The most common symptom of dysmenorrhea cited by respondent was headache. More than one half of the respondents used herbal drug to manage dysmenorrhea. There was no significant association between prevalence of dysmenorrhea and any of the socio-demographic or menstrual characteristics.

The common coping mechanism cited by respondents experiencing dysmenorrhea in this study was physical exercise and drinking of hot tea, water and herbs. About 1 in 5 of the respondents coped with dysmenorrhea by having sexual intercourse.

Most respondents in this study had negative perception about dysmenorrhea. Most respondents believed that dysmenorrhea is normal for all women of reproductive ages. Nearly one half of the respondents believed that exercise reduces dysmenorrhea. Nearly, one-third of the respondents opined that dysmenorrhea is caused by spiritual power.

5.3 Recommendations

Based on the findings from this study, the following recommendations were made:

1. The general public should be enlightened on dysmenorrhea and its management. This will go a long way in correcting the existing misconception about dysmenorrhea and its management.
2. Considering the fact that respondents still depend on herbal medicine, it is imperative to evaluate the safety, efficacy and quality of these products through quality control bodies, such as NAFDAC. This may be a useful means of minimizing the potential adverse effects, since herbal remedies cannot be completely eradicated from our society.
3. Reproductive health should be in-cooperated into the school curriculum. School clinics should be equipped with adolescent-friendly services that give information to students, mothers and teachers regarding menstrual health and effective medications.
4. Finally, further study should determine the association between dysmenorrhea and physical exercise and genetic biomarkers.

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APPENDIX I

INFORMED CONSENT FORM

I ……..……, hereby declare that I understand to the best of my ability the intent of the research titled "knowledge and experience of dysmenorrhoea among deaf secondary school girls in Ibadan, Oyo state, Nigeria"

I have had the opportunity to ask questions about the study and all questions I have asked have been answered to my satisfaction. I would take part in this study with the understanding that I know enough about the purpose, methods, risks and benefits of the research study and I have the absolute right to withdraw from the study anytime at my own will. I have also received a copy of this consent form and additional information sheet to keep for myself.

I therefore give the researcher absolute right to obtain my information and use it under the terms of this research.

Name of Participant: .....

Signature of Participant: .....

Date: ...../...../ 2018

Name of Researcher: Obasi, Blessing

Phone Number of Researcher: 07036641040

Name of Research Supervisor: Prof. Arologun O. S.

APPENDIX II

QUESTIONNAIRE

Dear Respondent,

My name is Obasi, Blessing C., a post graduate student of the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan. The purpose of this study is to investigate the knowledge and experiences of dysmenorrhea among deaf secondary school girls in Ibadan, Oyo state, Nigeria.

This study will help communicate the intensity of dysmenorrhea experienced by deaf girls to policy makers, ministry of health and thus help to improve awareness among healthcare providers by allowing them to be more sensitive to the issues relating to the management of dysmenorrhea hence improving their quality of life

Therefore, your consent, responses and opinions will be kept confidential and be used for the purpose of this research only.

Please note that you do not have to write your name on the questionnaire, your consent is only needed to answer the question below honestly and accurately as possible to make the research a success. Your participation is voluntary.

Kindly indicate your willingness to participate by ticking (✓) in the appropriate box below.

Yes ( ) No ( )

Thanks for your co-operation

INSTRUCTION: This is a self-administered questionnaire and it is to be completed by respondent. Please mark in (✓) good in the boxes provided as appropriate.

SECTION A: SOCIO DEMOGRAPHIC CHARACTERISTICS

1. Age as at last birthday (in year)……..
2. Class…….
3. Ethnicity: 1. Igbo [ ] 2. Yoruba [ ] 3. Hausa [ ] 4. others specify [ ]
4. Religion: 1. Islam [ ] 2. Christianity [ ] 3. Traditional [ ] 4. Others specify [ ]
5. Age at First menstruation…….

SECTION B: KNOWLEDGE ON DYSMENORRHOEA

6. Dysmenorrhoea is defined as painful menstruation. 1. True [ ] 2. False [ ]
7. What are the types of dysmenorrhoea?
   a. Primary 1. True [ ] 2. False [ ]
   b. Secondary 1. True [ ] 2. False [ ]
   b. Primary and Secondary 1. True [ ] 2. False [ ]
8. What are the causes of dysmenorrhoea?
   a. Endometriosis 1. True [ ] 2. False [ ]
   b. Fibroids 1. True [ ] 2. False [ ]
9. Which of the following options can make someone experience dysmenorrhoea? 1. Family History [ ] 2. Age of menarche [ ] 3. Taking sugary things [ ] 4. Others (please specify)……
10. Dysmenorrhoea can be prevented by?
    a. Taking drugs 1. True [ ] 2. False [ ]
    b. Exercise 1. True [ ] 2. False [ ]
11. Is there any cure for dysmenorrhoea? 1. Yes [ ] 2. No [ ] 3. I don't know [ ]

SECTION C: PERCEPTION TOWARDS DYSMENORRHOEA

12. The following are statement about dysmenorrhoea: Please choose the appropriate answer as it appeals to you. A = agree; N= Not sure; D=disagree;

S/N	Statement	A	N	D
a.	Dysmenorrhoea is normal			
b.	Dysmenorrhoea is a spiritual attack			
c.	I experience dysmenorrhoea because it is hereditary			
d.	Dysmenorrhoea occurs when one takes sugary foods or drinks			
e.	Dysmenorrhoea is as a result of stress			
f.	I don't sleep well when I experience dysmenorrhoea			
g.	Having sex reduces dysmenorrhoea			
h.	Physical exercise reduces dysmenorrhoea			
i.	Hot drinks example: Tea or Water or Alcoholic drinks release the pain from dysmenorrhoea			
j.	Dysmenorrhoea is a major disorder that can kill			
k.	Dysmenorrhoea hinders one from getting pregnant in the future			

l.	Dysmenorrhoea is an important health concern for women			
m.	Pregnancy can stop dysmenorrhoea			

SECTION D: DYSMENORRHOEA EXPERIENCES

13. At what age did you have your first menstruation? ……..

14. How many times do you menstruate in a month? 1. Once [ ] 2. Twice [ ] 3. Not regular [ ] 4. Others specify….

15. How many days does your menstruation last? 1. One day [ ] 2. Two days [ ] 3. Three days [ ] 4. More than four days [ ]

16. What is the nature of your flow? 1. Scanty [ ] 2.Moderate [ ] 3. Heavy [ ] 4. I don't know [ ]

17. How many sanitary pads do you use in a day? 1. 1 [ ] 2. 2 [ ] 3. 3 [ ] 4. More [ ] 5. I can't recall [ ].

18. Have you ever experienced dysmenorrhoea? 1. Yes [ ] 2. No [ ]

19. If yes, since when have you been experiencing dysmenorrhoea? 1. Less than one year [ ] 2. One to Three years [ ] 3. Four years and above [ ] 4. I can't recall [ ]

20. When exactly do you experience dysmenorrhoea? 1. Same day of menstrual flow [ ] 2. Before menstrual flow [ ] 2. Every day of menstrual flow or during menstruation [ ] 3. After menstruation [ ] 4. Others specify [ ]

21. What is the nature of the pain? 1. Mild [ ] 2. Moderate [ ] 3. Severe [ ] 4. I can't explain [ ]

22. In what part of the body do you experience pain? 1. Lower abdomen [ ] 2. Upper abdomen [ ] 3. Waist [ ] 4. Others specify …….

23. What are the signs and symptoms you do experience, (tick as many options as it applies to you)

S/N	Signs and symptoms of dysmenorrhea	Yes	No
a.	Headache		
b.	Backache		
c.	Dizziness		
d.	Loss of appetite		
e.	Weakness		
f.	Stomach discomfort		
g.	Nausea and vomiting		

h.	Diarrhoea		
i.	Nagging		
j.	Mood swing		
k.	Feeling unhappy		
l.	Waist pain		
m.	Over sleeping		
n.	Eating too much		
o.	Tenderness of the breast		
p.	Pimples on the face		
q.	Cramps		
r.	Stiffness of the muscle		
s.	Others (please specify)		

SECTION E: COPING MECHANISM FOR DYSMENORRHOEA

24. Do you take drugs to reduce or manage dysmenorrhoea? Tick 1. Yes, 2. No.

S/N	Types of drugs	Yes	No
a.	Paracetamol		
b.	Felvin		
c.	Buscopan		
d.	Diclofenac		
e.	Ibrupofen		
f.	Oral contraceptive pills		
g.	Injection		
H	Herbal drugs		
i.	Alcohol		
j.	Others (please specify)		

25. What home remedies do you use in combination with the drugs or without the drugs (tick as many options as it applies to you)

S/N	Home remedies	Yes	No
a.	Exercise		
b.	drinking warm water		

c.	Sipping hot Lipton		
d.	Sit bath		
e.	Massaging the stomach with hot water in a bottle		
f.	Sex		
g.	Others (please specify)		

26. What is the reason for taking the drugs ticked?

S/N	Reasons for taking drugs	Yes	No
a.	It reliefs me of the pain		
b.	it is cheap and affordable		
c.	it is effective		
d.	A health professional recommended it for me		
e.	A friend introduce the drug to me		
f.	Others (please specify)		

27. Do you experience any of the side effects after taking any of the above listed drugs?

1. Yes 2. No

If yes, indicate the type of side effect experienced.

S/N	Side effects	Yes	No
a.	Indigestion		
b.	Ulcer		
c.	Vomiting		
d.	Drastic reduction in the flow of blood		
e.	Swollen face/ body		
f.	Others (please specify)		

29. Where else do you seek help or care from when experience dysmenorrhoea?

1. Religious centres [ ] 2. Tradomedical centres [ ] 3. Hospitals [ ] 4. Patent drug dealers [ ] 5. Other (please specify)…….

30. Why do you prefer the option chosen?.....

31. Which of the following is the coping mechanism for dysmenorrhoea you used?

S/N	Coping mechanism for dysmenorrhoea	Yes	No
a	Exercise		

b	Drinking of hot tea ,water and herbs		
c	Consulting a physician or gynaecologist		
d	Taking drugs		
e	Hot shower		
f	Avoidance of sugary foods or drinks		
g	Rest /sleep		
h	Heating pads		
i	Alcohol		
j	Sex		
k	Massage		
l	Visiting patent drug dealers		
m	Pregnancy and abortion		
n	Others (please specify)		

32. What are the perceived effects of dysmenorrhoea?

S/N	**Perceived effects of dysmenorrhoea**	**Yes**	**No**
a.	Stress		
b.	Drug abuse		
c.	Intake of alcohol		
d.	Risky behaviour like sex		
e.	Unwanted pregnancy		
f	Abortion		
g	Others (please specify)		

33. Which of the following sources of information can influence your choice of management patterns? (*Tick as many that applies*)

S/N	**Sources of information**	**Yes**	**No**
a.	Health professional		
b.	Parents		
c.	Friends		
d.	Teachers		
e.	Traditional healer		

f.	Mass media		
g.	Religious leaders		
h.	Other (please specify)		

34. Do you have any comments or suggestions about coping with dysmenorrhoea you can share with dysmenorrhea women to help improve their quality of life……

Thanks for your co-operation.

APPENDIX III

ETHICAL APPROVAL

TELEGRAMS..... TELEPHONE.....

OYO STATE: THE PACESETTER

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No. .....

All communications should be addressed to

the Honorable Commissioner quoting

Our Ref. No.AD 13/479/978 29th October, 2018

The Principal Investigator,
Department of Health Promotion and Education,
Faculty of Public Health,
College of Medicine,
University of Ibadan,
Ibadan.

Attention: Obasi Blessing

ETHICS APPROVAL FOR THE IMPLEMENTATION
OF YOUR RESEARCH PROPOSAL IN OYO STATE

This is to acknowledge that your Research Proposal titled: "Knowledge and Experience of Dysmenorrhoea among Deaf Secondary School Girls in Ibadan, Oyo State " has been reviewed by the Oyo State Ethics Review Committee.

2. The committee has noted your compliance. In the light of this, I am pleased to convey to you the full approval by the committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations, in line with this, the Committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of findings as this will help in policy making in the health sector.

4. Wishing you all the best.

OYO STATE RESEARCH ETHICS REVIEW COMMITTEE
MINISTRY OF HEALTH

Dr. Abbas Gbolahan
Director, Planning, Research & Statistics
Secretary, Oyo State, Research Ethics Review Committee