UNIVERSITY OF CAPE COAST

PREVALENCE, KNOWLEDGE, ATTITUDE AND HEALTH SEEKING BEHAVIOUR ON VAGINAL CANDIDIASIS AMONG ADOLESCENT GIRLS IN SENIOR HIGH SCHOOLS IN THE CAPE COAST METROPOLIS

ROSEMARY SITSOFE AYEBI-ARTHUR

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Rosemary Sitsofe Ayebi-Arthur

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BY

ROSEMARY SITSOFE AYEBI-ARTHUR

Thesis submitted to the Department of Health, Physical Education and Recreation of the Faculty of Science and Technology Education, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree in Health Education

JUNE 2021

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: ..... Date: .....

Name: Rosemary Sitsofe Ayebi-Arthur

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature: ..... Date: .....

Name: Dr. Thomas Hormenu

Co-Supervisor's Signature: ..... Date: .....

Name: Dr. Edward Wilson Ansah

ABSTRACT

Vaginal discharge affects every female at a point in her lifetime and among other conditions, could be *Candida* infection, with varying levels of severity and complications, especially among adolescents. The study's objectives were to determine the prevalence of vaginal candidiasis in teenage girls attending senior high schools in Cape Coast Metropolis and to evaluate the students' knowledge of the condition, their attitudes towards it, and their behaviour in terms of seeking out health information about it. For this investigation, a descriptive cross-sectional survey design was chosen. The study involved 700 female students from two all-female senior high schools which were purposively sampled and two mixed-sex senior high schools that was randomly selected using the RANDBETWEEN function in MS Excel. Questionnaire was used to collect the data and analysed using descriptive statistics frequencies, percentages and regression in SPSS version 21. The study found prevalence level to be quite high among the adolescent in senior high schools in Cape Coast Metropolis. Ninety-three percent of the respondents knew that vulvovaginal candidiasis could affect the reproduction system but 77% had no knowledge on the causative organism and the appropriate medications used in treating the condition. The study found that most respondents attached a lot of importance to personal hygiene stating that lack of personal hygiene predisposes them greatly to acquiring vulvovaginal candidiasis. It is recommended that there is the need for public health care providers to offer skills in efficient communication, health education and awareness creation on common health conditions like vulvovaginal candidiasis.

Keywords

Candida albicans

Candida rugosa

Recurrent vulvovaginal candidiasis

Vaginal discharge

Vulvovaginal candidiasis

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DEDICATION

To my family and the memory of Dr. Dora Baaba Aidoo.

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CHAPTER ONE

INTRODUCTION

Background to the Study

Several regions of the body are affected by the fungal infection known as candidiasis. Based on the location affected and the infectious bacteria, this infection manifests signs and symptoms that vary from person to person. In any part of the body, including the mouth, throat, gut, vagina, and skin, Candida spp. can exist without causing any problems. According to estimates, 20% of women typically have *Candida spp.* in the vagina but show no symptoms. (Sobel, 2007). Hence *Candida spp.* can multiply and cause an infection if the environment within the vagina changes in a way that encourages their growth. The environmental changes may occur in the vagina as a result of hormones, medicines, or modifications within the immune system (Pikuza, Chilova, & Ishchenko, 2008). These changes are more pronounced in adolescents because they are sexually active and mostly engaged in risky sexual practices with less hygienic reproductive behaviour and accompanying infections of sexually transmitted infections (Ogharaerumi, 2012).

Vaginal discharge affects every female at a point in her lifetime. Among other conditions, it could be candida infection, with varying levels of severity and complications, especially among adolescents. Vulvovaginal candidiasis is the second most common cause of genital infection in women who are fertile. The actual occurrence is unknown, despite the fact that it is a concern in public health that is of global significance. (Rodrigues, Simões, & Diniz, 2009).

In some form or another, vaginal discharge affects 95% of young women globally. (Kostick et al., 2010; Ilankoon, Goonewardena, Fernandopulle, & Perera, 2017). Vulvovaginal candidiasis has been left out of the category of sexually transmitted illnesses because it is a non-notifiable condition. Researcher focus, funding, and public health authorities' attention to vulvovaginal candidiasis are quite low. Epidemiologic information on risk factors and pathogenic pathways is still not sufficiently understood. Most intriguingly, there are still no established standards of care for diagnosis or treatment. Unfortunately, because of shyness and occasionally stigma, the majority of those affected do not seek timely treatment, which makes it more challenging to get good care and causes the illness to return. (Richard, Asare, & Paul, 2017).

Infectious or non-infectious conditions may be to blame for irregular vaginal discharge. Bacterial vaginosis, such as vaginitis and candida, as well as sexually transmitted diseases like Neisseria gonorrhoea and Trichomonas vaginalis are examples of the infectious causes. Contrarily, non-infectious causes of infection include foreign objects such condoms and tampons that have been retained, genital tract cancer, fistulae, cervical polyps, allergic reaction, and douching (Chadambuka, Chimusoro, Maradzika, Tshimanga, Gombe, & Shambira, 2011). Other risk factors for infection include using antibiotics, taking steroid or birth control pills, having diabetes, using scented soaps or lotions, taking bubble baths, having pelvic inflammatory disease (PID), getting a pelvic infection after surgery, and having vaginal atrophy. (Baah-Ennumh, Amponsah, & Owusu, 2012).

Women from temperate and tropical regions of the world are susceptible to vaginal candidiasis. Women from temperate and tropical regions of the world are susceptible to vaginal candidiasis. Women from temperate and tropical regions of the world are susceptible to vaginal candidiasis. Women from temperate and tropical regions of the world are susceptible to vaginal candidiasis. (Lisiak, Klyszejko, Pierzecholo, & Wlosinska, 2000; Pikuza, Chilova, & Ishchenko, 2008). These infections may last a very long time when they are asymptomatic. Nonetheless, it carries significant health concerns, particularly when pregnant (Jombo, Akpera, Hemba, & Eyong, 2011). For instance, in Poland, treating pregnant women with recurrent candidiasis was linked to multiple cases of bacterial vaginosis and preterm labor risks (Adejo, Randawa, Maryam, & Adeyanju, 2019). Similar to this, Minnesota, USA reports that premature labor can cause candida chorioamnionitis, which can lead to congenital candidiasis in the newborn (Pawlaczyk, Friebe, Pawlaczyk, Sowinska-Przepiera, & Wlosinska, 2006).

Although vaginal candidiasis (moniliasis or thrush) is the most prevalent and usually upsetting infection for many pregnant women, reproductive tract infections are common during pregnancy (Elnosh, 2015). Wilkinson recognised candidiasis for the first time in 1849 as a yeast or fungus infection of the vulva and/or vagina, with Candida albicans being responsible for 70–90% of cases. (Denning, Kneale, Sobel, & Rautemaa-Richardson, 2018).

The majority of women will experience vaginal candida infection at a certain stage of their lives. (Summers, 2011), and 40–45% of them have two or more bouts. Most cases—roughly 75%—occur during the reproductive years (Farida, Sahlan, Rohmatin, & Adawiyah, 2020). Recurrent vulvovaginal

candidiasis (RVVC), commonly known as chronic recurrent thrush, affects roughly 36% of women worldwide yet is largely underdiagnosed and severely distressing (Edwards, Schwartz, Schmidt, Sobel, Nyirjesy, Schodel,... & Hennessey 2018). In the United States of America, for instance, candida is the second-most prevalent cause of vaginal infections. In the United States of America, for instance, candida is the second-most prevalent cause of vaginal infections. (Novosad, Fike, Dudeck, Allen-Bridson, Edwards, Edens, ... & Kuhar, 2020). STIs made for 6–10% of clinic visits in Zimbabwe, and in the small town of Zvishavane in rural Zimbabwe, they constituted one of the leading five causes of outpatient consultations. (Chadambuka et al., 2011). STI cases continued to rise, according to statistics, rising by 31% from 66 per 1000 in 2002 to 97 per 1000 in 2005. (Chadambuka et al. 2011). Also, it is estimated that 69 million new STI cases are reported in Sub-Saharan Africa each year. These infections are a significant factor in the region's poor reproductive health, particularly among women (Muhammed, BB, & Olorukoba 2021). Because STI patients more frequently seek treatment from private providers with poor data management, the problem's scope is probably worse.

Adolescents in Ghana have an abnormally higher risk of having unprotected sex and contracting diseases that affect reproductive health, like vulvovaginal candidiasis (VVC). According to the Ghana National Demographic and Health Survey (2014), more young women than men in the same age range had sexual contact before the age of 15 to 18. The majority of these are explained by outside variables. For instance, Awusabo-Asare et al. (2006) reported that peer pressure, partner deceit, experimentation, and the fulfilment of sexual needs were the main reasons why most adolescents engaged

in sex. Moreover, Ankomah et al. (2013) discovered that young people in Cape Coast's premarital sex was associated with either monetary or material gains.

Statement of the Problem

Sexually Transmitted Infections (STIs), more especially, vulvovaginal candidiasis, constitute a critical public health concern without an easy solution. This is due to the fact that STIs are engrossed in human behaviour which creates a fundamental societal problem (Blay, et al., 2020). According to estimates, 30% of women experience atypical vaginal discharge, which is unquestionably a high rate for developing nations with low socioeconomic status (Masand, Patel, & Gupta, 2015). The most common symptom of STIs and reproductive system infections is abnormal vaginal discharge. Masand, Patel, and Gupta (2015). The attitudes and behaviours of females toward prevention and care are directly impacted by their awareness of candidiasis and abnormal vaginal discharge (Zaher, Khedr, & Elmashad, 2017). This is because women's health and wellbeing depend on good health habits. Women's self-esteem and personal confidence are negatively impacted by the VVC. It could result in introital dyspareunia, which is characterized by a progressive lack of genital stimulation, and other psychosexual issues (pain is the strongest reflex inhibitor of vaginal congestion and lubrication). Second, a person may lose their desire and avoid sexual closeness out of concern that they would hurt themselves or have another case of Candida vulvovaginitis. If you tell your doctor and partner about the disadvantages of such a recurrent infection, it could also make you feel uncomfortable, uneasy, ashamed, or unworthy.

Many teenagers in Ghana engage in sexual activity, which increases the likelihood that they have vaginal candidiasis. The majority of teenagers are also

unaware of the warning signals, symptoms, transmission route, treatment options, and appropriate mindset regarding vulvovaginal candidiasis (Karim, Magnani, Morgan, & Bond, 2003). Furthermore, it appears that there is a lack of data regarding the state of public health in Ghana that may serve as the foundation for initiatives.

Purpose of the Study

The purpose of the study was to ascertain the prevalence of vaginal candidiasis among adolescent girls in senior high schools within Cape Coast Metropolis. The study was also to assess the students' knowledge of the infection as well as their attitude and health-seeking behaviour towards the infection.

Research Questions

The study was guided by the following research questions:

1. What is the prevalence of vulvovaginal candidiasis among adolescent girls in the senior high schools in Cape Coast Metropolis?
2. What is the level of knowledge on vulvovaginal candidiasis among adolescent girls in the senior high schools in Cape Coast Metropolis?
3. What is the attitude towards vulvovaginal candidiasis among adolescent girls in the senior high schools in Cape Coast Metropolis?
4. What makes adolescent girls in senior high schools in Cape Coast Metropolis the seek healthcare during vulvovaginal candidiasis infection?

Significance of the Study

The results of this study will be helpful to second cycle students, Ministries of Health and Education, educators, parents, reproductive health specialists, and the general public. In order to prevent sexually transmitted

infections or to reduce complications, it will also teach the adolescents how to have healthy sexual interactions and practises. It is anticipated that the findings of this study would spur the Ministries of Health and Education to create effective sex education programmes for secondary school students. The study's findings are also anticipated to inspire the Ministries of Education and Health to employ and outfit more peer educators. Secondary school students will receive further instruction on the proper understanding and attitude regarding VVC, as well as the best preventative and therapeutic measures.

The study will also assist instructors and counsellors in understanding and appreciating their students' knowledge of and attitudes around STIs in general and in determining the best ways to assist them with reproductive health. In order to stop the spread of illnesses, parents and teachers will be reminded of their responsibilities by the study's findings to educate adolescents on sex-related issues.

Delimitations

This study is delimited to students of Holy Child Senior High School Wesley Girls Senior High School, Efutu Senior High and University Practice Senior High Schools. These schools have a large female student population, and the two female schools are GES category A schools. University Practice and Efutu senior high schools are GES category B and C respectively in the Cape Coast Metropolis. These schools admit female students from the various parts of Ghana. The students have varied backgrounds and experiences as far as the vulvovaginal candidiasis infection is concerned. Again, the study focussed only on females at the senior high school level because majority of these students at this level are adolescent. It is worthy to note that the adolescent stage presents

several challenges and opportunities in all spheres of life, especially in the area of reproductive health.

Limitations

Self-reporting is a problem since it makes it difficult for people to be truthful. Self-reported responses might have been overstated. There are many biases that could have affected the results, including social desirability bias, and it's possible that respondents were too embarrassed to disclose their personal information. Caution should be used when interpreting the findings since the technique of data collection may have induced participants to provide replies that were more socially desirable than they would have been in real life.

Organisation of the Study

There are five chapters in the work. The first chapter of the inquiry presents the problem statement, the research questions, the significance of the study, its delimitation, its constraints, and its organisation. The second chapter reviews pertinent material on vulvovaginal candidiasis. In the third chapter, which covers study design, population, sampling technique, data collection tool, data collection technique, and data processing and analysis methods, the research procedures are described in detail. While chapter five covers the study's summary, conclusions, and suggestions, chapter four gives the results and debates.

CHAPTER TWO

LITERATURE REVIEW

The aim of the study was to determine the prevalence of vaginal candidiasis in teenage girls attending senior high schools in Cape Coast Metropolis, and to then evaluate the students' attitudes and health-seeking behaviours regarding the infection as well as their understanding about the condition. This chapter discusses pertinent research on female students' attitudes and understanding of vaginal candidiasis. The review is organised under the following sub-headings: what vaginal candidiasis means, what students know about it, how they feel about it, how common it is, and what can be done to prevent it. In this chapter, the Health Belief Model (HBM) and Behavioural Model of Health Services Usage the theoretical foundations of the study are further developed.

Meaning of Vaginal Candidiasis

Vulvovaginal candidiasis (VVC) is the most prevalent vaginal yeast infection associated with vulvovaginitis. The high rate of female mortality has caused this issue. Acute and recurrent VVC may be further subdivided into less severe forms based on how often they occur. The vaginal environment is ideal for cultivating Candida. Acute ventricular tachycardia (AVTC) is a frequent illness that may be readily recognised and treated (Foxman, Barlow, D'Arcy, Gillespie, & Sobel, 2000). As many as 75% of women may have it at some point in their lives. Recurrent VVC (RVVC) is characterised as four or more episodes with cultural support each year, and it is believed that 5% of women have RVVC. The real prevalence of VVC is likely underreported since so many people choose to self-diagnose and self-treat with OTC medications (Irving,

Miller, Robinsons, Reynolds, & Copas, 1998). Women with acute VVC can have copious amounts of white discharge in addition to other symptoms of acute vaginitis.

Knowledge of Students on Vulvovaginal Candidiasis

One's perspective on a phenomena is influenced by one's level of familiarity with it. The emotional toll of recurrent genital infections was investigated in a research by Johnson, Griffiths, and Humberstone (2010). They conducted an online omnibus survey of 6,010 women between the ages of 16 and 55 in the US and Europe (France, Germany, the Netherlands, Sweden, and the UK) to determine the prevalence and level of awareness of VVC and bacterial vaginosis. Then, 1,945 female participants filled out a lengthy survey on their personal encounters and perspectives on vulvovaginal yeast overgrowth and bacterial vaginosis. Johnson et al. (2010) found that of the women who responded to their online survey, 97% reported having heard of vulvovaginal candidiasis.

Only 30% of women had heard of bacterial vaginosis, and of those only 9% thought they had met it themselves, yet 44% of women reported having vulvovaginal candidiasis. The study's participants attributed vulvovaginal candidiasis only to antibiotic usage, although they also attributed symptoms of other diseases to improper hygiene, poor health, and STIs. Vaginal infections were commonly diagnosed by doctors in countries where OTC treatments were accessible, but many women also diagnosed themselves. Vaginal candidiasis definition/definition. The study's authors concluded that while the participants had a general understanding of vaginal infections, their knowledge of certain infections was limited, and their self-reported incidence rates for these

infections were significantly lower than prevalence rates, pointing to misdiagnosis.

Because there is little information on the symptoms and indications of the condition, Kauffman et al. (2000) claim that most persons with candiduria—the presence of Candida in the urine—suffer a perfectly benign process. In other cases, however (Galle & Gianinni, 2004), candiduria may be a symptom of widespread candidiasis. In certain parts of Ghana, there have been instances of urinary Candida infections. For instance, according to a Ghanaian research by Ayeh-Kumi et al. (2007), urinary Candida infections affected both men and women more often than they did in the previous year, rising from 3.5% to 5.1%. Ayeh-Kumi et al. (2007) were unable to identify the other species, but they also underlined that Candida albicans may not be the sole species to blame for the high prevalence of Candida infection that had been detected.

Attitude towards Vulvovaginal Candidiasis

Gonçalves et al. (2016) claimed that the vaginal flora is distinct and very variable. The delicate balance between the vaginal Candida colonisation and the host environment might be disrupted by physiological or non-physiological changes. This promotes yeast growth at the colonisation site. Isolated cases of VVC have been shown to occur in otherwise healthy women (Goncalves et al., 2016). This disease is associated with host- and behavior-related characteristics that favour VVC, which alters the vaginal environment. Several host-related risk factors have been proposed, including genetic predispositions, immunosuppression, pregnancy, hormone replacement therapy, uncontrolled diabetes, immunosuppression, and the use of antibiotics and glucocorticoids (Sobel, 2007).

There are behavioural risk factors for VVC, including the non-use of spermicides, condoms, IUDs, and oral contraceptives. Some sexual, hygienic, and fashion choices can increase one's vulnerability to disease and illness. (Patel et al., 2004; Sobel, 207). The fall in the vaginal bacterial microflora, the principal barrier against Candida in the vagina, is assumed to be the reason of the correlation between antibiotic usage and VVC, as suggested by Gibbs (1987). Many different Lactobacillus species may be found in the vaginal microbiomes of healthy premenopausal women, including L. iners, L. crispatus, L. gasseri, L. jenesenii, L. acidophilus, L. casei, L. vaginalis, and L. salivarius. Several authors (Auger & Joly, 1980; Cribby et al., 2008; Eschenbach, 1989) have asserted this. Lactobacilli have been linked to a wide variety of anti-Candida defence mechanisms. Competing for food is a plausible explanation for the observed interactions between Lactobacillus and Candida species. However, experimental findings demonstrate that both Lactobacilli and Candida survive when placed "shoulder to shoulder," suggesting that this strategy is not optimal. as reported in (Savage, 1969).

Vulvovaginal candidiasis (VVC) is one of several bacterial infections that may arise from having an intrauterine device (IUD) inserted. In two separate studies (Lal et al., 2008; Zahran et al., 2015), researchers found that this was the case. While some studies (Agarwal et al., 2004; Hodoglugil et al., 2000) failed to find a connection between VVC and IUD usage, others have shown that IUD use is a major risk factor for both sporadic and recurrent VVC. IUD use was higher among women with VVC and RVVC infections (13.1-43.8%) than among women without these infections (2.9-37.6%). Eid et al. (2013); Amouri et al. (2011); Moradi et al. (2019).

Numerous studies have shown that IUD users are more likely to get VVC and vaginal Candida colonisation than those who do not use the device. According to many studies (Chuku et al., 2019; Cetin et al., 2007; Demirezen et al., 2005), this is true. In addition to acting as a Candida reservoir, IUDs may alter the cervico-vaginal microbiota by decreasing Lactobacilli. Previous studies have indicated that IUD users are more likely to be colonised by vaginal yeast than those who do not use the device (Demirezen et al., 2005).

In contrast, using an IUD may change or remove cervical mucus, a powerful defence against ascending infections, and may leave the cervico-flora more open to the formation of pathogenic Candida hyphae (Demirezen et al., 2005). As a result of the link between IUD use and diseases like VVC, some authors have urged for strict limits on IUD use and frequent monitoring for infections during use. Demirezen et al. (2005), Ilkit Guzel (2011), and Auler et al. (2010) are a few examples. Many infected people need to have their IUDs removed, and it has been proven that doing so is essential for preventing remission in women with RVVC (Auler et al., 2010; Chassot et al., 2008).

Some writers have linked the use of spermicides and/or condoms to an increased risk of VVC. Epidemiological studies have shown that people with VVC are more likely to use spermicides (56.3% vs. 13.5%) and that the condom usage increases the risk of VVC (40.2% vs. 37.9%) for people with VVC (Geiger & Foxman, 1996).

Patients with Candida infections are more likely to use condoms than non-Colonized Women (11% vs. 5%) and RVVC patients are more likely to use spermicide and/or condoms than healthy females (21.4% vs. 10%) (Eckert, 1998). Common spermicidal preparation nonoxynol-9 (N9) is assumed to be the

root cause of the correlation between spermicides/condoms and VVC development. The study was conducted by McGroarty et al. (1990). In order to prevent the spread of sexually transmitted diseases, a non-ionic detergent known as N-9 may break down the cell membranes of sperm and other pathogens in the same way (North, 1988). Since this chemical also inhibits commensal vaginal organisms, especially Lactobacillus species (Hooton et al., 1994; Watts et al., 1999), which are essentially the vaginal defences employed to battle Candida, it disrupts the ecological balance of the vaginal microbiota.

Research has shown that N-9 causes genital irritation by damaging the vaginal epithelium (Niruthisard et al., 1991; Roddy et al., 1993). And as McGroarty et al. (1990) pointed out, Candida bacteria may metabolise the spermicidal compound N-9, which may alter surface characteristics and promote Candida adhesion to epithelial cells. These researchers discovered that vaginal isolates of Candida tropicalis, Candida parapsilosis, and Candida albicans adhered more strongly to human epithelial cells after being treated with N-9.

Many factors, including but not limited to one's knowledge of the issue, contribute to varying perspectives on vulvovaginal candidiasis. Many women over the globe think that feminine hygiene has a significant role in their physical and emotional well-being, according to a cross-sectional study of women's attitudes of vaginal infections done by Srivastava et al. (2004). They saw this result in a variety of new practises, including vaginal cleaning, which is done to keep the vagina clean. According to their findings, frequent vaginal treatments include cleansing, drying, and "tightening" the vagina with natural, home, or

commercially available items like Vicks or dousing it with water, detergent, or other materials like alum powder.

Women all across the globe engage in vaginal action for a wide range of reasons. The most common reasons given for condom use were the desire to prevent disease or pregnancy, to conform to the norms or preferences of a sexual partner, or to follow the practises that had been instilled in us by our mothers and grandmothers at a young age (Srivastava et al., 2004).

Women who suffer with recurrent vulvovaginal candidiasis (VVC) have severe physical discomfort, annoyance, and even psychological ramifications due to the condition's notorious difficulty in treating with conventional treatment and the preference of many medical practitioners. Some medical professionals elect not to provide alternatives because of the potential for devastating side effects and the dearth of data supporting the usefulness of alternative treatments. Reference: (Ness et al., 2003). Several aspects of women's personal care and appearance have been identified as potential behavioural risk factors for vulvar and vaginal cancer. Wearing synthetic pants, clothing that is too tight or doesn't allow for enough air circulation, or both has been linked by many authors to a more rapid progression of vaginal venous congestion. A Brazilian research found that the risk of developing VVC was 65.8 percent higher among women who wore tight or synthetic pants compared to those who did not (Hollanda et al., 2007).

Another Italian research indicated that those who had RVVC were more likely to wear synthetic trousers than those who hadn't recently reported having the condition. Research by Corsello and coworkers (2003). Furthermore, a US study of RVVC patients indicated that women who wore pantyhose were much

more likely to report a VVC episode than those who did not (40.1% vs 16.6%). In 2004, (Patel et al. Although some research has linked wearing tight clothing or synthetic trousers to the development of VVC (Foxman, 1990; Patel et al., 2004; &. Goncalves et al., 2016), other research has not found this to be the case. Also, Gonçalves, Ferreira, Alves, Henriques, Azeredo, and Silva (2016) point to evidence that wearing synthetic pants might alter the vaginal environment and perhaps contribute to VVC by triggering local allergic and hypersensitive responses.

Other behavioural risk factors for the development of VVC include vaginal douching and the use of pantyliners. Furthermore, several methods of feminine hygiene have been linked to regional hypersensitivity and allergic reactions. Patients who used pantyliners were shown to have a significantly greater VVC rate (46.6 vs 14.3%) than those who did not. those who use solutions for vaginal douching on a regular basis have been shown to have a 26% higher risk of Candida colonisation in their vagina than those who do not. There is also evidence that women who are otherwise healthy douch more often than those who suffer from VVC or RVVC. Spinillo et al. (1993), Corsello et al. (2003), and Bradshaw et al. The biological balance of the vaginal canal is hypothesised to be disturbed by vaginal douching because it encourages mechanical cleansing of commensal bacteria and introduces foreign substances that may cause allergic responses and pH changes (Ness et al., 2003). As an added precaution, women have been told to limit their use of scented soaps, bubble baths, powders, and vaginal sprays, all of which have the potential to irritate the vaginal lining and modify the vaginal microbiota (Watson & Calabretto, 2007).

To learn more about women's perspectives and health-seeking behaviour about vaginal discharge, a cross-sectional survey was administered to female patients at a large public hospital in Katmandu, Nepal. All of the responses from the ladies indicated a consensus that it would be best to talk to a loved one. Most of the women in Richard, Asare, and Paul's (2017) research on female candidiasis sought help from friends, family, and even their spouses. It was also found that shame was a driving factor for everyone who ignored advice. Most women who went to the hospital did so in the company of a friend, partner, or family member. This suggests that these women's loved ones were aware of their health issues.

Women in Gujarat often believe that avoiding "hot" meals is an effective treatment for a variety of ailments caused by candida infection (Chapple, 2001). Some British South Asian women, according to Chapple (2001), alter their diets in an effort to alleviate the discomfort associated with gynaecological issues. Many women have employed traditional techniques to treat vaginal discharge, as reported by Chapple's (2001) research on the perspectives and experiences of women of South Asian descent with regard to vulvovaginal candidiasis. Researchers conducted in-person interviews with participants. Vaginal candidiasis treatment varies greatly amongst women, as was shown. Even though women could get a free prescription for Canesten by seeing their physicians, few of them actually did so.

Prevalence of Vulvovaginal Candidiasis

According to some estimates, anywhere from 10–25% of women worldwide suffer with candida vulvovaginitis (Denning, Kneale, Sobel, & Rautemaa-Richardson, 2018; Foxman, Muraglia, Dietz, Sobel, & Wagner,

2013). Vaginal yeast isolates have been found in anywhere from 5.4% to 48.4% of women, with the exact percentage varying by age, region, and socioeconomic status (Abu-Elteen et al., 1997; Abruquah, 2012). Candida vulvovaginitis is 40.6% common in Nigeria, according to a research by Enweani et al (2001). The Komfo Anokye Teaching Hospital in Kumasi does not have up-to-date data on the incidence of Candida infections. The incidence of Candida species isolation from high vaginal swabs has been increasing, according to unpublished data from the Komfo Anokye Microbiology Laboratory at the Teaching Hospital in Kumasi, Ghana. In 2005, 483 out of 2,686 high vaginal swabs sent into the microbiology lab included Candida species, representing an 18% frequency. In 2008, 826 out of 2,491 high vaginal swabs were positive for a Candida species, bringing the total to 33 percent.

Feglo and Narkwa (2012) study at KATH, which was published in 2012, found that fungus infections are common in Ghana. On their frequency and antifungal susceptibility, there is, nevertheless, a scarcity of recent scientific data. Approximately 24.4% of women in Ghana attend the clinic with Candida infections, according to a second research, which also revealed that these women commonly also have vaginal itching, burning, and discharge in addition to vaginal yeast infections (Deceuninck et al., 2000). Frequently prescribed antifungal drugs for treating yeast infections include flucytosine, fluconazole, amphotericin B, voriconazole, clotrimazole, nystatin, capsofungin, and ketoconazole. The problem with employing antifungal medications is the formation of drug-resistant bacteria, which is in addition to safety and cost (Pfaller et al., 2005). According to Pfaller et al. (2005), improper usage and

prescription of antifungal drugs has been linked to the development of antifungal resistance in yeast.

Candidaemia is a kind of community-onset yeast infection that has been shown to be on the rise throughout the world as a consequence of advances in medical technology (Pfaller et al., 2011). Self-medication with antifungal drugs is encouraged by their availability as over-the-counter products in Ghana, which may contribute to the development and spread of antifungal resistance. The KATH lacks current data on the susceptibility profiles of various yeast species to various antifungal agents. The emergence of antifungal resistance in yeasts and other harmful fungi is also not being monitored since Ghana does not have a national monitoring programme.

Itching, burning, soreness, and excessive vaginal discharge are all signs of candida vulvovaginitis in women. Itching may come from the inside as much as the outside. This is very unpleasant and harmful to women's health. In medical terms, the presence of Candida in the urine is known as candiduria. The candiduria experienced by the vast majority of patients is completely harmless (Kauffman et al., 2000). When extensive candidiasis is present, however, candiduria may be a symptom (Nassoura et al., 1993). Candida infections of the urinary tract have been documented in several parts of Ghana. The incidence of urinary Candida infection increased from 3.5% in 2001 to 5.1% in 2003, according to a research conducted by Ayeh-Kumi et al. (2007) in Accra, Ghana. However, additional species that may have contributed to the high prevalence of Candida infection were not found.

Several different species of the genus Cryptococcus may cause illnesses known together as cryptococcosis. According to estimates, between eighty

percent and ninety five percent of patients living with HIV are affected by oropharyngeal candidiasis (Hodgson et al., 2002), making it the most common opportunistic fungal disease in the world. Oropharyngeal candidiasis is often caused by the yeast Candida albicans. According to data collected from HIV/AIDS patients, Enwuru et al. (2008) found a prevalence of 52.4% and a mortality rate of 77.7%.

Antifungal medicines are the mainstay of therapy for yeast infections since there are no approved immunisations to prevent them. Vulvovaginal candidiasis is treated with antifungal drugs such clotrimazole, nystatin, fluconazole, and ketoconazole used topically. Amphotericin B, voriconazole, flucytosine, and capsafungin are only few of the antifungal drugs used to treat systemic yeast infections.

According to research by Feglo and Narkwa (2012), Candida albicans was the most common of the isolated species, with a frequency of 33 (44.3%), followed by Candida glabrata (12 (17.9%), Candida tropicalis (8(11.9%), Candida dubliniensis (4(6%), Candida krusei (3(4.5%), and Candida sake (2(3%), while Candida guilliermondii and Candida parapsilosis each had a frequency of 1 (1.5%). All isolates of yeast were susceptible to flucytosine, amphotericin B, fluconazole, itraconazole, and voriconazole (MICs of 0.125-8mg/l), with the exception of C. albicans, C. glabrata, C. tropicalis, and C. krusei. Voriconazole was the only treatment to which the yeast did not develop resistance. None of the Candida krusei strains tested were susceptible to fluconazole (MICs >= 64 mg/l).

Yeast resistance rates range from 4.5% to 22.2% when exposed to flucytosine, amphotericin B, fluconazole, and itraconazole. While many other

species of yeast were isolated, they determined that Candida albicans was by far the most frequent among the clinical samples they investigated (with the exception of cerebrospinal fluid, where Cryptococcus neoformans was the most common isolate). Isolates showed various degrees of resistance to flucytosine, amphotericin B, fluconazole, and itraconazole (ranging from 4.5% to 22.2% overall). No strains resistant to voriconazole were identified. The high percentage of resistance (22,4%) in Ghana indicates the need for further study. This investigation of yeast species and antifungal susceptibility patterns was the first of its kind in Ghana.

The development of drug-resistant strains during treatment is another problem associated with the use of antifungal medications (Talaro & Talaro, 1996). Antifungal resistance in yeast has been linked to the improper use and prescription of antifungal drugs (Talaro & Talaro, 1996). Self-medication with antifungal drugs is encouraged by their availability over-the-counter in Ghana, which may contribute to the development and spread of antifungal resistance.

Vulvovaginal candidiasis is more common in women who don't practise good hygiene, and it has the same devastating effect on reproductive health as not utilising vaginal douches and sprays. Sobel (2015); Shaaban et al. (2013); Youssef et al. (2013); Mostafa. There is a high prevalence of abnormal vaginal discharge and the associated challenges because of women's perceptions about the causes, sufficient health habits, lack of self-prevention, and culture of silence around the topic. According to a group of researchers (Li et al., 2010). Vulvovaginal candidiasis and similar vaginal secretions have intimate ties. An increase in Candida spores in the vaginal environment has been hypothesised to initiate epithelial invasion, which may lead to VVC (Ferrer, 2000). Therefore,

potential causes of an increased number of vaginal blastopores have been suggested as risk factors for VVC. Inadequate personal hygiene, for example, may lead to an increase in the spore load of Candida, which has its origins in the intestinal reservoir. This is supported by research (Ferrer, 2000). Women with poor genital cleanliness were more likely to get VVC (36%) compared to those with high personal hygiene (15.6%). Those findings may be seen in (Ahmad & Khan, 2009). In addition, an Iranian research indicated that 63% of women with VVC had low levels of education, suggesting that these women may be less likely to engage in proper genital hygiene practises (Faraji et al., 2012). In fact, studies have shown that the stomach may be the source of Candida microbial colonisation of the vagina (Holanda et al., 2007). Poor genital cleanliness may contribute to the spread of Candida spores in the vagina, despite the fact that the intestines are thought to have only a minor role in VVC (Sobel, 2007).

In addition to inadequate hygiene, engaging in certain sexual activities, such as engaging in frequent sexual activity or engaging in responsive orogenital activity, may lead to an increase in the Candida blastopore burden. These sexual activities may have an effect on the initial infection as well as subsequent VVC episodes. Multiple studies (Eckert, 1998; Foxman, 1990) have associated high monthly intercourse frequency to recurrence, VVC development, and vaginal Candida colonisation. Reference: (Spinillo et al., 1993, 1995). Further, studies have revealed that VVC is more common in the third generation, which has led some to speculate that this is because of the increased sexual activity seen among this age range. Ahmad & Khan (2009); Ako-Nai et al. (1993); Okungbowa et al. (2003). Despite the fact that

vulvovaginal candidiasis affects women who are not sexually active and that women may have Candida vaginal colonisation, some evidence shows that the illness is sometimes transferred sexually (Schmid et al., 1993; Boatto et al., 2007). Therefore, having sex regularly may raise the vaginal Candida count, which in turn may lead to VVC episodes.

However, some writers contend that only a small number of cases of Candida penile-vaginal transmission occur and that additional factors also raise the risk of VVC in women who engage in regular sex. These factors include vulvovaginal micro lacerations that allow fungus to penetrate tissue as well as exposure to different antigens, antibodies, and cytokines generated in the seminal fluid that may impact women's immunological responses to the infection. (Foxman, 1990; Hellberg et al., 1995). (Reed et al., 2000). Additionally, semen deposition in the vaginal epithelium (which has an alkaline pH) might alter the vaginal microbiota, activate the local mucosa, and introduce new microorganisms to the vaginal environment. (Goncalves et al., 2016).

Receiving oral contact has also been linked to an increased risk of sporadic and chronic VVC infections, in addition to regular sexual intercourse. Women's immune responses to Candida may be affected by variables such as exposure to various antigens, antibodies, and cytokines released in the seminal fluid. Vulvovaginal micro lacerations may play a role by allowing yeast to enter tissue. According to the literature (Foxman, 1990; Hellberg et al., 1995), this is the case. Reed et al. (2000) cite this as supporting evidence. Additionally, as semen has an alkaline pH, its buildup in the vaginal epithelium may alter the vaginal microbiota, stimulate the local mucosa, and introduce novel bacteria to

the vaginal environment (Goncalves et al., 2016). Both sporadic and recurrent VVC infections have been linked to responsive oral sex as a risk factor.

Some studies have shown a favourable correlation between VVC events and other sexual practises, such as receptive anal intercourse, early sexual debut, and casual sex partners (Bradshaw et al., 2005; Hellberg et al., 1995). Casual sexual activity (Spinillo and al., 1993), several lifetime partners (Spinillo et al., 1995), and sexual activity during menstruation (Hellberg et al., 1995) are all examples. In spite of this, scientists have not uncovered any proof that these sexual behaviours place women at a higher risk of infection. Reed et al. (2000), Foxman (1990), and Barbone (et al. Thus, greater investigation into the effects of these and other sexual practises on VVC growth is necessary.

Second-cycle school students, and adolescents in general, have a higher propensity for engaging in dangerous sexual activities and unhygienic practises connected to reproductive health. This puts them at risk for genital candidiasis and other sexually transmitted diseases (Adogo, Oyewole, Anyanwu, & Omebije, 2016). Although there are numerous STDs, the extent to which secondary school students are aware of them, especially vulvovaginal candidiasis, has not been studied.

Many Ghanaian adolescents have sexual partners, but few understand the symptoms, transmission routes, treatment options, or appropriate mentality around vulvovaginal candidiasis (Karim, Magnani, Morgan, & Bond, 2003). Vulvovaginal candidiasis may have devastating consequences, but ignorance is no protection. The results of a study on high school seniors' attitudes regarding vulvovaginal candidiasis might influence how these young people are served by the reproductive health system, thereby benefiting their health as a whole.

Healthcare-Seeking Behaviour towards Vulvovaginal Candidiasis

Fortenberry (1997), Cornally and McCarthy (2011), and Ingabire et al. (2016) are just a few of the authors who have offered their own definitions of healthcare-seeking behaviour. Healthcare-seeking behaviour is a descriptive term for the sequence of activities that individuals do to locate and use professional healthcare in response to health issues. "healthcare-seeking behaviour" mostly refers to interactions with the healthcare system. In contrast to the more general term "health-seeking behaviour," which has been used to describe how people make "good choices" in their everyday actions, which may include seeking medical care and treatment, this term specifically refers to the decision to seek out medical care and treatment. Many models of social cognition have been developed to foresee certain behaviour patterns, suggesting a psychological basis for the latter.

A popular approach is the "health belief model" (Rosenstock, 1974) developed by the aforementioned author. Among such approaches is "theory of planned behaviour" (Ajzen, 1991). These models have been used to demonstrate the myriad of influences at play in shaping an individual's actions at any given moment and place. However, they have also been criticised for assuming that individuals are rational decision-makers (MacKian 2003, Sniehotta et al. 2014). This view holds that people carefully consider all available information before deciding how to act. Plus, they put an emphasis on the individual rather than the group (Cochran & Mays, 1993). The goal of this thesis is to identify factors that predict whether people would seek medical attention for STI testing right away or put it off. Although these models may provide light on why people seek

medical attention for STI testing, their application is outside the scope of this thesis.

STIs are sensitive and stigmatised conditions, making it even more difficult to talk about obtaining healthcare (Mapp et al., 2017). A better understanding of the conduct linked with STI-related healthcare seeking has been designated by major health funders and organisations as a key objective in STI control. For instance, the World Health Organisation (WHO) proposes a Global Strategy for STIs 2016-2021 (World Health Organisation, 2016a), which identifies healthcare-seeking behaviour as a sector in need of further research to aid in service delivery (under Strategic Direction 5, innovation for acceleration). Early enrollment in care is emphasised throughout the Plan. Patel (1994) claims that women are afraid to investigate the reason of white discharge for fear of falling victim to witchcraft. Rather, women are more likely to seek help from religious and traditional sources.

Candida colonisation of the vagina has been linked to many factors, including pregnancy, long-term use of broad-spectrum antibiotics, and poor hygiene (Ali et al., 2012; Akah et al., 2010). Pregnant women are more susceptible to contracting the virus because of their weakened immune systems. Vulvovaginal candidiasis is caused by Candida spp, however since this fungus is a common part of the vaginal flora, up to 30 percent of women never experience any symptoms. During their reproductive years, around 75% of healthy women will have VVC (Fidel, 2004; Sobel, 2007).

Sobel (1992) claims that vulvovaginal candidiasis is the most common kind of yeast infection in the US. It is anticipated that at least 75% of all women will have at least one episode of vulvovaginal candidiasis, and that 50% of all

women will experience repeated episodes (Saporiti et al., 2001; Ferrer, 2000). Five percent of individuals with vulvovaginal candidiasis will have a chronic course, characterised by recurring, difficult-to-treat episodes (Ferrer, 2000). Multiple studies have shown that the global prevalence of VVC infection varies greatly, from 10% to 55% (Ahmad & Khan, 2009; Mohanty et al., 2007; Okonkwo & Umeanaeto, 2010; Olowe et al., 2014).

Each individual's signs and symptoms are unique and depend on the area affected and the infectious organism. Candida typically exists on the skin and inside the body without creating any issues (for example, in the mouth, throat, gut, and vagina). According to scientists, 20% of women typically have vaginal candida without displaying any symptoms (Sobel, 2007). On occasion, Candida can spread and cause an infection if the environment within the vagina alters in a way that encourages its growth. Due to immune system modifications, hormonal changes, or drug interactions, this occurs. (Pikuza, Chilova & Ishchenko, 2008).

Dias et al. (2011) found that 15–20% of women with vaginal infections had no other symptoms than vaginal secretions and hence do not seek medical attention. As a consequence, these individuals would still be vulnerable to issues and recurrence, which might lead to the coexistence of many Candida species and the development of resistance to the vast majority of antifungal medicines. Sobel et al. (2003) found that overdiagnosis and underdiagnosis of vulvovaginal candidiasis persist due to a lack of rapid, convenient, and economical diagnostic investigation. This has implications for potential treatments down the road.

Effects of Vulvovaginal Candidiasis

Tubal blockage caused by vaginal infections such candidiasis and related practises accounts for around 67% of instances of infertility among women in Sub-Saharan Africa (Low et al., 2006). Multiple prospective studies (Hester & Kennedy, 2003; Kilmarx et al., 1998) have shown that VVC may increase a woman's chance of developing HIV-1, in addition to the costs and agony associated with VVC. Rottingen et al. (2001) conducted a comprehensive study and found that VVC doubles a person's risk of getting HIV-1. Populations in whom this VVC is common may be at a higher risk of becoming infected with HIV-1 (Simon et al., 2006).

Vaginal candidiasis affects women all over the globe, in both hot and cold climates. Pikuza, Chilova, and Ishchenko (2008); Lisiak, Klyszejko, Pierzecholo, Sowinska-Przepiera, and Wlosinska (2000). These infections, although asymptomatic, may persist for years. However, there are serious health risks associated with the illness, especially during pregnancy (Jombo, Akpera, Hemba, & Eyong, 2011). In Poland, for example, treating candidiasis during pregnancy was associated with increased risks of bacterial vaginosis and premature birth. Congenital candidiasis of the baby was recorded in Minnesota, USA (Pawlaczyk, Friebe, Pawlaczyk, Sowinska-Przepiera & Wlosinska, 2006), similar to the way that candida chorioamnionitis occurred with preterm labour.

Many pregnant women have discomfort from reproductive system infections, the most common of which is vaginal candidiasis (moniliasis or thrush). Candida albicans is responsible for 70-90% of vulvovaginal yeast infections; Wilkinson coined the name "candidiasis" to describe this condition in 1849. Forty-five percent to 45 percent of women, according to Summers

(2011), will have recurrent vaginal candida infections at least twice in their lives. 75% of reported cases thus occur during childbearing years (Farida, Sahlan, Rohmatin, & Adawiyah, 2020). Recurrent vulvovaginal candidiasis (RVVC), often known as chronic recurrent thrush, affects between 3 and 6% of women globally and is very debilitating while being mostly untreated. For example, candida is the second leading cause of vaginal infections in America.

Preventive measures and treatment

The level of information possessed by the individual afflicted by vulvovaginal candidiasis is crucial to their ability to manage or cure the condition. Just as the severity of an infection, the patient's medical history, the symptoms of candidiasis, and the projected degree of compliance with the application technique all play a role in selecting an antifungal medicine, so too do other aspects. Antifungal medications such imidazole antifungals, triazole antifungals, polyene antifungals, and fluconazole are available for the treatment of candidiasis. However, whether or not a patient chooses one of these antifungal medications depends on the patient's level of awareness (Serenje, 2015).

Multiple options exist for treating recurrent vaginal candidiasis. Regardless of the treatment method used, care must always be individualised (Kullberg & Arendrup, 2015). Accessibility, cost-effectiveness, convenience, and possible adverse effects are all factors that the treating physician must consider while prescribing medicine. Over-the-counter antifungal medications and lotions are widely available. Self-medication is common amongst females; nevertheless, doing so is associated with increased drug costs and the possibility

of obtaining misleading results in the absence of microbiologic confirmation (Kullberg, van de Veerdonk, & Netea, 2014).

Passive anti-Candida antibody immunisation may be useful for both immunocompetent and immunodeficient individuals. Candidasis patients should be tested for polymorphisms in genes like IL-10 and IL-12B, which are known to hinder the body's ability to get rid of the fungus. Torosantucci et al. (2005) and Van de Veerdonk, Netea, Joosten, van der Meer, and Kullberg (2010) both suggest that this information might be useful for deciding whether patients should get supplemental antibody treatment.

Controlling vulvovaginal candidiasis via education has been given less attention in most traditional countries. It is frowned upon in much of Africa to talk openly about problems related to reproductive health, especially those affecting the external genitalia. As a result, if they contract HPV, female high school seniors may lack the information necessary to properly manage it. However, "Vaginal discharge is a typical symptom of the female genital tract" has been cited as an exception. Studies show that between 11% and 38.4% of women in India and 34% of women in Ethiopia who sought primary or secondary care for vaginal discharge were successfully treated. Reference: (Zemouri et al., 2016, p. 77). Problems associated with candidiasis include, but are not limited to, birth abnormalities, prenatal infections, female infertility, and premature delivery.

Candidasis has been on the rise for 30 years, largely due to the prevalence of immunocompromised hosts, who are more likely to contract the infection due to conditions like diabetes, immunosuppressive drug therapy (especially in organ and stem-cell transplant recipients), cancer, and AIDS.

None of these, however, provide a reliable indication of a person's level of knowledge (Criseo et al., 2015; Pfaller et al., 2014). Additional risk factors include an ageing population, broad-spectrum antibiotic usage, iatrogenic diseases brought on by invasive surgical procedures, and the presence of indwelling prosthetic devices such shunts and catheters (Achkar & Fries, 2010; Inglis et al., 2013). Candida infections have been linked to a number of other factors, such as regular intercourse, oro-genital sex, douching, condom usage, sponge use, IUDs, diaphragm use, and high-sugar diets (De Leon et al., 2002).

Combating candida with diet is crucial. Yeast infections are more common in patients with diabetes mellitus, and this may be because carbohydrates encourage yeast development (Kidd, 2003). Many species of Candida may be found in the digestive system, suggesting that avoiding Candida infection by diet alone may be difficult. Because Candida requires readily-fermentable carbon sources, such mono or dimeric sugars like glucose and sucrose (Kidd, 2003), avoiding foods that are particularly plentiful in these nutrients may help to prevent excessive Candida development.

Theoretical Framework

The theoretical foundation of this research comes from the Health Belief Model (HBM) and the Behavioural Model (BM) of Health Services Use. Beliefs or perceptions about illnesses, remedies available to prevent disease incidence, and other interpersonal aspects are promoted by the HBM as elements that affect an individual's own perception, attitude, and conduct in regards to health. The precise impressions of a certain intervention or the existing conditions include the perceived seriousness/severity, perceived susceptibility, perceived benefit, and considered barrier (1974; Strecher and Rosenstock).

Medical Care Behavioural models grounded on the Use theory may help us make sense of the complex interplay between patients' real and perceived needs, healthcare providers' abilities to meet those needs, and other variables that shape healthcare utilisation (Travers, Hirschman, & Naylor, 2020)

In view of this, the knowledge and perception held by Senior High School females will influence their intention and actions toward controlling the ailment.

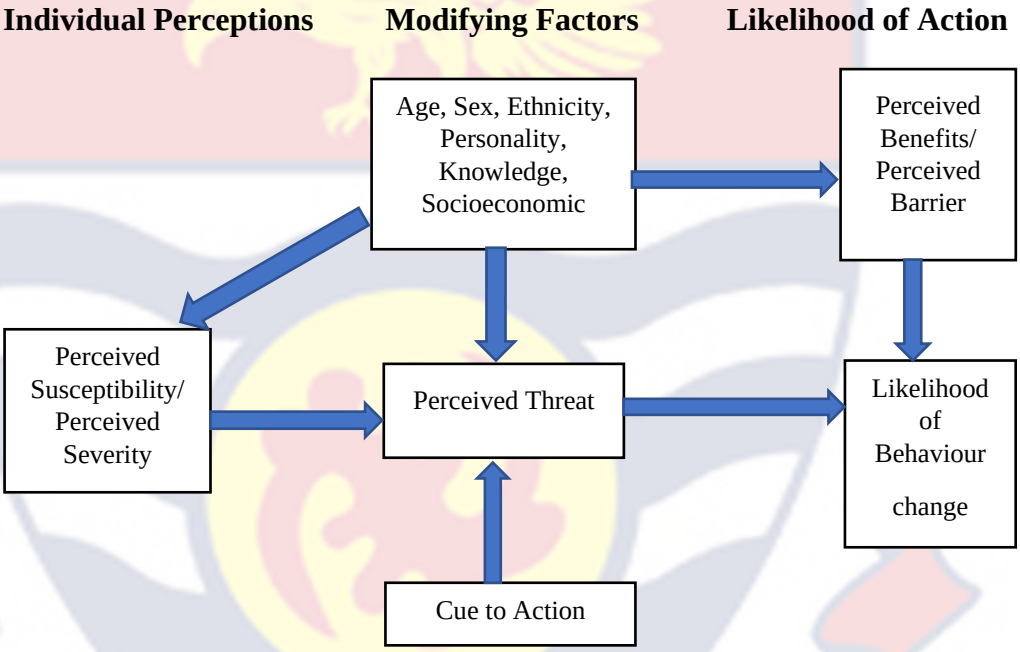


Figure 1: Health Belief Model (Strecher & Rosentock, 1997)

Health Belief Model (HBM)

The theoretical framework for this investigation is the Health Belief Model (HBM). After observing the failure of a free TB health screening programme in the 1950s, Hochbaum, Rosenstock, and Kegels developed the paradigm. Since then, the HBM has been adapted to investigate a wider range of long- and short-term health behaviours, such as sexual risk-taking and the transmission of STDs (Hochbaum, 1958). According to Glanz, Rimer, and

Lewis (2002) and Kreps (2003), the theory can be applied to the use of specific therapies, as well as health seeking, health education, and health promotion. Personal beliefs or perceptions about illnesses, techniques for minimising disease incidence, and other interpersonal conditions all have an impact on an individual's own perception, attitude, and conduct about health, according to the central principle of HBM (Hochbaum, 1958). Specific impressions of an intervention or existing circumstances include susceptibility, seriousness/severity, benefit, and barrier (Hochbaum, Rosenstock, & Kegels, 1952). Health behaviours may be explained by any of these perspectives, or by a mixture of them. Self-efficacy, motivating or moderating variables, and signals to action have also been included to the paradigm (Glanz Rimer & Lewis, 2002; Hochbaum, 1958).

Perceived susceptibility

When people feel more threatened, they are more likely to take precautions. Stretcher and Rosenstock (1997) argue that a sense of vulnerability and severity together produce a feeling of threat. Changes in conduct and perhaps medical attention are possible if the perceived danger is related to a life-threatening sickness or condition. The severity with which individuals associate the sickness with mortality influences how they act. One's estimation of one's own vulnerability to, say, an age-related ailment, will be affected by the degree of risk one perceives. Therefore, the choice to seek medical counsel and improve one's health position will be influenced by personal risk based on qualities or conduct that impact the person's possibility of getting illnesses related. Adolescents who are made aware of the risk factors that put them at risk for

developing a candida infection and its subsequent complications are more likely to seek professional medical help in an effort to improve their health.

Perceived seriousness/severity

This is a person's subjective assessment of a disease's significance or severity, often informed by medical knowledge or experience. A person's outlook on the difficulties presented by their illness or the way it may alter their life in general may also contribute to this phenomenon (McCormick-Brown, 1999). Whether or not a person decides to see a doctor depends on their perception of their own health in relation to the overall level of illness and disability in the population. One's perception of a condition's seriousness and its effects may be influenced by factors including the potential consequences of ignoring medical advice, the degree of risk involved, or the severity of the sickness itself. If a senior high school student develops vulvovaginal candidiasis, for instance, she may or may not opt to seek medical assistance based on her perception of her own health.

Perceived benefit

A person's assessment of the usefulness or utility of a new habit in preventing sickness is known as its perceived benefit. So, the person weighs the pros and cons of their health habits in terms of how they could affect the likelihood of them having the ailment and the severity of any symptoms they might experience if they do. Adolescents may reduce their risk of catching the illness by learning about health and making good lifestyle choices. People are more inclined to adopt healthier habits or utilise health facilities when it becomes obvious that doing so will lessen their likelihood of acquiring diseases and the negative effect these conditions would have on their health.

Perceived barrier

An individual's perception of a challenge in obtaining necessary medical care for a person to change their conduct, they must value the advantages of the new activity more highly than the disadvantages of the old behaviour (Centre for Disease Control and Prevention, 2004). The person will evaluate their own capacity and external obstacles in light of their own health requirements. Before deciding whether or not to get treatment or preventative care, a person will weigh a number of factors, including expense, distance, psychological stress from waiting, travel time, physicians' attitudes, and more. The teen in question seeks medical attention in the school clinic, applying what she has learned about her disease and the consequences of improper management. If the school clinic is unable to accommodate this need, then additional barriers to health care access, such as lengthy wait times, far distances, uncaring doctors, and so on, must be overcome. Only until the teenager realises that the benefits of the new conduct she is adopting much exceed the costs of the old habit can she hope to persevere in the face of overwhelming adversity.

Modifying variable

Other factors including culture, education level, prior experience, talents, and drive can change the four main perceptions. These are individual traits that affect how one perceives one's own health needs. In the present study, the modifying variables may include the type of school, the form or level of the student and even the family background.

Cues to action

The term "cue to action" describes situations or objects that prompt a behavioural shift in an individual. Positive behavioural changes may be prompted by cues to action. Both internal and external signals, in the sense of environmental inputs, may play a role (Bogart & Delahanty, 2004; Rimer, 1997). An sickness in the family, a news story, a public service announcement, the counsel of friends and neighbours, or a postcard from your doctor are all potential sources of such reminders (Ali, 2002). Cues to action may be influenced by factors such as the availability of health information, the availability of adequately resourced health care services, the advice of a healthcare professional, the illness of a close family member with a chronic condition, and a physical explanation of the symptom's association with a health condition.

Self-efficacy

The belief in one's own ability to accomplish a goal (self-efficacy; Bandura, 1977). People are reluctant to attempt new things unless they have confidence that they will be successful at them. Even if a person recognises the value of trying out a new habit (perceived benefit), they may be dissuaded from doing so if they believe they lack the skills necessary to do so (perceived barrier). The individual's confidence and capacity to access health requirements may be improved, for example, by training, mentoring, and encouragement to utilise preventive and curative services in the management of existing health issues.

Behavioural Model of Health Services Use

The pattern of how healthcare is utilised may be completely understood via the combined effect of environmental and human variables, requirements

(both real and perceived), and enabling resources, according to the model proposed by Andersen in 1995. In light of this, it will be assessed how senior high school ladies perceive and intend to control candidiasis. After Gelberg, Andersen, and Leake (2000) added predisposing characteristics like childhood traits (like history of abuse and neglect, foster care, and parental illness), living situations, residential history, victimisation, mental illness, and psychological resources (like coping, mastery, self-esteem, cognitive ability, and developmental characteristics), the model was later expanded to target vulnerable populations. The primary elements of the model include predisposing features, enabling resources, needs, individual health practises, and results.

i. Predisposing characteristics: According to conventional knowledge, demographic factors like sex and age that contribute to the biological foundation of a person's desire for healthcare services are examples of predisposing characteristics. The predisposing characteristics acknowledge that some facets of social structure do exist that contribute to the need for health services due to their group membership or identity in the local community as well as the resources that are easily accessible in the physical environment that allow an individual to make healthy life choices. Some essential components of social organisation are education, employment, ethnicity, and culture. Once again, the predisposing characteristics conceptualise health beliefs as attitudes, values, and knowledge about health and healthcare that influence how individuals view the need for medical treatment (Andersen, 1995).

ii. Enabling resources: People require access to their own, their families', and their community's resources in order to use healthcare services. In addition to

an individual's income, health insurance, reliable source of treatment, location, and means of transportation, these enabling factors also include the accessibility of medical facilities (Andersen, 1995). According to Gelberg, Andersen, and Leake (2000), the expanded enabling vulnerable region also encompasses the use of social services and public benefits, the availability and use of information sources, and needs that clash with one another.

iii. Need: The need domain initially covered both objective evaluations and self-perceived requirements (like assessed needs). Perceived need has proven useful over time in explaining care-seeking behaviours and drug regimen adherence, even though objective evaluations are regarded to be more significant in predicting the quantity and kind of therapy patients require after visiting a healthcare practitioner (Andersen, 1995).

iv. Personal health practices: The major emphasis of this area is on healthy habits including eating, exercising, taking care of oneself, and adhering to recommended medical treatments. This domain keeps track of how medical services are used (Andersen, 1995). For vulnerable groups, the model has been developed to take into consideration nutritional sources, hygiene, and hazardous sexual activity (Gelberg, Andersen, & Leake, 2000).

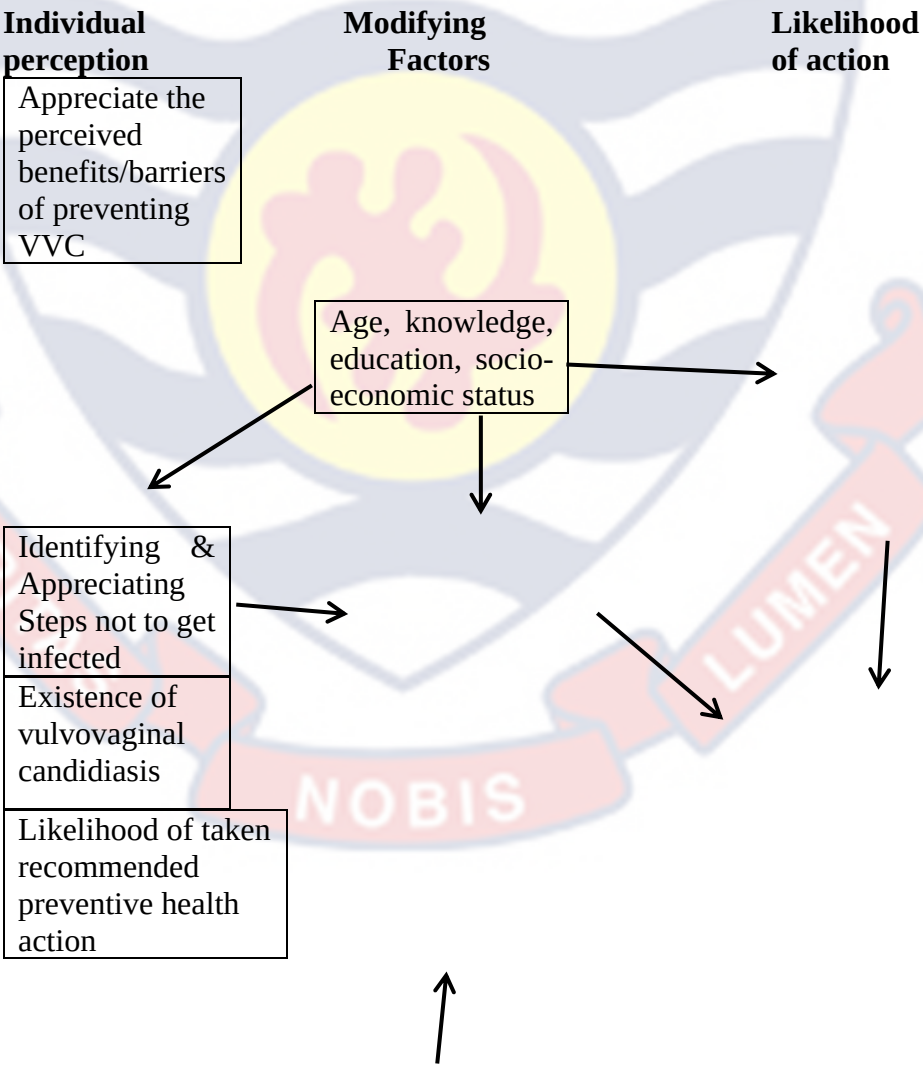
v. Outcomes: Indicating that it goes beyond the previously acknowledged conventional and susceptible contrast, the behavioural model of health services consumption incorporates perceived, objective health status as well as satisfaction with treatment as outcomes (Andersen, 1995).

Conceptual Framework

Female students must understand the need of taking precautions to avoid contracting candidiasis. The students will recognise the value of maintaining

good health within the context of altering characteristics such age, sex, ethnicity, personality, and knowledge to take signals for actions conscious of their susceptibility as indicated in Figure 2.

It is a perceived concern that anybody may get candidiasis, and the incidence of infection can be affected by adjusting characteristics including age, sex, ethnic origin, and socioeconomic level. A behavioural change is the desired outcome of the current study, which relies on a theory to conceptualise the issue for an effective intervention. The perceived threat, susceptibility, and perceived benefits all work together to promote cues for action where the individual will seek assistance and, most likely, end up in a change in behaviour.



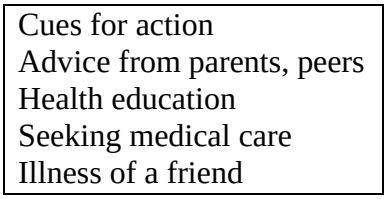


Figure 2*: Conceptual framework for the study*

Chapter Summary

The most common association between vulvovaginitis and vaginal Candida species carriage is vulvovaginal candidiasis (VVC). It is a problem resulting from the high morbidity incidence among women. One's perspective on the phenomena depends on the range and depth of their knowledge. Women commonly misunderstand the symptoms of each disease and think they are caused by poor hygiene, sickness, or an STD, according to a study evaluating women's perceptions and experiences with common vaginal infections; antibiotic usage was identified as the sole cause of vulvovaginal candidiasis. The diagnosis was primarily done by a healthcare provider in countries where there was an over-the-counter medication for vaginal infections, but there was also a large degree of self-diagnosis.

Despite the fact that respondents seemed to be well-informed and aware of vaginal infections, self-reported incidence was much lower than prevalence rates, which may have resulted in misdiagnosis. The principal vaginal defence against Candida, the vaginal bacterial microflora, is diminished as a result of antibiotic usage, which is thought to be the root of the association between VVC and antibiotics.

People have diverse perspectives on vulvovaginal candidiasis for a number of reasons, including but not limited to how well they understand the issue. The use of pantyliners and vaginal douching have also been identified as

behavioural risk factors for VVC. These feminine hygiene practises may trigger local reactions because of sensitivity or allergy. Between 10% and 25% of women are considered to be affected with candida vulvovaginitis globally. According to age, geography, and socioeconomic standing, the prevalence of vaginal yeast isolates in women varies from 5.4% to 48.4%. Epithelial invasion, which might lead to VVC, is hypothesised to be triggered by an increase in Candida spores in the vaginal environment. As a consequence, risk factors for VVC that might increase the vaginal blastopore burden have been presented.

Teenagers, particularly those who attend second-cycle institutions, are more likely to engage in risky sexual activities and maintain less hygienic reproductive health practises, which raises their risk of developing vulvovaginal candidiasis and contracting STDs. There are several sexually transmitted diseases, but little study has been done to determine if teenagers in secondary school are adequately informed of these conditions, notably vulvovaginal candidiasis.

Despite the fact that many teens in Ghana participate in sexual activity, the majority of these teenagers are not aware of the symptoms, methods of transmission, available treatments, or the proper attitude to have while dealing with vulvovaginal candidiasis. Nevertheless, ignorance does not excuse the negative consequences of vulvovaginal candidiasis infection. The opinions of senior high school students towards vulvovaginal candidiasis should thus be studied since the results may affect how these students are treated for the ailment and improve their general welfare. In roughly 67% of instances, vaginal infections like candidiasis and practises linked with it lead to tubal blockage, which in turn causes infertility in women in Sub-Saharan Africa. The degree of

information a person with vulvovaginal candidiasis holds significantly affects their capacity to manage or treat it.

The Health Belief Model (HBM) and the Behavioural Model of Health Services Usage make up the study's theoretical framework. The HBM advocates the idea that an individual's assessment of their own health, attitude towards it, and conduct in relation to it are impacted by their own beliefs or perceptions about illnesses, the approaches available to lessen the likelihood of contracting such diseases, and other interpersonal circumstances. The precise views of a particular intervention or the present situation are perceived seriousness/severity, vulnerability, advantage, and obstacle.

Utilising a Behavioural Model in Health Services The use theory states that by combining the effect of environmental and individual variables, needs (both real and imagined), and supporting resources, the pattern of how healthcare is used can be clearly recognised. Because of this, the intents and actions of Senior High School girls in respect to treating the disease will rely on their knwledge and viewpoint.

CHAPTER THREE

RESEARCH METHODS

The purpose of the study was to ascertain the prevalence of vaginal candidiasis among adolescent girls in senior high schools within Cape Coast Metropolis and then assess the students' knowledge of the infection as well as their attitude and health-seeking behaviour towards the infection. The methods utilised to gather and analyse the study's data were the main subject of this chapter. It included the research design, population, study area, sampling procedure, data collection instrument, data collection procedures, and data processing and analysis.

Study Design

This research used a descriptive cross-sectional survey design. A research using a survey design measures the variables of interest using self-reporting instruments and places a high priority on sampling. The sample was chosen from among a large and diverse research group. This design is the most appropriate for assessing the prevalence of a trait or disease, the attitudes and knowledge among patients or target groups, and other related issues.

The design has both positives and negatives. According to Babbie (2007), surveys are efficient in describing a large population with a precise representative sample. They are adaptable in that many distinct factors and inquiries might be made on a same topic. Additionally, according to Nwadinigwe (2002), surveys standardise the measurement of ideas, beliefs, and attitudes. However, according to Creswell (2012), quantitative research does not provide detailed information or the sentiments of particular study participants.

Study Area

The four senior high schools in the Cape Coast Metropolis were the sites of this investigation. These were made up of two schools for girls and two schools for mixed-sex students. Wesley Girls Senior High School and Holy Child Senior High School were the two female high schools. Efutu Senior High School and University Senior High School were the schools with mixed sexes. This decision was made based on the fact that the research was focused on women and that these schools are among the most populous senior high schools for females in the Cape Coast Metropolis. These girls would also be more adequately represented in the research across the four institutions. These schools accept female students from all throughout Ghana. Regarding the infection of vulvovaginal candidiasis, the backgrounds and experiences of the students are diverse. Once again, the research focused only on female students in senior high school since adolescents make up the bulk of this level's student body. In various areas of life, particularly in terms of reproductive health, the teenage years brings both possibilities and problems.

In March 1946, Archbishop William Thomas Porter (SMA), of the former Gold Coast Colony Vicariate, requested the sisters of the Society of Holy Child Jesus, a religious order famous for its "outstanding teaching" in England, to inaugurate the first Catholic Girls Secondary School in the country. Second-cycle female school Holy Child School, also known as Angel's Hill/Monks, is situated in Cape Coast, Ghana's Central Region. Approximately 1,000 females between the ages of 14 and 18 are now enrolled in lessons. Only boarders are admitted at Holy Child SHS. The school has always enjoyed providing girls

with a thorough education so they may push themselves to achieve more and develop into "Women of Substance."

Wesley Girls High School was established in 1836 by the widow of a Methodist preacher, and it first enrolled 25 young women. The original goal of this institution was to educate young women in the fundamentals of literacy, numeracy, domesticity, and spirituality. In 2003, Wesley Girls' High School was ranked #68 on Africa Almanac's list of the best 100 high schools in Africa. This was based on the school's reputation, visibility (both online and in the press), number of students, number of graduates, and number of organised events (Africa Almanack, 2003).

The school's mission is to provide students with a holistic and quality education in partnership with community members so that they may develop into God-fearing, well-balanced, disciplined, and self-confident leaders who are prepared to meet the challenges of a diverse and complex world and use their talents for the greater good. Wesley Girls High School (2018) reported that there were 1,850 students enrolled. At the moment, students spend three years there. Science, commerce, the arts in general, the visual arts, and even home economics are all regarded topics at the senior high school level in Ghana.

In February 1999, Efutu Senior High School opened as a private community school, serving a total of 50 male and female pupils. Nana Amba Eyiaaba, chief of Efutu, was the inspiration for the establishment of the institution. She is a champion of education and the Queen Mother of Efutu; businessman and contractor Mr. Freeman Abaidoo and World Vision International partner to use her services. The kids of the town and the surrounding areas needed access to secondary education, so that's what they set

out to do. The Ghana Education Service (part of the Ministry of Education) merged with the school in September 2001. All academic courses are managed by Efutu SHS, which has a total student body of 2187 (1029 of which are female).

The Faculty of Education at the University of Cape Coast came up with the idea of opening a senior high school called University Practise. The University was to provide the school's infrastructure (buildings, groundskeeping equipment, etc.) and the General Education System (GES) was to staff the school with teachers and other personnel. When the Ghana Education Service agreed to fund the project, the dream became a reality. On October 13th, 1976, 70 freshmen and sophomores enrolled to kick off the school's Senior High School (SHS) curriculum. There were also 42 newcomers to the sixth-form liberal arts and sciences programmes. The school only offered art and science classes as electives back then. By the 2003/2004 school year, all available elective courses excluding those in technical skills and technical drawing were provided by the institution. There are now 1998 students enrolled, with 966 of them being women.

The goal of the school is to help the students mature into productive members of society who take pride in their country and adhere to a strict code of conduct. The primary goal of the institution is to rival the quality of the mother university as a moral, intellectual, and vocational education powerhouse in the Cape Coast metropolitan area and across the country. The phrase "service to community" serves as the organization's slogan.

Due to the increasing number of students enrolled in senior high schools and the government's introduction of free SHS in 2018, Ghana's first and

second year students are now split into two sessions: the green track, which runs from September to November, and the gold track, which runs from November to January. While the majority of female students at each of the four institutions live in the boarding house, some attend classes during the day owing to a lack of available boarding spaces. Holy Child SHS and Wesley Girls SHS are both boarding schools with secure fences around their campuses, while at Efutu SHS and University Practise SHS, students from outside Cape Coast are given lower enrollment priority than those from Cape Coast Metropolis and the surrounding area. There is no stringent regulation of entry and exit from their premises, and the fences are not completely secure. Most of the students at Wesley Girls SHS and Holy Child SHS come from wealthy backgrounds, and both institutions are widely regarded as among the best in the country. Most students at Efutu Senior High and UP SHS come from middle- and lower-class backgrounds, giving the institutions a reputation for being underfunded.

Population

In all, there are 9,922 female students enrolled in a senior high school in the Cape Coast Metropolitan Area (Metro Education Unit Cape Coast, 2019) who will serve as the study's population. All senior high school girls in the Cape Coast Metropolitan Area were included in the research (Ghana Education Service, Cape Coast). Most of these women are teenagers (as defined by the World Health Organisation, which places them between the ages of 10 and 19) and have certain unusual traits in their physical development. As a result, hormonal activities play a role in the maturation of their asexual characteristics. Adolescents should be taught strict cleanliness routines since their bodies are undergoing rapid changes due to hormones. This research was conducted in

Cape Coast City, and as vulvovaginal candidiasis is mostly a problem for women, it made sense to recruit from institutions where there was a large and stable female student body. This population of females in SHS provides the framework for adequate data to be collected which will provide the opportunity for the findings to be generalised.

Sampling Procedure

Considering the nature of the infection which mostly affects females, the two female senior high schools in the Metropolis (Wesley Girls SHS and Holy Child SHS) were purposively selected as they are the only two female senior high schools in the Cape Coast Metropolis. The other two senior high schools, Efutu Senior SHS and University Practice SHS were randomly selected from the six mixed senior high schools in the metropolis using Microsoft Excel random number generation technique (RANDBETWEEN function). Participants for the study were purposively selected from the second and final years. First years were exempted because they were absent from school due to the COVID-19 pandemic.

A total of 2,022 students attend Wesley Girls Senior High School, while 2,015 students attend Holy Child Senior High School. (Metro Education Unit Cape Coast, 2019) There are 1521 female students enrolled in Efutu SHS and 1489 at UPSHS. The combined number of female students at these four four-year institutions is 7047. The participants were chosen using a stratified sampling method in which each school was treated as a strata and the proportion of the population represented by that stratum was calculated by dividing the number of members in that stratum by the total number of members in the population. A random selection of 10% of the student body was used for the

research (Cohen, Manion, & Morrison, 2002). A good maximum sample size is usually around 10% of the population, as long as this does not exceed 1000 (Bisits, 2021)

Table 1 shows the permutations for the selection of the sample.

Table 1: Permutations for the selection of the sample for the study

School	Population of females	Sample
Wesley Girls High School	2022	201
Holy Child SHS	2015	200
Efutu SHS	1521	151
UPSHS	1489	148
Total	7047	700

A simple random sampling technique was used to select the sample in each school for the study. The students' names were collected from the school roll and assigned numbers in MS Excel. Then, the RANDBETWEEN function in Microsoft Excel 2016 was used to select the numbers which then became the sample for the school for the study. RANDBETWEEN is the MS Excel formula that can generate random numbers between two numbers.

Data Collection Instrument

The information was gathered with the use of a questionnaire the researchers themselves created based on existing texts. The decision to use a questionnaire stems from the fact that this method facilitates the collection of quantitative data from a large sample of students in a short amount of time. Again, questionnaires provide a distinct opportunity for data retrieval from respondents with little researcher influence (Wahyuni, 2012). To this end,

Akinci and Saunders (2015) noted that questionnaires allow researchers to ask questions in a structured method.

The questionnaire questions were designed to answer the objectives of the study. There were both open-ended and multiple-choice questions on the survey. There were 33 total objects, and they were broken up into 5 distinct groups. There were five questions in Section A that asked about the participants' ages, sexes, socioeconomic statuses, religious affiliations, regions of residence, and ethnicities. The incidence of vulvovaginal candidiasis among SHS students was studied using the nine questions in Section B. There were nine questions in Section C to gauge participants' familiarity with vulvovaginal candidiasis. Students' perspectives on candidiasis, its causes, and possible treatments were the focus of four questions in Section D. In Section E, we provide the six questions designed to elicit information on the factors that prompt SHS students affected with vulvovaginal candidiasis to seek medical attention. Participants checked off predetermined answer options and were given blanks to fill in if they felt they needed to elaborate.

Validity and reliability of the instrument

The instrument was handed to two public health nurses for examination in order to confirm face and content validity. The pre-testing of the instrument was done at Mfantsiman Girls Senior High School. These pupils share traits with the schools that were utilised in the research. Prior to the pre-testing, three students were given the instrument to read through in order to determine if the items were simple to read and comprehend. These students were urged to remark on the instrument's suitability and comprehension. The researchers that oversaw this study gave the instrument their final approval.

The Kuder Richard (KR 20) reliability coefficient was used to examine the pre-testing group data that was gathered. A test containing binary variables, such as correct or wrong responses, is measured by the Kuder Richard (KR 20) reliability coefficient (Glen, 2020). The consistency of the test's results, or how well the test actually measures what you want it to, is referred to as reliability.

Data Collection Procedures

Ethical clearance from UCC Institutional Review Board was acquired. (Appendix I). The research protocol was approved by my supervisors (Appendix II), and a cover letter from the Department of HPER helped me win approval from the Regional Education Office and the heads of the four schools—Wesley Girls SHS, Holy Child SHS, Efutu SHS, and UPSHS—to contact and build rapport with the respondents. There was a cover letter included with the questionnaire. The study's objectives were briefly outlined in the cover letter, which also guaranteed the students' privacy and voluntary involvement in the research. The survey's expected completion time was also included in the letter (Appendix IV). Before participating in the research, the students also filled out an informed consent form (Appendix V). This anonymity was guaranteed throughout the data gathering process by all ethical concerns. On the questionnaire that was sent to the students, they were asked not to write their names. After morning worship and during second break, when students and instructors were free, the instrument was distributed to the pupils, ensuring that teaching and learning time was not interrupted. Depending on the time allotted for break, the data were collected in sessions. The questionnaire was administered with assistance from a qualified research assistant from the Department of HPER. The study's objectives were explained to the helper. He also received instruction in how to use the instrument.

Data Processing and Analysis

The data collected from the field was first cross-checked to ensure that the questionnaire was properly completed. The data were then coded and processed using the Statistical Product and Service Solutions (SPSS version 21). Research question one which sought to find out the prevalence of vulvovaginal candidiasis among adolescent girls in the Senior High Schools in Cape Coast Metropolis was analysed using the descriptive statistics frequencies and percentages. Research question two assessed the level of knowledge on vulvovaginal candidiasis among adolescent girls which were analysed as high or low using frequencies. Research question three ascertained the attitude towards vulvovaginal candidiasis among adolescent girls in the senior high schools in Cape Coast Metropolis. Attitude towards Vulvovaginal Candidiasis determined as positive or negative based on the frequencies of the sub-constructs. Research question four which sought to find out what makes senior high school students in Cape Coast Metropolis seek medical treatment during vulvovaginal candidiasis infection was analysed using frequencies, percentages and regression where various variables were observed to have influenced students quest to seek medical treatment.

Chapter Summary

This chapter focused on the procedures used to collect and analyse data for the study. It included the research design which was the descriptive cross-sectional survey design, population for the study is all 9,922 female SHS students in the Cape Coast Metropolis (Metro Education Unit Cape Coast, 2019). This study was conducted in the four senior high schools within the Cape Coast Metropolis made up of the two female schools and two mixed sex schools.

The study focussed only on females at the senior high school level because majority of these students at this level are adolescent. It is important to remember that the teenage period brings with it a number of possibilities and problems in many areas of life, particularly in terms of reproductive health. sampling method They were specifically chosen since they are the only two female senior high schools in the Cape Coast Metropolis (Wesley Girls SHS and Holy Child SHS). A questionnaire derived from literature was used to gather data from the other two senior high schools, Efutu Senior SHS and University Practise SHS, which were chosen at random among the six mixed senior high schools in the city. To make sure the questionnaire was correctly filled out, the information gathered from the field was first cross-checked. The Statistical Product and Service Solutions (SPSS version 21) was then used to code and analyse the data.

CHAPTER FOUR

RESULTS AND DISCUSSION

The purpose of the study was to measure the prevalence, knowledge, attitude and health seeking behaviour on vulvovaginal candidiasis among adolescent girls in senior high schools in the Cape Coast Metropolis. This chapter presents the results obtained from the analysis of the data collected for the study. The chapter also covers the discussion of the results in relation to the research questions of the study. The survey design was adopted and yielded questionnaire return rate of 100%, thus all respondents returned their questionnaire.

Prevalence of Vulvovaginal Candidiasis among Adolescent Girls in Senior High Schools in Cape Coast Metropolis

The purpose of this research question was to ascertain the prevalence of VVC among adolescent girls. A descriptive statistic was performed on the data to calculate the prevalence level. Data in Table 2 shows that 47% (n=328) of the respondents indicated they had ever been affected by candidiasis whiles 53% (n=370) averred that they had not experienced the infection yet. The implication is that, a number of adolescent girls within the schools in Cape Coast Metropolis have experienced vulvovaginal candidiasis. The result also shows that 64% (n=446) of the respondents had experienced vaginal discharge, whiles 36% (n=251) had not had any vaginal discharge. This response is independent of the previous response that sought to find out if respondents had been affected by vulvovaginal candidiasis. Also, three respondents did not know if they had ever experienced vulvovaginal candidiasis.

With respect to offensive odour associated with candidiasis, majority of the respondents (43%; n=305) disagreed that they had smelly vaginal discharges whereas about 34% (n=235) agreed that their vaginal discharges were smelly (Table 2). Some respondents (21 %; n=149), were of the view that they never had any vaginal discharges and so they were not in any position to indicate their stance on the odorous nature of their vaginal discharges. Furthermore, 2% (n=12) of respondents did not indicate whether their vaginal discharges were odorous or not. From Table 2, 42% of the respondents did not have any plans of treating the vaginal infection because they had not experienced it yet. About 29% (n=203) of the respondents sought medical care to treat the condition whereas 15% (n=104) of the infected respondents were self-medicated. However, 12% (n=82) did not treat vulvovaginal candidiasis at all.

The frequency and duration of experiencing vulvovaginal candidiasis were elicited from the respondents of the study. About 44% (n=309) of the respondents indicated that they had never got infected with vulvovaginal candidiasis at all whiles 24% (n=168) of the respondents claimed they got infected once in a while. Also, 21% (n=144) of the respondents were of the view that, they did not often get infected whiles 11% (n=77) asserted that they got infected very often. About 35% (n=246) of the respondents indicated that they had never been re-infected by candidiasis after treating it whiles 19% (n=135) of the respondents averred that they got re-infected even after treatment. However, 16 respondents representing 2% provided no response.

The results again reveals that it took 1- 4 weeks for 15% (n=105) of the respondents to get re-infected with VVC whereas it took over a month for 13% (n=90) of the respondents to get re-infected. However, about 56% (n=389) of

the respondents were not aware of any medication used to treat vulvovaginal candidiasis whiles 43% (n=298) of the respondents were aware of different medications for treating the infection.

Forty-one percent (n=287) of the respondents could not mention any of the medications for treating VVC. However, the remaining respondents cited *candid VC*, ointments, injection, flucytosine and sitting on hot water with salt as well as other substances as some of the medications for treating vulvovaginal candidiasis.

Table 2: Prevalence of vulvovaginal candidiasis among students in some selected senior high schools within the Cape Coast Metropolis

Variable	Frequency	Percent
Having been affected		
Yes	328	46.9
No	370	52.9
Non-response	2	0.2
Having vaginal discharge		
Yes	446	63.7
No	251	35.9
Non-response	3	0.4
Having offensive odour		
Yes	235	33.6
No	304	43.4
Never had it	149	21.3
Non-response	12	1.7
How to treat candidiasis		
Seek medical care	203	29.0
Self –Medication	104	14.9
Don't Treat it	82	11.7
Never had it	294	42.0
Non-response	17	2.4
How often one gets infected		
Very Often	77	11.0
Not Often	144	20.6
Once a while	168	24.0
Never got infected	309	44.1
Non-response	2	0.3

Having been re-infected		
Yes	135	19.2
No	246	35.1
Never had it	303	43.3
Non-response	16	2.3
Duration of re-infection		
1-2 weeks	60	8.6
3-4 weeks	45	6.4
Over a month	90	12.9
Never re-infected	482	68.9
Non-response	23	3.3
Medication awareness		
Yes	298	42.6
No	389	55.6
Non-response	13	1.9
Medication for candidiasis		
Candid VC	101	14.4
Ointment	52	7.4
Hot Water	68	9.7
Injection	45	6.4
Flu cytosine	63	9.0
Other	84	12.0
Non-response	287	41.0

Source: Field survey (2020)

As compared to studies conducted by Konadu, et al (2019) which recorded 36.5%, and that of Waikhom et al. (2020) as 30.7%, 47% prevalence level of vulvovaginal infection found among SHS students in this study is relatively higher. This may be attributed to the students' inadequate knowledge and poor personal hygiene practices. A high prevalence level of vulvovaginal infection suggests that there must be more education on STIs (especially on VVC) for the students to eliminate or at worst to minimise misconceptions on the diseases that usually affect the human reproductive system. Improper diagnosis and treatment of STIs may have future consequences such as blockage of fallopian tubes, pelvic inflammatory diseases leading to infertility in females. Misconceptions on the supposed benefits of douching to "tighten" the vagina may rather perpetuate the cycle of re-infection with yeast.

The results of this investigation support the notion that VVCs is a widespread condition in people. Thus, it is crucial that the District Directorates of Education provide the School Health Education Programme Units with the resources they need to regularly conduct programmes of student sensitization about the impacts of STIs and VVC. The results also concur with Foxman et al. (2013) and Denning et al. (2018) who estimate that 10% to 25% of people around the world have candida vulvovaginitis. There have been reports of 5% to 48.4% of females having vaginal yeast isolates, depending on their age, location, and socioeconomic position. (Abu-Elteen et al., 1997; Abruquah, 2012).

According to Ayeh-Kumi et al. (2007), both men and females are now more likely to have urinary Candida infections. According to their research, the incidence rate varied from 3.5% in 2001 to 5.1% in 2003. However, the present investigation was restricted to females. Ayeh-Kumi et al. (2007) speculated that there may be more species involved in the reported high prevalence of Candida infection, but they were unable to identify them. The main therapeutic option for treating yeast infections is the use of antifungal medicines since there are presently no licenced vaccinations for preventing yeast infections.

Although the current study revealed the use of some antifungal medication, it also revealed some home remedies for treating the condition such as sitting in salty hot water, and with ointment. However, the efficacy of these home remedies has not been established yet. The misconception in the use of these home remedies persists because those infected with vulvovaginal candidiasis may not be aware that the causative organism for the condition is a fungus and that an antifungal agent is required to cure the disease. Vaginal

discharge occurs when pathogenic organisms invade and proliferates in or around the vagina that creates discharge, odour, irritation, or itching. Home remedies are usually employed as a way of minimising discomfort, discharges and the odour associated with the infection. This offers a temporal relief but in turn, causes changes in the normal flora and fauna of the vagina which rather makes the vagina more susceptible to yeast and other infections. School Health Education Programme Coordinators in the District Directorate of Education in conjunction with District Directorate of Health and their representatives in the school have the responsibility of designing and disseminating health educational materials and organising health educational programmes. These programmes are to help create awareness and sensitisation for students

Aside from cost and safety, the issue with using antifungal medications is the emergence of drug-resistant strains during therapy (Talaro & Talaro, 1996). This study also showed that some patients still contracted fungus while using antifungal medications. Adjapong et al. (2015) verified that Candida rugosa has lately been mentioned as a potential “emerging” fungal pathogen, while being fairly infrequent as a cause of invasive fungal infections. Furthermore, C. rugosa does seem to be less susceptible to fluconazole, with regional variations in this pattern. It is becoming clear that a significant fraction of candidiasis cases may be caused by Candida species other than Candida albicans. Despite being labelled as “emerging” human fungal diseases, members of the C. rugosa species complex still make up a very tiny portion of isolated Candida species.

Level of knowledge on vulvovaginal candidiasis among adolescent girls in the senior high schools in Cape Coast Metropolis

The purpose of the research question was to assess the knowledge level of students on vulvovaginal candidiasis. The results are presented in Table 3 and Table 4 as well as Figure 3 and Figure 4. To answer this research question, the following sub-constructs were used: Vulvovaginal candidiasis affects the reproductive system and causes of Vaginitis Candidiasis. In addition, the sub-constructs: How one can get infected with vulvovaginal candidiasis; signs and symptoms of vulvovaginal Candidiasis contributed in answering the research question. Finally, Characteristics of Vaginal Discharge; Complications of Vulvovaginal Candidiasis and preventive measures of vulvovaginal candidiasis summed the constructs for the research question.

From Table 3, data on how vulvovaginal candidiasis affects the reproductive system and the causes of vulvovaginal candidiasis indicates that 93% (n=648) of the respondents agreed that candidiasis affect the reproductive system whiles 7% (n=46) indicated that candidiasis does not affect reproductive system. This could further mean that, 648 respondents' responses, representing 92.6%, are the views of the students within Cape Coast Metropolis regarding vulvovaginal candidiasis infection affect the reproductive system of the adolescents.

Reponses from students on the causes of vulvovaginal candidiasis showed that, 72% (n=501) were of the view that vulvovaginal candidiasis is caused by bacteria. In addition, 23% (n=160) stated vulvovaginal candidiasis is caused by fungi whiles 3% (n=23) also indicated the condition is caused by

virus. This finding implies that a significant number of the respondents lack knowledge on the causative agent for vulvovaginal candidiasis.

Table 3: Causes of vulvovaginal candidiasis and the possibility of the infection affecting the reproductive system

Affect	Frequency	Percent
True	648	92.6
False	46	6.6
Non-response	6	0.8
Causes of VVC		
Bacteria	501	71.6
Fungi	160	22.9
Virus	23	3.3
Non-response	16	2.3

Source: Field survey (2020)

Students' knowledge on the mode of transmission of the infection was also elicited. About 90% (n=632) of the respondents cited the use of public washrooms as one way of getting infected by candidiasis. From Table 3, 67% (n=469) stated that contracting other infections or conditions makes one susceptible to opportunistic infection such as candidiasis, and 64% (n=447) indicated that drying wet underwear in the room as one sure way of getting infected with candidiasis.

Douching was also cited by 20% (n=142) of the respondents as a means for contracting the infection. Respondents that indicated douching cited reasons such as using public washroom, unnecessary insertions into the vaginal and having other infection as indications for douching as such ways of contracting vulvovaginal candidiasis.

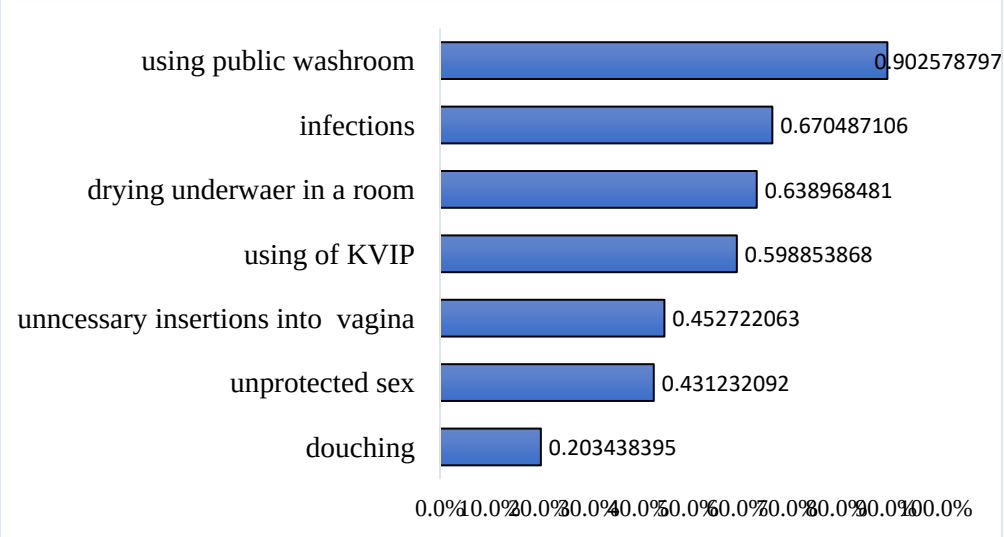


Figure 3: How one gets infected with vulvovaginal candidiasis

Key: 4 or more responses indicate high knowledge

Less than 4 responses indicate low knowledge

Further questions were posed to respondents to assess their knowledge on the signs and symptoms of VVC. Results in Figure 34 showed that majority of the respondents 92% (n=644) cited vaginal itching as a major symptom of VVC. In addition, 72% (n= 503) cited excessive vaginal discharge as another sign and symptom. Also, discharge of white yeast odour was another symptom indicated by 71% (n=235) while 68% (n=477) indicated change in the colour of discharge as a sign and symptom of candidiasis infection. Additionally, 34% (n=496) of the respondents who indicated abdominal discomfort as a sign and symptom also cited itching, excessive vaginal discharge, discharge of white yeast, burning sensation as signs and symptoms of vulvovaginal candidiasis.

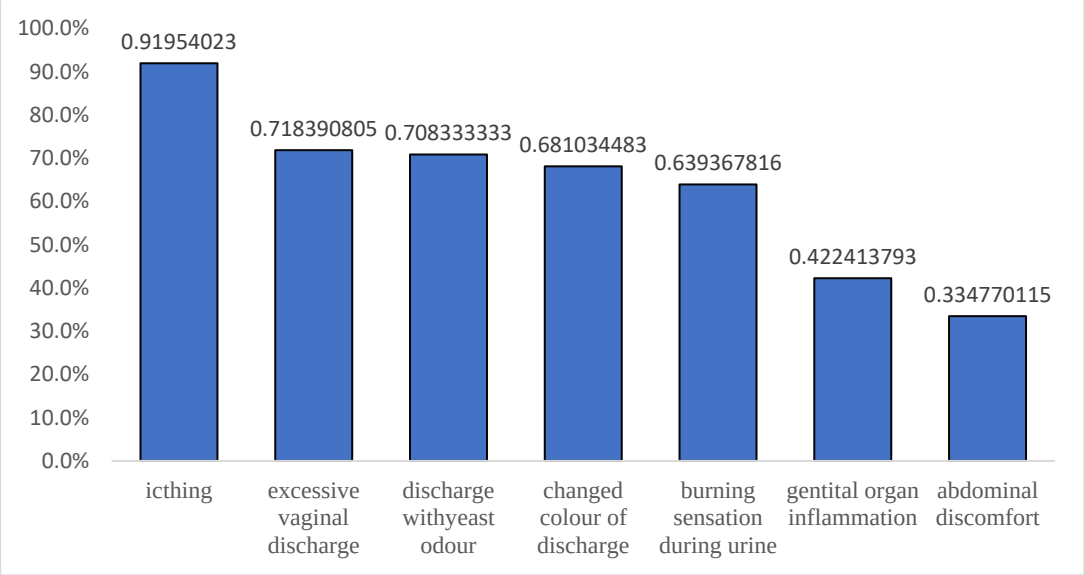


Figure 4: Signs and symptoms vulvovaginal candidiasis

Key: 4 or more responses indicate high knowledge

Less than 4 responses indicate low knowledge

Characteristics of vaginal discharge, preventive measures and the complications of vulvovaginal candidiasis are presented in Figure 4. Results showed that, 75% (n=522) of the respondents cited cream-looking and sticky as one of the characteristics of vaginal discharge when infected by candidiasis whiles 47% (n=326) of the respondents indicated white and sticky discharges. Again, 13% (n=89) reported observing grey and sticky discharges as a characteristic of an infection.

On the complications of vulvovaginal candidiasis, results showed that 69% (n=473) of the participants postulated that the infected person experienced persistent discomfort, 57% (n=393) had inflammation around the vagina area, 57% (n=391) suffered from recurrent vaginal candidiasis and 47% (n=323) faced infertility. This percentage of respondents might have indicated other conditions such as persistent discomfort, pelvic inflammatory disease, persistent pelvic pain as complications of vulvovaginal candidiasis.

In order to assess the participants' knowledge on preventive measures of vulvovaginal candidiasis, further questions were posed to the participants. From Figure 4, 96% (n=669) and 78% (n=555) of respondents revealed that preventive measures of vulvovaginal candidiasis were; keeping the genital area clean and changing of underwear, respectively. However, a few of respondents 19% (n=132) suggested that wearing tight cotton underwear, using scented sanitary pads, keeping the genital area clean frequently as well as changing of underwear prevent infection. Furthermore, 8% (n=53) of respondents indicated washing vagina with soap as a preventive measure against VVC infection.

Table 4: Characteristics of vaginal discharge, complication and preventive measures of vulvovaginal candidiasis

Characteristics of vaginal discharge	Responses		Percent of Cases
	N	Percent	
Grey and Sticky	89	9.8	12.8
White and Sticky	326	34.8	46.9
Cream and Sticky	522	55.7	75.1
Complications of VVC			
Persistent Discomfort	473	23.6	68.7
Persistent Pelvic Pain	209	10.4	30.3
Recurrent Vaginal Candidiasis	391	19.5	56.7
Inflammation Around Vagina	393	19.6	57.0
Infertility	323	16.1	46.9
Pelvic Inflammatory Disease	212	10.6	30.8
Preventive measures of VCC			
Keeping the Genital Area Clean	669	43.8	96.0
Using Scented Sanitary Pads	121	7.9	17.4
Washing Vagina with Soap	53	3.5	7.6
Frequent Changing of Under Wears	555	36.3	79.6
Wearing Tight Cotton Under Wears	131	8.6	18.8

Source: Field survey (2020)
Key: 4 or more responses indicate high knowledge
Less than 4 responses indicate low knowledge

This research has shown that a large portion of the population in the study region was ignorant about the causes of vulvovaginal candidiasis. They must be informed of the infectious disease's origins in order to put preventative measures in place to manage vulvovaginal candidiasis. However, the illness is brought on by an excess of yeast (fungi) that naturally resides in the vagina. This indicates that pupils do not know enough about what causes the problem. Since the over-the-counter (OTC) medicines for the treatment of bacterial infections vary from those for the treatment of fungal infections, this lack of information might result in incorrect self-diagnosis, which could result in incorrect therapy. This may also imply that some students mistakenly believe that all vaginal illnesses or infections are brought on by bacteria.

In addition, research participants feel that using public washrooms and KVIPs, drying pants in the room and engaging in unprotected sex are all risk factors for acquiring vulvovaginal candidiasis. Vulvovaginal candidiasis is more common among women who are unhygienic or use unhygienic toilet facilities; this finding is consistent with the findings of Shaaban, Youssef, Khodry, and Mostafa (2013) and Sobel (2015), who also concluded that this condition has a negative impact on reproductive health.

The finding of the study also supports that of Johnson et al., (2010) who concluded that the respondents seem very aware and knowledgeable about vaginal infections, but awareness of some particular infections is low with self-reported incidence considerably less than prevalence rates, suggesting misdiagnosis. The current study also revealed that individuals have some level of knowledge (high knowledge) on some characteristics, sign and symptoms, complications and preventions of vulvovaginal candidiasis. Kauffman et al. (2000) stated that due to limited knowledge about the signs and symptoms of

the condition, majority of patients with candiduria (that is, presence of *Candida* in urine) suffer a completely benign process. However, candiduria is sometimes a marker of disseminated candidiasis (Galle & Gianinni, 2004).

Women all across the world engage in various forms of vaginal hygiene practises. Some of the most frequently cited reasons for this behaviour were for hygiene (especially during menstruation, prior to or following sex, or during pregnancy), for disease or pregnancy "prevention," to meet the expectations or preferences of sexual partners, or simply to follow traditional norms learned as children from mothers or grandmothers (Chen et al., 2017).

Douching with water, detergent, or other chemicals like alum powder, using fingers, or cloth are all vaginal practises that Srivastava et al. (2004) find are connected to vulvovaginal candidiasis. Vulvovaginal candidiasis may also be contracted by the use of other methods, such as the insertion of natural, domestic, or commercially accessible items like Vicks to clean, dry, or "tighten" the vagina.

Attitude towards Vulvovaginal Candidiasis among Adolescent Girls in the Senior High Schools in Cape Coast Metropolis

The purpose of this research question was to find out students' attitude toward vulvovaginal candidiasis. From the responses, it was observed that the respondents attached much importance to variables such as X_1 (vulvovaginal candidiasis is normal; 45% n=314), X_3 (no treatment; 86% n=605), X_4 (the condition is a curse; 81% n=568) X_5 (infected when having sexual intercourse; 48% n=334), X_7 (shy away from infected persons; 73% n=514) and X_8 (discourage others infected; 82% n=572) because these variables recorded high values. This indicates that the students had positive attitude toward vulvovaginal candidiasis. A greater proportion of respondents also attached

great importance to variables like X_2 (lack of personal hygiene cause white; 64% n=449), X_6 (uncomfortable talking about it; 78% n=548), X_9 (will discuss condition with someone; 54% n=380), and X_{10} (seek advice when experience symptoms; eighty-nine (89% n=623), because they recorded very high frequencies as presented in the Table 5. These students thought these variables play a great role towards vulvovaginal candidiasis and this signifies positive attitude possessed by the respondents towards the infection. Variables such as X_1 (vulvovaginal candidiasis is normal), X_5 (infected when having sexual intercourse), X_7 (shy from infected persons) and X_9 (will discuss condition with someone) recorded relatively unique frequencies among the variables where respondents neither agreed nor disagreed with the variables.

Table 5: Attitude towards vulvovaginal candidiasis

Variable	Disagree	Neutral	Agree	Non-response
Vulvovaginal candidiasis is normal	314 (45%)	98 (14%)	282 (40%)	6 (1%)
Lack of personal hygiene causes white	169 (24%)	74 (11)	449 (64%)	8 (1%)
No treatment	605 (86%)	36 (5%)	44 (6%)	15 (2%)
The condition is a cursed	568 (81%)	41 (6%)	64 (9%)	27 (4%)
Infected when having sexual intercourse	334 (48%)	190 (27%)	165 (24%)	11 (2%)
Uncomfortable talking about it	84 (12%)	63 (9%)	548 (78%)	5 (1%)
Shy from infected persons	514 (73%)	99 (14%)	83 (12%)	4 (1%)
Discourage others who are infected	572 (82%)	24 (3%)	96 (14%)	8 (1%)
Will discuss condition with someone	149 (21%)	167 (24%)	380 (54%)	4 (1%)
Seek advice when having symptoms	31 (4%)	43 (6%)	623 (89%)	3 (1%)

Source: Field survey (2020)

According to the results, teenage girls' perspectives on vulvovaginal candidiasis include factors like a belief that poor hygiene practises are to blame, reluctance to speak about the issue, and a willingness to do so. Others reasoned that they would get help when they had symptoms or had a more optimistic outlook on the disease if these factors had high loadings in the table, suggesting that they were given a lot of weight. This suggests that most respondents believed that this factor may either have no effect on their opinion of vulvovaginal candidiasis or could have an effect on their opinion. They may not treat the illness as seriously or as important to their health if they get it, which might have serious consequences.

This study backed up the work of Srivastava et al. (2004), who evaluated women's perspectives on the prevalence of vaginal infections, by noting that many women all over the world place a premium on maintaining good feminine hygiene for the sake of their physical and mental health. Richard, Asare, and Paul (2017) found that the majority of women with candidiasis who participated in the research sought for guidance from friends and family members, as well as their spouses. All of the people in the research who said they didn't want to ask for help also said they felt ashamed. Most women accompanied their husbands or a close female companion to the hospital. This suggested that infected women did not attempt to conceal their condition from loved ones.

What makes Senior High School Students in Cape Coast Metropolis seek Medical Treatment during Vulvovaginal Candidiasis Infection?

The purpose of this research question was to assess what makes senior high students in Cape Coast Metropolis seek medical treatment during vulvovaginal candidiasis. Data from respondents on what makes students seek medical treatment when infected with vulvovaginal candidiasis are presented in Table 6.

From Table 6, 29% (n=204) of the respondents indicated itching. Some other signs and symptoms such as discomfort; (24%), odour; (23%), pain; (14%) and others; (6%) as factors that influenced their decision in seeking medical treatment. However, 4% (n=30) of the respondents did not respond to the item in the research instrument.

Participants were further asked if they were satisfied with medical attention given to them. From Table 6, about 49% (n=343) indicated that they were satisfied with the medical attention given whiles 15% (n=107) disagreed that they were satisfied and 29% (n=206) did not indicate if they were satisfied with medical attention.

The findings in Table 6 show that 84% (n=586) of the respondents were willing to go for medical treatment any time they would get affected by vulvovaginal candidiasis. Also, 12% (n=86) of the respondents were of the view that they would not go for medical treatment when infected. Furthermore, 4% (n=28) of the respondents were indecisive whether or not they would go for treatment when infected. About 54% (n=377) of the respondents claimed that getting infected with vulvovaginal candidiasis was very uncomfortable whiles 30% (n=211) believed that the experience was just uncomfortable. Also, 11%

(n=77) of the respondents indicated that experiencing vulvovaginal candidiasis was not an uncomfortable situation. However, 5% (n=35) did not provide any responses.

Table 6: Reasons for seeking medical treatment for VVC by SHS students

Variables	Frequency	Percent
Cause for treatment		
Pain	96	13.7
Discomfort	170	24.3
Itching	204	29.1
Odour	160	22.9
Others	40	5.7
No response	30	4.3
Satisfied with Med attention		
Yes	343	49.0
No	107	15.3
Don't Know	206	29.4
Non-response	44	6.3
Go for treatment anytime		
Yes	586	83.7
No	86	12.3
Non-response	28	4
Experience Candidiasis		
Uncomfortable	211	30.1
Very Uncomfortable	377	53.9
Not Uncomfortable	77	11.0
Non-response	35	5
Total	700	100

Source: Field survey (2020)

The findings from this study revealed that individuals will seek help as a result of the discomfort associated with the infection. Participants in the study identified variables that would make them seek medical treatment. This includes itching, discomfort, odour, pain and the uncomfortable experience that goes with the infection.

At least 75% of women will have an episode of Candida vulvovaginitis at some point in their lives, according to research by Saporiti, Gómez, and Levalle (2001) and Ferrer (2000). Almost half of these women will experience

repeated episodes. The present research confirms that if a person has or suffers from repeated bouts of vulvovaginal candidiasis, the experience is not particularly reassuring. Therefore, symptoms like discomfort, itching, smell, and pain experienced by responders would prompt them to seek medical attention whenever they were infected. People's propensity to seek out and make use of medical care and treatment is an example of "health-seeking behaviour," a term used to describe the positive lifestyle choices made by individuals. The practise of seeking medical treatment deviates from this broad definition. Candida vulvovaginitis was shown to be the most prevalent kind of yeast infection (Sobel, 1992). Sobel went on to explain that burning, thick vaginal discharge, pain, dysuria, and itching are all indications of Candida vulvovaginitis in women. Itching may come from the inside as much as the outside. This might be quite painful for women and could even have a bad effect on their health. Therefore, individuals may seek for medical help to alleviate their problems.

A person's pursuit of health may be affected by their own views or perceptions about illnesses, methods for lowering disease incidence, and other interpersonal aspects with an effect on perception, attitude, and conduct. Sobel went on to explain that burning, thick vaginal discharge, pain, dysuria, and itching are all indications of Candida vulvovaginitis in women. Itching may come from the inside as much as the outside. This might be quite painful for women and could even have a bad effect on their health. Therefore, individuals may seek for medical help to alleviate their problems.

A person's pursuit of health may be affected by their own views or perceptions about illnesses, methods for lowering disease incidence, and other

interpersonal components (Hochbaum, 1958). Adolescents with vulvovaginal candidiasis have unique perspectives on the gravity or severity of a certain intervention or disease.

Medical information and expertise often informs adolescents' assessments of the significance or severity of a problem. A person's outlook on the difficulties presented by their illness or the way it may alter their life in general may also contribute to this phenomenon (McCormick-Brown, 1999). The individual's perception of his or her own health state and the incidence of morbidity may influence his or her decision to seek medical attention. One's perception of a condition's seriousness and its effects may be influenced by factors including the potential consequences of ignoring medical advice, the degree of risk involved, or the severity of the sickness itself. Senior high school students with vulvovaginal candidiasis may be influenced by their own self-perception to seek medical treatment in order to better their health.

The higher one's sense of vulnerability or danger, the more likely it is that they will take precautions. Perceived danger is the outcome of a combination of vulnerability and severity (Stretcher & Rosenstock, 1997). People's actions and decisions may alter and they may seek medical help if they believe they are at danger of contracting a severe illness or condition, as in the case of VVC. As people become more worried about developing serious health problems, they adjust their lifestyle accordingly. A person's perception of their own risk for developing a disease linked to VVC, for instance, may change depending on their individual risk assessment. It follows that a person's propensity to seek medical advice/care and better her health state may be

influenced by personal risk based on characteristics or behaviours that increase or decrease his or her likelihood of getting illnesses.

Understanding the factors that contribute to the development of VVC and how to mitigate them might reduce a person's perceived advantage, or the degree to which they value or gain from the adoption of the new activity. Therefore, the teenager weighs the health behaviour on the basis of its advantages or anticipated benefits in lowering susceptibility to and the severity of the virus. Teenage students in their final year of high school may be more likely to make positive lifestyle changes or seek medical attention if they are made aware that doing so will reduce their risk of contracting and suffering from VVC by relieving the discomfort, itching, and pain they experience during this time.

A perceived barrier is an issue that a person recognises as standing in the way of meeting his or her health care requirements. The belief that the advantages of the new habit exceed the costs of maintaining the old behaviour may play a role in this (Centres for Disease Control and Prevention, 2004). The individual may consider their own capacity and external factors in regard to their health requirements. Before deciding how to meet their health care needs, people often weigh a number of factors, such as the cost of treatment and preventative service, the convenience of the health care centre, the distance, the psychological stress of waiting and a long journey, the attitude of the providers, and so on (Hochbaum, Rosenstock, & Kegels, 1952). Health-seeking behaviours may be explained by any one of these perspectives, or by a mixture of them. Additionally, signals to action, incentive factors or modifying variables, and self-efficacy have been included to the model.

Culture, education, experience, talents, and drive are just a few examples of how outside factors may influence each of the four main perceptions stated (Glanz Rimer & Lewis, 2002; Hochbaum, 1958). These are personal traits that have an effect on how people see their health care options. Schools, grades, and socioeconomic status were all considered moderating factors in this investigation.

A "cue to action" is anything that prompts a person to do some kind of action. Cues to action are defined as stimuli that lead to desirable health behaviours. Both internal and exterior signals, here meaning environmental inputs, are possible (Bogart & Delahanty, 2004; Rimer, 1997). Some examples of these are viral viral campaigns (VVC), social media reports, media campaigns, the advice of others, and provider-issued reminder postcards or pamphlets (Ali, 2002). As an example, in cues to action, the availability of health information, the availability of suitably equipped health care service, the advise of a healthcare practitioner, and the physical explanation of the symptom's relationship with a health problem may all play a role in meeting the individual's health care requirements.

Having confidence in one's own abilities is known as self-efficacy (Bandura, 1977). Unless they are confident in their abilities, people seldom try out novel activities. Even if someone sees the value in trying a new habit (perceived benefit), they may not give it a go if they feel they cannot succeed at it (perceived barrier). For instance, providing easily available facilities, motivating, guiding, and encouraging teenagers to utilise preventative and curative facilities to cope with his or her health concerns is necessary to increase

their confidence and capacity to access health requirements while in secondary school (SHS).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of the study was to measure the prevalence, knowledge, attitude and health seeking behaviour on vulvovaginal candidiasis among adolescent girls in senior high schools in the Cape Coast Metropolis.

This chapter presents summary, main findings, conclusions, and recommendations.

Summary

Candidiasis affects different parts of the body with the signs and symptoms fluctuating among individuals based on the area affected as well as the infective pathogen. *Candida spp* can normally live in any part of the body such as the mouth, throat, gut, and vagina as well as on skin without causing any problems. It is estimated that about 20% of women usually have *Candida spp* in the vagina without having any symptoms Thus, *Candida* can multiply and cause an infection if the environment inside the vagina changes in a way that encourages its growth. The environmental changes may occur in the vagina as a result of hormones, medicines, or modifications within the immune system some of which affects adolescents more. This is because they are becoming sexually active and likely engage in risky sexual practices with less hygienic reproductive behaviour and accompanying infections of sexually transmitted infections.

Vulvovaginal candidiasis is a non-notifiable disease and has been excluded from the ranks of sexually transmitted diseases. Not surprisingly, vulvovaginal candidiasis has received very little attention by public health authorities, funding agencies, and researchers. Epidemiologic data on risk

factors and pathogenic mechanisms remain inadequately studied. Most interestingly, standards of care, including diagnosis and therapy, remain undefined. However, most affected people do not seek prompt treatment due to shyness and sometimes stigma thereby making it very difficult to receive effective treatment resulting in recurrence of the condition.

This study was underpinned by four key research questions: prevalence of vulvovaginal candidiasis among adolescent girls in the Senior High Schools, their level of knowledge on vulvovaginal candidiasis, the attitude towards vulvovaginal candidiasis, and what makes adolescent girls in the senior high schools seek healthcare during vulvovaginal candidiasis. The descriptive cross-sectional survey design was adopted for this study. The study involved female students from two all-female senior high schools and two mixed senior high schools as the sample

The questionnaire had both open and closed ended items. There were 33 items which were divided into four sections. Section A contained items soliciting data on the socio-demographic data of the participants such as; age, sex, class, religion, geographical location and ethnicity. Section B contained items to collect data on prevalence of Vulvovaginal candidiasis among students. Section C had items eliciting data on students' level of knowledge on Vulvovaginal candidiasis. Section D contained items soliciting data on students' attitudes toward the condition, effects and preventive measures of candidiasis and Section E eliciting data on what makes SHS students seek medical treatment when infected with vulvovaginal candidiasis.

Descriptive statistics such as frequencies and percentages were used to analyse data collected. A sample of 700 respondents, comprising female adolescent students from two all-female schools: Wesley Girls High School (n=201), Holy Child School (n=200) and two mixed-sex schools: Efutu Senior High School (n=151) and University Practice Senior High School (n=148).

Main Findings

The following findings were drawn based on the analyses of the data collected for the study:

1. The study found the prevalence of vulvovaginal candidiasis infections to be 47% among the adolescents in Senior High Schools in Cape Coast. Also, cases of vulvovaginal candidiasis were treated whiles some cited seeking medical care in dealing with the condition. The study found a statistically significant relationship between medications used and duration of using them.
2. Most of the respondents knew that vulvovaginal candidiasis could affect the reproductive system but had no knowledge on the causative organism and the appropriate medication used in treating the condition.
3. Furthermore, the study found that most respondents attached a lot more importance to personal hygiene stating that lack of personal hygiene predisposes them greatly to acquiring vulvovaginal candidiasis
4. Respondents felt uncomfortable talking about the condition, but would discuss it with someone and seek advice when any symptoms were noticed.
5. Respondents stated that, vulvovaginal candidiasis could be caused by using public washroom, douching and having unprotected sex with an

infected person among others. However, these are the sources or modes of transmission with the causative organism being fungi.

6. The main reason given by respondents as an influencing factor or what makes them seek medical care was because they felt very uncomfortable with the itching nature of vulvovaginal candidiasis.
7. In addition, most respondents were advised by their parents to seek health care.

Conclusions

1. The prevalence level is high among the adolescent in senior high schools in Cape Coast Metropolis.
2. Respondents had low knowledge on vulvovaginal candidiasis.
3. Poor attitude towards personal hygiene, lack of advice and not attaching much seriousness to the symptoms leads to prolong and untreated vulvovaginal candidiasis.
4. The discomfort associated with the infection and the medical attention need leads to the health seeking behaviour of persons suffering from vulvovaginal candidiasis.

Recommendations

The following recommendations have been made for the consideration of future researchers, policy making and implementation:

1. Due to the high prevalence of vulvovaginal candidiasis, there is a need for further studies, since the studies focused on only senior high students within the Cape Coast Metropolis. The sample to be used in further studies could be expanded by including females of older age groups and other students beyond Cape Coast Metropolis.

2. The public health care providers should be provided with more skills in efficient communication, health education and awareness creation on common health conditions like vulvovaginal candidiasis. This will empower students to take the right decisions on care and management.
3. Adolescent health clubs should be created in the senior high schools where among other things, students can have access to regular interaction with health care providers to acquire skills on personal cleanliness and awareness on how to maintain a healthy body.
4. School Health Education Programme Coordinators in the district directorate of education offices in conjunction with district directorates of health and their representatives in the school, have the responsibility of designing and disseminating health educational materials and organising health educational programmes. These programmes are to help create awareness and sensitisation for students
5. School health services and medical care should be provided in schools by qualified health personnel stationed in the various senior high schools so that students can have easy access to appropriate medical care as well as health advice on condition like vulvovaginal candidiasis among the female populace and the also the right medications to use.

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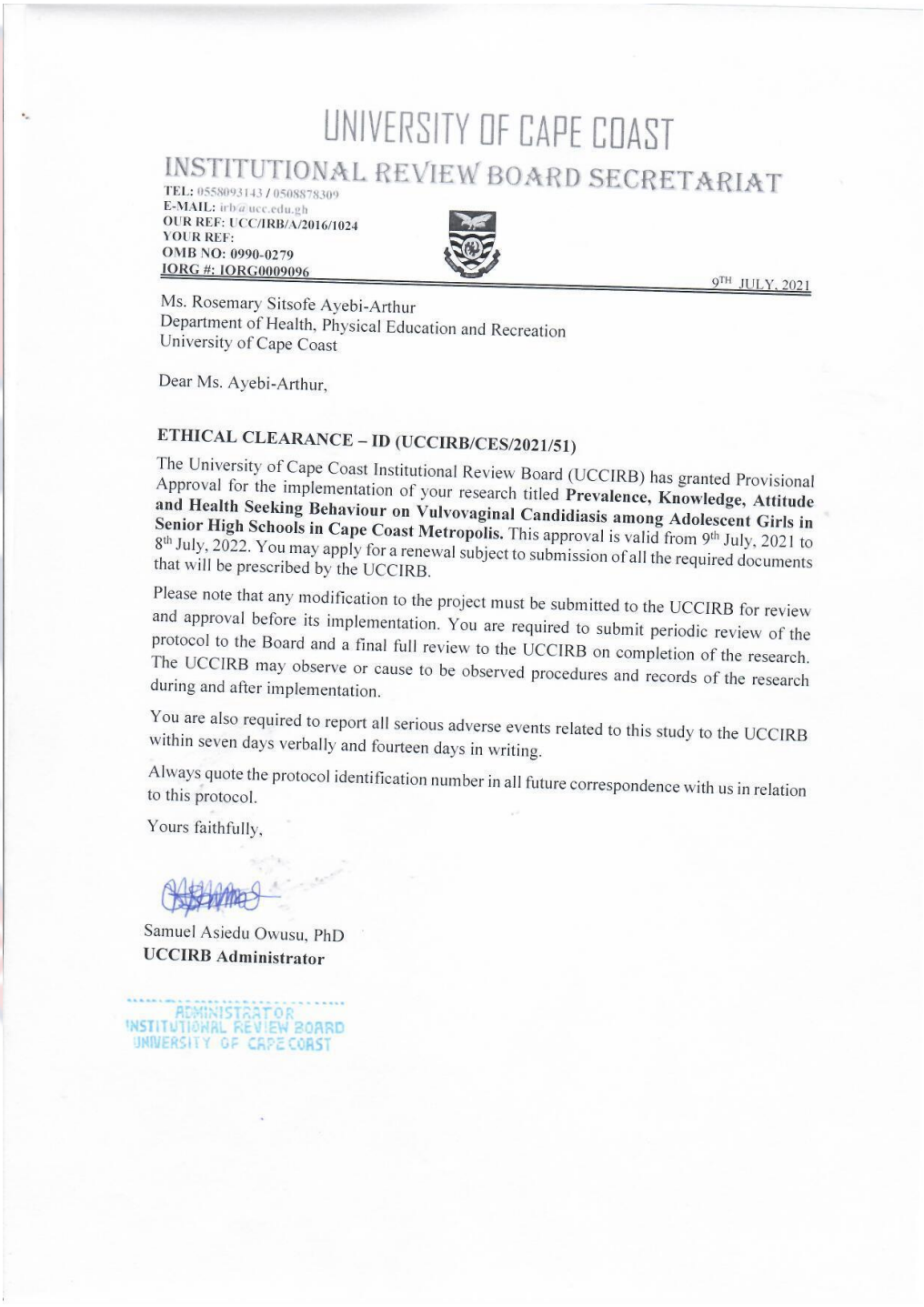
APPENDICES

APPENDIX I

Letter from Institutional Review Board



UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 0558093143 / 0508878309
E-MAIL: irb@ucc.edu.gh
OUR REF: UCC/IRB/A/2016/1024
YOUR REF:
OMB NO: 0990-0279
IORG #: IORG0009096

9TH JULY, 2021

Ms. Rosemary Sitsofe Ayebi-Arthur
Department of Health, Physical Education and Recreation
University of Cape Coast

Dear Ms. Ayebi-Arthur,

ETHICAL CLEARANCE – ID (UCCIRB/CES/2021/51)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research titled **Prevalence, Knowledge, Attitude and Health Seeking Behaviour on Vulvovaginal Candidiasis among Adolescent Girls in Senior High Schools in Cape Coast Metropolis.** This approval is valid from 9th July, 2021 to 8th July, 2022. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asiedu Owusu, PhD
UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST

APPENDIX II

Introductory letter from Supervisor

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION
DEPARTMENT OF HEALTH, PHYSICAL EDUCATION & RECREATION

TELEPHONE: +233 - (0)206610931 / (0)543021384 / (0)268392819
TELEX: 2552, UCC, GH.
EMAIL: **hper@ucc.edu.gh**
Cables & Telegrams:
UNIVERSITY, CAPE COAST

Our Ref: **ET/MHE/17/0008/5**

3rd February, 2021.

The Chairman
Institutional Review Board
University of Cape Coast
Cape Coast

INTRODUCTORY LETTER: ROSEMARY SITOFE AYEBI-ARTHUR (ET/MHE/17/0008)

The bearer of this letter, Rosemary Sitsofe Ayebi-Arthur, is an MPhil student of the above-named department. I support her application for ethical clearance from your outfit. She is conducting a research on the topic **"Prevalence, Knowledge, Attitude and Health Seeking Behaviour on Vaginal Candidiasis Among Adolescent Girls in Senior High School in Cape Coast Metropolis."** As part of the requirements for obtaining a Master of Philosophy degree in Health Education at the University of Cape Coast.

I am the Principal Supervisor of her work and she has satisfied the conditions for data collection. I shall be grateful if she is given the necessary assistance.

Counting on your usual co-operation.

Thank you.

Dr. Edward Wilson Ansah
edward.ansah@ucc.edu.gh

for
The Principal
Supervisor

APPENDIX III
Introductory letter from Department

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION
DEPARTMENT OF HEALTH, PHYSICAL EDUCATION & RECREATION

TELEPHONE: +233 - (0)206610931 / (0)543021384 / (0)268392819 9[5]

TELEX: 2552, UCC, GH.

EMAIL: hper@ucc.edu.gh

Cables & Telegrams:
UNIVERSITY, CAPE COAST

Our Ref: **ET/MHE/17/0008/4**

3rd February, 2021.

The Chairman
Institutional Review Board
University of Cape Coast
Cape Coast

INTRODUCTORY LETTER: ROSEMARY SITSOFE AYEBI-ARTHUR (ET/MHE/17/0008)

The above-named person is a student of the Department of Health, Physical Education and Recreation of the University of Cape Coast. She is pursuing a Master of Philosophy degree in Health Education. In partial fulfilment of the requirements for the programme, she is conducting a research for her thesis titled **"Prevalence, Knowledge, Attitude and Health Seeking Behaviour on Vaginal Candidiasis Among Adolescent Girls in Senior High School in Cape Coast Metropolis."**

She has defended her thesis proposal and has passed. I therefore kindly request that she is granted ethical clearance to enable her conduct the research.

Counting on your usual co-operation.

Thank you.

Daniel Apaak (Ph.D)
HEAD

APPENDIX IV

UNIVERSITY OF CAPE COAST

COLLEGE OF EDUCATION STUDIES

FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION

DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND RECREATION

Valued Respondent,

My name is Rosemary Sitsofe Ayebi-Arthur, an MPhil. student in the above-named institution seeking to undertake a study on **Prevalence, Knowledge, Attitude and Health Seeking Behaviour on Vulvovaginal Candidiasis (White) among adolescent girls in senior high schools in Cape Coast Metropolis.**

The findings of this study will be of immense benefit to you as students of second cycle institutions, Ministries of Health and Education, teachers, reproductive health experts, parents, curriculum developers and the general public to articulate effective programmes on reproductive health education for second cycle students. Conclusions from this study will encourage both the Ministries of Education and Health to train and equip more peer educators who will further educate secondary school students on the 'right' knowledge and attitude toward vulvovaginal candidiasis, its consequences and best ways of avoiding and treating it and also help to challenge the adolescents to healthy reproductive and sexual behaviours and practices in order to avoid contacting its related infections and minimise it complications.

This exercise is purely an academic one and as such responses given would be treated with the utmost confidentiality. **Please do not write your name** on the questionnaire but append your signature. Fold the paper and drop it in the box provided when you are done answering the questions. Respondents will spend about 20 minutes to complete the responses.

For any further clarification in relation to the questions, please contact my supervisor, Dr Thomas Hormenu on 0244213465, Dr Edward Wilson Ansah on 0247703379 or Rosemary S. Ayebi-Arthur 0244736083

Thank you

I will accept to participate in this study

Signature…… Date:……

Questionnaire

Instructions: Please tick [√] in response to the appropriate spaces provided.

Section A: Demographic Data

1. Age. _____ (Please write)
2. Current Form (please write) --------
3. Programme of study.

   Sciences [ ]

   Home Economics [ ]

   Visual Arts [ ]

   General Arts [ ]

   Business [ ]
4. Ethnicity

   Akan [ ]

   Ewe [ ]

   Ga [ ]

   Nzema [ ]

   Dagbani [ ]
5. Religious background

   Christian [ ]

   Islamic [ ]

   Traditionalist [ ]

Section B: Prevalence of Vulvovaginal Candidiasis (White) among Adolescent Girls

6. Have you been affected by candidiasis before?

   Yes [ ]

   No [ ]

7. Have you had vaginal discharges before?

   Yes [ ]

   No [ ]

8. Was the discharge smelling?

   Yes [ ]

   No [ ]

   Never had it [ ]

9. If yes, how did you treat it?

   Seek medical care [ ]

   Self medicated [ ]

   Never had it [ ]

10. How often do you get infected with the VVC (white)?

    Very often [ ]

    Not often [ ]

    Once a while [ ]

    Never got infected [ ]

11. After treatment, were you re-infected with the ailment?

    Yes [ ]

    No [ ]

    Never had it [ ]

12. If you were re-infected, how soon were you re-infected after the treatment?

    1-2 weeks [ ]

    3-4 weeks [ ]

    Over a month [ ]

    Never re-infected [ ]

13. Are you currently receiving treatment or on medication for candidiasis?

    Yes [ ]

    No [ ]

    Never had it [ ]

14. How long have you been on the medication?

    1-2 weeks [ ]

    3-4 weeks [ ]

    Over a month [ ]

    Never had it [ ]

Section C: Knowledge of SHS Students on Vulvovaginal Candidiasis

15. Vulvovaginal Candidiasis is a group of infections that affect the reproductive system

    True [ ]

    False [ ]

16. Vulvovaginal Candidiasis is caused by

    Bacteria [ ]

    Fungi [ ]

    Virus [ ]

17. How can one get infected with Vulvovaginal candidiasis? (tick as many as applicable)
    a. Unprotected sex [ ]
    b. unnecessary Insertion into the vagina [ ]
    c. Infections [ ]
    d. Using public and common washroom [ ]
    e. Drying underwear in the room [ ]
    f. Using KVIP [ ]
    g. Douching [ ]
18. What is the characteristic of vaginal discharge when one is infected? (tick as many as applicable)
    a. Grey and sticky
    b. White and sticky
    c. Cream and sticky
19. What are some of the signs and symptoms of this condition? (tick as many as applicable)
    a. Itching [ ]
    b. External genital organ inflammation “redness” [ ]
    c. Excessive vaginal discharge [ ]
    d. abdominal discomfort
    e. Changed colour of vaginal discharge [ ]
    f. viscous vaginal discharge with yeast odour
    g. Burning sensation during urination [ ]

20. Which of the following is/are the complications of vulvovaginal candidiasis? (tick as many as applicable)
    a. Persistent discomfort
    b. Persistent pelvic pain
    c. Recurrent vaginal candidiasis
    d. Skin inflammation around vagina
    e. Infertility
    f. Pelvic inflammatory disease
21. What are some of the ways of preventing vulvovaginal candidiasis?
    a. Keeping the genital area clean
    b. Using scented sanitary pads
    c. Washing the vagina with soap
    d. Frequent changing of under wears
    e. Wearing tight cotton under wears
22. Are you aware of some medications to treat the condition?

    Yes [ ]

    No [ ]

23. Please state some medications you are aware of that helps in treating the condition……

    ……..……

Section D: Attitude towards Vulvovaginal Candidiasis

24. Do you adopt measures to prevent the condition?

Yes [ ]

No [ ]

25. Indicate your response to the following statement (Tick one response for each statement **SD**-Strongly Disagree, **D**-Disagree, **N**-Neutral, **A**-Agree, **SA**- Strongly Agree

Statement	SD	D	N	A	SA
Vulvovaginal candidiasis is normal with all females.					
It affects females who do not maintain personal hygiene.					
There is no treatment for the infection.					
Vulvovaginal candidiasis is a cursed disease.					
Those who sleep with men are mostly affected.					
Persons who get affected with this condition feel uncomfortable talking about it to the school and hospital authorities.					
I shy away from those I know to be infected with the infection.					
I will discourage those infected to seek medical care.					
I don't mind reporting the condition to someone else					

26. Do you seek prompt advice when you have the symptoms of the condition?

    Yes [ ]

    No [ ]

    Never [ ]

27. Will you readily encourage a colleague or anyone to seek medical attention on the symptoms of candidiasis?

    Yes [ ]

    No [ ]

    Don't know

Section E: what makes you Seek Healthcare during Vulvovaginal Candidiasis Infection

28. What makes you seek medical treatment when affected by candidiasis?

    Pain [ ] Discomfort [ ]

    Itching [ ] Others, please specify ……

29. Were you advised by someone to seek medical attention?

    Yes [ ]

    No [ ]

30. If yes to the Q29, who gave the advice?

    Parent [ ] Teacher [ ]

    Senior in school [ ] colleague [ ]

    others, please specify……

31. Were you satisfied with the medical attention given to you?

    Yes [ ]

    No [ ]

32. Will you like to go for medical treatment any time you are infected?

Yes [ ]

No [ ]

33. How do you tell the experience of vulvovaginal candidiasis infection?

Uncomfortable [ ]

Very Uncomfortable [ ]

Not Uncomfortable [ ]

Thank you for answering these items.

APPENDIX V
Consent form

UNIVERSITY OF CAPE COAST

COLLEGE OF EDUCATION STUDIES

FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION

DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND RECREATION

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Thank you

I will accept to participate in this study

Signature…… Date:……