EXPERIENCE OF VAGINAL DOUCHING AMONG FEMALE UNDERGRADUATES OF THE UNIVERSITY OF IBADAN, NIGERIA

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DEDICATION

To the Almighty God

For in Him we live,

And move

Have our being

ABSTRACT

Vaginal douching (VD) is a global traditional practice involving the introduction of liquid substances into the woman's vagina which is believed to enhance sexual pleasure, hygiene, fertility or the reproductive health. It is often characterised by physical consequences such as ectopic pregnancy and pelvic inflammatory diseases. Despite these observations, many women douche regularly and the practice begins at a young age. This study was therefore designed to determine the awareness, perceptions, knowledge relating to VD and experience of VD among female undergraduate (FU) students of the University of Ibadan.

A descriptive cross-sectional survey was adopted using the qualitative (Focus Group Discussion) and quantitative (semi-structured questionnaire) methods of data collection. Four Focus Group Discussion (FGD) sessions were conducted in Queen Elizabeth, Queen Idia, Obafemi Awolowo and Alexander Brown FU halls of residence. Thereafter, the FGD responses were used to develop a semi-structured questionnaire that was used to interview 413 FUs selected using a 4-stage random sampling technique. The FUs were selected proportionately from halls of residence, blocks and rooms. The self-administered questionnaire included questions on socio-demographic characteristics, VD awareness, 8-point perception and 12-point knowledge scale of VD. Perception scores of ≤8 and >8 were classified as poor and good respectively. Knowledge scores of ≤3 and >3 were rated as poor and good, respectively. Qualitative data were analysed thematically while quantitative data were analysed using descriptive statistics and Chi-square test at $p = 0.05$.

Respondents' age was 20.5±2.5 years. A total of 269 (65.1%) respondents had heard of the term vaginal douching before. Of this total, the internet (21.9%) was the most common source of information, followed by friends (16.3%), health professionals (15.9%), books (12.6%) and mothers (8.5%). Very few (0.8%) heard about VD from religious institutions. Seventy-five percent had poor perception of VD practice. Only 34.0% of the respondents had good knowledge of VD and its adverse health effects. A total of 125 (30.0%) respondents had ever practiced VD and 66.7% of the respondents used commercially prepared douche and home-made douches (33.3%). About two-thirds (65.0%) douched everyday while 10.0% douched more than once daily. Fifty-six percent douched on the day of the study and 13.8% a day preceding the study.

Reported reasons for douching include sexual partner's influence (32.0%), the need to feel fresh, (42.5%), need to reduce vagina odour (34.4%), and to cleanse the vagina after intercourse (6.1%).

Vaginal douching is a common practice among female undergraduates and majority had poor perception and poor knowledge of the practice. Public enlightenment programmes can help to influence knowledge and perception as well as provide females with adequate information on the negative effects of the practice.

Keywords: Vaginal douching, Female undergraduates, Vaginal cleansing practices

Word count: 433

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CERTIFICATION

I certify that this project was carried out by Regina Bolutife BEJIDE in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Nigeria.

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GLOSSARY OF ABBREVIATIONS/ACRONYMS

ABH :	Alexander Brown Hall
ACOG:	American College of Obstetricians and Gynecologists
BV:	Bacterial Vaginosis
FGD :	Focus Group Discussion
FSW :	Female Sex Worker
HIV:	Human Immunodeficiency Virus
NSFG:	National Survey of Family Growth
PID :	Pelvic Inflammatory Disease
SPSS :	Statistical Package for Social Sciences
STI :	Sexually Transmitted Infections
UIUCH:	University of Ibadan/University College Hospital
VD:	Vaginal Douching
UI:	University of Ibadan
UNFPA:	United Nations Population Fund
UNICEF:	United Nations Children's Fund
WHO:	World Health Organisation

CHAPTER ONE

INTRODUCTION

Background of the study

Vaginal douching (VD) is a global traditional practice dating back hundreds of years, with the perception that it enhances sexual pleasure (Fonck, Kaul, Keli, Bwayo, Ngugi, Moses, Temmerman, 2001). It involves the introduction of liquid into the women's vagina for perceived hygienic or therapeutic purposes (Funkhouser, Hayes and Vermund, 2002). Sunday, Kaya, and Ergun (2011) defined vaginal douching as a traditional method widely used in the world involving the cleansing of the vagina with water and with or without solutions commonly practiced to sustain personal hygiene, to reduce discomfort and to prevent pregnancy. The onset of vaginal douching practice begins around the time women become sexually active between ages 13 and 19 years (Brotman, Klebanoff, Nansel, Zhang, Schwebke and Yu, 2008) based upon the recommendation of their mother or other female relatives (Cottrell, 2006). This vaginal douching initiation varies depending on the biological, cognitive and physiological development of an adolescent (Eylil, 2009). Hence, the Prevalence rates of vaginal douching vary considerably from country to country and region to region (Abma, Chandra, Mosher, Peterson and Piccinino 1997).

Existing literatures have demonstrated that the influence of significant orders play a great role in the promotion of vaginal douching practice. For instance, women douche based on the encouragement from mothers, female friends, health professionals and media. (Funkhouser, Hayes, and Vermund, 2002). Male partners are more supportive of vaginal douching due to the various sexual pleasure derived from the perceived benefits of douching (Mckee, Baquero, Anderson, and Karasz, 2009).

Products used for douching vary from its preparation to its ingredients. The substances used for douching can be either a commercially prepared product or a homemade product. Most women report using commercial products containing water and vinegar (Brotman, Klebanoff, Nansel, Zhang, Schwebke and Yu, 2008). Other substances used for douching include baking soda, betadine, water, vinegar with cleanser additive, Lysol, Pine-Sol, Clorox or bleach, boric acid, hydrogen peroxide, and carbonated beverages (Brotman, Ghanem, Klebanoff, Taha, Scharfstein,

Zenilman, 2008; Hutchinson, Kip and Ness, 2007). Ingredients of commercial douches include water, citric acid, sodium citrate, vinegar, diazolidinyl urea, cetylpyridinium chloride, and edentate disodium, benzoic acid, "lemon mist," octoxynol9, sodium benzoate, disodium ethylenediaminetetraacetic acid, and fragrance (Hutchinson et al.). Combined vinegar and water is the most commonly used home preparation, followed by water alone (Merchant, Oh and Klerman, 1999). The most common reason of douching was to feel good and fresh with high prevalence of personal cleanliness. Vaginal douching is also common in cultures where women consider their own bodies, menstruation and sexual intercourse to be dirty. They belief that vaginal douching is an important part of female hygiene and must be performed especially after menstruation and sexual intercourse causes women to douche habitually (Braunstein and Van de Wijgert, 2003). Another common reason for vaginal douching was religion, which is in consistence with the findings of Caliskan , Subasi , Sarisen (2006) and Kukulu (2006). Though ablutions only require that the outside of the genital organs be washed; this suggests that women simply misunderstand what ablutions mean.

Vaginal douching, particularly frequent vaginal douching, has been demonstrated by existing literatures to have a link to a number of adverse genitourinary effects. These genitourinary effects include increased risk for pelvic inflammatory disease, ectopic pregnancy, cervical carcinoma, reduced fertility, increased susceptibility to sexually transmitted infections (including HIV) and bacterial vaginosis (Zhang, Thomas and Leybovich, 1997; Brown and Brown, 2000; Caliskan, Subasi and Sarisen, 2006). Despite these observations, many women douche regularly and its practice begins at a young age (Vermund, Sarr and Murphy, 2001).

This explains why this study was designed to find out the prevalence and reasons for douching in a tertiary institution.

Problem Statement

There are several ways by which douching may contribute to disease (Martino and Vermund, 2002). Vaginal douching may remove normal vaginal flora, permitting the overgrowth of pathogens. It may also provide a pressurized fluid vehicle for pathogen transport, helping lower genital tract infections ascend above the cervix into the uterus, fallopian tubes, or abdominal cavity (Zhang, Thomas and Leybovich, 1997; Rosenberg and Phillips, 1992). These microbiologic and physical mechanisms may work in concert. Vaginal douching also disrupts the acidic environment of the vagina and therefore affects reproductive health. Vaginal flora is rich in aerobic bacteria, especially lactobacilli. Survival of vaginal bacteria depends on the vaginal pH.

Glycogen released from the cells of the vagina is converted to lactic acid by lactobacilli which produce hydrogen peroxide. Thus, the vaginal pH becomes acidic (3.8-4.2) (Cottrell, 2002; Martino and Vermund, 2002). This acidic pH is a defense mechanism which protects the vagina against infections. Solutions used for vaginal douching destroy the acidic environment of the vagina, decrease the quality and the quantity of lactobacilli in the vaginal flora and cause these bacilli to be replaced by pathogenic microorganisms (Abma et al. 1997; American College of Obstetricians and Gynecologists [ACOG], 1996; Merchant, Oh and Klerman, 1999).

Despite the documented adverse effects, many women consider vaginal douching a normal part of feminine hygiene, and in the United States, nearly one in three women practices douching (Chandra, Martinez, Mosher, Abma and Jones, 2005). In a statement made by Halima Danjuma a medical expert in Nigeria, in 2012 warned women not to indulge in cleaning their reproductive organs by themselves in u bid to control cervical cancer. As the practice of vagina douching which often expose women to infections is unnecessary because the vagina in itself has a natural cleansing mechanism.

Two earlier reviews of douching data in women (Zhang, Thomas and Leybovich, 1997) and adolescents (Merchant , Oh and Klerman , 1999) concluded that douching is harmful and should be discouraged because of its association with Pelvic Inflammatory Disease, preterm delivery, cervical cancer and ectopic pregnancy. An added concern is that, if douching reduces the density of normal vaginal flora, bacterial vaginosis might develop or there may be a predisposition to colonization by such sexually transmitted pathogens as *Neisseria gonorrhoeae* or *Chlamydia trachomatis*, filling the "ecologic niche" (Rosenberg and Phillips, 1992). Pathogenic bacteria may then ascend into the upper reproductive tract, leading to inflammatory scarring (endometritis, salpingitis, or peritonitis), the principal cause of ectopic pregnancy, early miscarriage, and infertility (Rosenberg and Phillips, 1992). Despite the complication of its practice, douching continues to be a common practice among young women (Zhang, Thomas and Leybovich, 1997).

Justification for the study

Studies have shown the risk associated with douching. According to Ivey (1997), about 70% of the women diagnosed with pelvic inflammatory disease were under 25 years. Therefore, physiologic risk for sexually transmitted diseases is greater among adolescent women, since they typically have ectopic columnar epithelial cells in the exocervix with a large transformation zone that is vulnerable to bacterial and viral sexually transmitted infections (Martino and Vermund 2002). Hence, some argue that it is especially important to caution adolescents about the potential

adverse effects of douching, as they may be even more susceptible to its adverse consequences. (Merchant, Oh and Klerman, 1999). A study carried out among commercial sex workers in Borno State, 62% of the respondents reported that they practiced douching (Mairiga, Kullima, and Kawuwa, 2010), however, there is paucity of evidence based information on issues relating to vaginal douching practices among undergraduates in Nigeria despite its reproductive health implications.

Therefore, issues and concerns that emerge from this study have the potential for facilitating evidence based interventions that may be used to address the problem of vaginal douching and its associated health effects among female undergraduates and other young women in Nigeria. Hence, this study will be carried out to assess the knowledge, perceptions, prevalence and practice of vaginal douching among female undergraduate students of the University of Ibadan, Nigeria. In addition to carrying out the stated objectives, this study would also help to report findings that would form basis for further intervention study on educating the populace on the complications and dangers associated with vaginal douching.

Research questions

The study provided answers to the following research questions

1. What is the level of awareness of douching among female undergraduates of University of Ibadan (UI)?
2. What is the level of Knowledge of the health effects of douching among female undergraduates of UI?
3. What are the perceptions relating to douching among female undergraduates of UI?
4. What is the prevalence of douching among female undergraduates of UI?
5. What are the factors influencing douching practice among female undergraduates of UI?

Broad Objective

The broad objective of this study was to determine the knowledge, perception and prevalence of vaginal douching among female undergraduate students in the University of Ibadan.

Specific objectives

The specific objectives of this study were to;

1. Assess the level of awareness of douching among female undergraduates of UI
2. Assess the level of Knowledge of the health effects of douching among female undergraduates of UI
3. Explore the perceptions relating to douching among female undergraduates of UI

4. Determine the prevalence of douching among female undergraduates of UI
5. Identify the factors influencing the douching practice among female undergraduates of UI

Operational definition of terms

Female Undergraduate:

A female hoping to earn her first degree award from the University of Ibadan and currently an occupant of any of the University recommended halls of residence.

Vaginal Douching:

Vaginal douching is placing a liquid solution in the vagina usually after menstruation, before, or after sexual intercourse for cleanliness, odour control or relief of vaginal itching and irritation

Vaginal Douche:

Substance or any device used to spray liquid solution upwards into the vagina.

CHATER TWO

LITERATURE REVIEW

General overview of vaginal douching

In French, the word *douche* is a conjugation of the verb *doucher*, which means "to shower or soak." Douching is most often defined as the practice of cleaning the inside of the vagina with a liquid solution (Martino, Youngpairoj and Vermund, 2004). Hence, vaginal douching means the washing or the soaking of the vagina with a liquid content that may come in a bottle or bag and sprayed through a tube with nozzles upwards into the vagina. According to Brown and Brown (2000), douching was described as a vaginal practice involving the insertion or external use of a substance or material to affect sexual pleasure or satisfaction, hygiene, fertility, or the reproductive health of a woman. This statement was supported by Funkhouser, Hayes and Vermund (2002), describing vaginal douching as a behaviour that involves the introduction of liquid into the women's vagina for perceived hygienic or therapeutic purposes. Vaginal douching was also described as the placing of a liquid solution in the vagina, usually after menstruation or before or after sexual intercourse, for cleanliness, odour control, or relief of vaginal itching and irritation (Ness, Hiller, Richter, Soper, Stumm, Bass, Sweet, Rice, Downs and Arai 2003; Cottrell and Close, 2008). However, douching is defined more broadly internationally as "vaginal practices" and can include inserting into the vagina (for a variety of reasons) liquid; herbs, leaves, and traditional powders; cloths; and solutions (Martino and Vermund. 2002).

Brief history of vaginal douching

The intravaginal cleansing with a liquid solution has been described as a traditional and ancient practice (Martino and Vermund, 2002). Over 3000 years ago, the *Papyrus Ebers* described garlic and wine douches for menstrual disorders and intravaginal instillation of cow's bile and cassia oil for pelvic inflammation (Byers, 1974 ; Whitson and Ellis, 1948). In the 18th century, Turkish women used a piece of sponge soaked in diluted lemon juice and then placed in the vagina as a reportedly very effective contraceptive (Himes, 1963). Modern douche solutions make use of ingredients such as benzoic, acetic, citric, lactic, and sorbic acids; cetylpyridinium chloride, bleach; Lysol, povidone-iodine, disodium EDTA; diazolidinyl urea; SD alcohol 40; baking soda; yoghurt, and water (Martino and Vermund, 2002). These ingredients serve in acidifying and alkalizing capacities and act as cleansers, antimicrobials, antiseptics, germicides, surfactants,

preservatives, and liquid vehicles. Some douche solutions are prepared at home by using household ingredients, but most are commercial preparations primarily consisting of vinegar and water (Martino and Vermund, 2002).

In present times,women predominantly douche for hygiene, treating an infection, preventing odour and infection, preventing pregnancy and cleansing after menstruation or sexual intercourse (Martino, Youngpairoj and Vermund, 2004).

Knowledge of the possible adverse effects of vaginal douching

Vaginal douching disrupts the acidic environment of the vagina and therefore affects reproductive health. Vaginal flora is rich in aerobic bacteria, especially lactobacilli whose survival depends on the vaginal pH. Glycogen released from the cells of the vagina is converted to lactic acid by lactobacilli which produce hydrogen peroxide. Thus, the vaginal pH becomes acidic 3.8-4.2 (Cottrell, 2002; Martino and Vermund, 2002). This acidic pH is a defense mechanism which protects the vagina against infections. Hence, solutions used for vaginal douching destroy the acidic environment of the vagina, decrease the quality and the quantity of lactobacilli in the vaginal flora and cause these bacilli to be replaced by pathogenic microorganisms (Abma et al. 1997, American College of Obstetricians and Gynecologists [ACOG], 1996; Merchant, Oh and Klerman, 1999). In vitro and in vivo studies indicate that douching results in microfloral changes in vaginal bacteria (Pavlova and Tao, 2000) that may increase susceptibility to infection.

Several lines of evidence suggest that adolescents and young adults who douche are more likely to contract sexually transmitted infections (STIs) and suffer from pelvic inflammatory disease (PID) and sequelae, including chronic pelvic pain, pelvic adhesions, pyosalpinx, tubo-ovarian abscesses, ectopic pregnancies and infertility, than older adults (Oh et al., 2003; Martino et al., 2004). The exocervix epithelium of adolescents is more susceptible to sexually transmitted infective agents (bacteria, viral and fungal) than adults. This increased sensitivity is largely due to the exocervix's larger transformation zone and changes in reproductive hormone levels during adolescence and young adulthood that induce considerable physical and tissue changes and may increase vulnerability to STIs (Arul et al., 1992; Zhang et al., 1997; Merchant et al., 1999; Funkhouser et al., 2002; Oh, Funkhouser, Simpson, Brown and Merchant, 2003; Martino et al., 2004, Krashin Kowmans, Bradshaw-Sydnor, Braxton, Evan Secor ,Sawyer, Markowitz, 2012). Hence, the possible adverse health effects of vaginal douching are immense, and they include, Pelvic Inflammatory Diseases, Sexually Transmitted Infections, cervical cancer, ectopic pregnancy, infertility and menstrual irregularities (Ekpenyong, Daniel and Akpan, 2014). Despite

the numerous adverse health effects of VD in women, there are generally no public health programs to educate the populace, especially those at a higher risk of practicing douching (that is, the less educated, women with low socio-economic status, young, black, unmarried and urban dwellers). Some women may not perceive it as a harmful behavior, while others may see it as a protective hygienic practice, as consistently documented in the literature (Lichtenstein and Nansel, 2001; Foch, McDaniel, Chacko 2001;. Martino et al., 2004). These women may be unaware of the adverse health consequences of VD and therefore continue in the act.

In previous studies, most douchers stated that they would have stopped douching if they knew about its adverse health consequences (Braunstein and de Wijgert, 2003; Kukulu, 2006). Funkhouser et al. (2002) found that women who received advice from a health care advisor to discontinue douching often discontinued the practice. Similarly, Cottrell (2005) reported that women who had been informed by a healthcare professional were less likely to have douched within the past 6 months than women who were not given this information. Ness et al. (2002) further confirmed this observation. In their study, over 85% of women indicated that they would have stopped the practice if they had been told that VD might cause STIs, infertility or cancer. Ekpenyong, Daniel, and Akpan (2014) also showed that past attempts to stop or reduce VD through educational efforts of health care professionals were associated with both fewer perceived adverse health consequences from douching and geographical location.

Physiology and adverse health effects associated with vaginal douching

i. Bacterial Vaginosis (BV)

Bacterial Vaginosis is an ecologic disease of the vaginal micro flora which is traditionally characterized by a shift in bacterial ecology from one dominated by lactic-acid-producing lactobacilli to a predominance of Gardnerella and anaerobic flora (Pybus and Onderdonk, 1997). BV is a common cause of malodourous vaginal discharge in women in which the balance of bacteria inside the vagina becomes disrupted. Epidemiologically, BV has been associated with adverse reproductive tract outcomes, including increased risk of pelvic inflammatory disease (Ness, Kip, Hillier, Soper, Stamm, Sweet, Rice and Richter, 2005), preterm delivery and low birth weight, and acquisition of human immunodeficiency virus type 1 (Martin, Richardson, Nyange, Lavreys, Hiller, Chohan, Mandaliya, Ndinya-Achola, Bwayo and Kreiss 1999). Though the etiology of bacterial vaginosis is unknown, sexual transmission has been implicated, since bacterial vaginosis is rarely found in sexually inexperienced persons (Hump and Buesching, 1988) Observational studies also suggest a strong association between vaginal douching and

bacterial vaginosis. Proponents of the douching hypothesis propose that douching causes disequilibrium in vaginal microflora or induces inflammation through physical or chemical irritation, which predisposes women to bacterial vaginosis. While most commercial douche products consist primarily of fragrance, acetic acid, and water, some also contain surfactants, such as oxtoxynol-9 or cetyl pyridinium chloride (Pavlova and Tao, 2000). Surfactant detergents can disrupt lipid membranes and thus have antimicrobial and viricidal activities. Additionally, these detergents may wash away antibacterial agents or disturb cell membranes, causing irritation to mucosal surfaces, which in turn can increase susceptibility to genital tract infection (Cone, Hoen, Wong, Abusuwa, Anderson and Moench, 2006).

II Pelvic Inflammatory Disease

Pelvic Inflammatory Disease often times known as (PID) is a polymicrobial infection primarily initiated by ascending infection to the upper reproductive tract by *Neissera gonorrhoeae*, *Chlamydia trachomatis*, or anaerobic and/or facultative bacteria common with BV, such as *Gardnerella vaginalis*, *Ureaplasma urealyticum*, *Mobiluncus* species and *Prevotella* species (Soper Brockwell and Dalton, 1994; Jossens, Schuchter and Sweet, 1994; Pletcher and Slap, 1998). The severity of Pelvic Inflammatory Diseases in association with vaginal douching was made evident in the physical pressure of douching which can facilitate ascension of pathogens (Ness and Brooks-Nelson, 2000) into the upper reproductive tract. The accession of these pathogens can result in infection, inflammation, scarring of the fallopian tubes, ovaries, and/or the uterine lining can result in tubal infertility, tuboovarian abscess, endometritis, chronic pelvic pain, recurrent pelvic inflammatory disease, and ectopic pregnancy.

According to Ivey (1997), about 70% of the women diagnosed with pelvic inflammatory disease in the United State were under 25years. He further revealed the risk factors contributing to the prevalence of pelvic inflammatory disease which include being exposed to sexually transmitted diseases or having a history of pelvic inflammatory disease, use of intrauterine device, failure to use contraception, multiple sexual partners or early sexual initiation. Some of these characteristics were found to be prevalent among women who douche with vaginal douching been associated with pelvic inflammatory disease in earlier studies (Zhang, Thomas and Leybovich, 1997; Forrest, Washington and Daling, 1989; Neumann and DeCherney, 1976). The weight of this evidence suggests a causal association of douching and pelvic inflammatory disease. Hence, douching may be a potential increase the risk of pelvic inflammatory disease by promoting the ascension of

lower genital tract infections to the upper genital tract by changing the vaginal environment to increase susceptibility to reproductive tract infections that precede pelvic inflammatory disease or by introducing nonpathogenic vaginal bacteria into the typically sterile upper genital tract (Ness a and Brooks-Nelson, 2000).

III. Reduced fertility, Infertility and Ectopic pregnancy

An Ectopic pregnancy or "Eccysis" is a complication of pregnancy in which the embryo implants outside the uterine cavity (Page, Villec and Villec, 1976).Carr and Evans (2000) corroborated this statement, describing ectopic pregnancy as the implantation of fertilized eggs outside the uterine cavity. In addition, Page and his colleagues further stated that this condition is a life threatening internal haemorrhage complication that is dangerous to the life of the woman.

Most ectopic pregnancies occur in the fallopian tube (also called tubal pregnancies), which can also occur in the cervix, ovaries and abdomen. There are multiple factors that can independently increase the likelihood of a woman to have an ectopic pregnancy. Factors vary from Pelvic Inflammatory, previous occurrence of ectopic pregnancy, smoking, and vaginal douching which has an odds ratio of 1.1-3.1 (Pisarska, Carson and Buster, 1998) have all been discovered to be associated with ectopic pregnancy. Previous study by Daling, Weiss and Schwartz, (1991), revealed that there was a small increase in risk of tubal pregnancy among women who douched more than two times per year in the past year (RR = 1.3, 95 percent CI: 0.9, 1.8). This risk was found to increase further if, in addition to douching more than two times per year, the women also had more than one sexual partner during their lifetime (RR = 1.6, 95 percent CI: 1.1, 2.3).

A previous study by Kendrick, Atrash and Strauss, (1997) reported that ectopic pregnancy risk among African-American women correlated with the number of years of douching at least once per month. In addition, it was also observed that any douching carried some risk and that different douching strategies were associated with different levels of risk.

In a case-control study that controlled for chlamydial exposure, Chow, Yonekuru and Richwald, (1990) found that current douching was an independent risk factor for ectopic pregnancy. In a different study, Chow, Daling and Weiss, (1985) reported that the risk of tubal ectopic pregnancy for women who douched at least weekly was twice that of women who never douched.

In a meta-analysis, Zhang, Thomas and Leybovich, (1997) found that frequent douching increased risk of ectopic pregnancy by 76 percent while a meta-analysis of case-control and cohort studies done between 1978 and 1994 by Ankum, Mol and Van der Veen, (1996) revealed that only a slightly increased risk for ectopic pregnancy due to douching.

IV. Increased risk for HIV and other STIs.

Vaginal douching creates an imbalance in the vaginal microflora, which is thought to increase susceptibility to sexually transmitted pathogens. In the healthy vagina when women do not douche. lactobacilli inhibit other endogenous bacteria associated with bacteria vagnosis and produce bacteriocins, hydrogen peroxide, and lactic acid, all of which lower the vaginal pH to a level that inhibits the growth of anaerobic microorganisms. Low vaginal pH may inhibit CD4 lymphocyte activation and therefore decrease HIV target cells in the vagina. Vaginal douching is associated with increased HIV transmission and is an independent risk factor for HIV acquisition (McClelland. Lavreys. Hassan, Mandaliya, NdinyaAchola and Bacten, 2006) hence, vaginal ouching increases risk for bacterial vaginosis, which also increases the risk of acquiring other STIs such as gonorrhea, trichomoniasis, and herpes simplex virus type 2 (Martin et al., 1999). Surfactant detergents found in douches can disrupt cell membranes, causing irritation to mucosal surfaces that can also increase susceptibility to genital tract infections (Cone, et al., 2006).

In Kenya, in 657 HIV-1–seronegative sex workers (96% practiced douching), absence of vaginal lactobacilli was associated with a twofold increased risk of acquiring HIV-1 infection, and women were 1.7 times more likely to acquire gonorrhea when controlling for other risk factors in separate multivariate models. Presence of abnormal vaginal flora was associated with almost two times the risk of both HIV-1 acquisition and *Trichomonas* infection (Fonck et al., 2001). In a 10-year prospective cohort study of 1270 Kenyan sex workers, women who douched with water were 2.63 times more likely to acquire HIV-1 when compared with women who did not douche. Women who douched with soap were at even higher risk for acquiring HIV (McClelland et al., 2006) Among 2897 women participating in a gynecologic screening study in Cape Town. South Africa, women who douched were 1.74 times more likely to have HIV than women not douching (Myer, Kuhn, Stein, Wright and Denny, 2005).

Perceptions and practice relating to vaginal douching

Vaginal health is perceived as a state that must be attained and maintained through proactive hygiene measures, such as washing, douching or shaving which can purify the vagina not only of its inherent dirt but also of seminal residue, menstrual blood, sweat and bacteria which 'contaminate' it (Mickes, Baquero, Anderson and Karasz, 2009). Adolescents douche to feel good and fresh, to rid of odour and blood, to please a partner (Oh, Merchant, Brown , 2002). Existing research also suggests that women may douche for various reasons, including treatment of vaginal

symptoms (for example, vaginal odor, vulvar itching, vaginal discharge and inter-menstrual bleeding). for general hygiene, cleaning after menstruation, before and after sexual intercourse and as a contraceptive measure (Ness, Hillier, Richter, Soper, Stamm, Mc Gregor, ,Bass, Sweet, Rice 2002; Martino and Vermund, 2002). In the botanicas of the Bronx, women reported used alum, an astringent, for vaginal tightening to enhance a partner's sexual pleasure, to make the vagina "younger," or to hide evidence of infidelity (Anderson, McKee, Yukes, Alvarez and Karasz, 2008).

In a cross-sectional population based sample of 2002 women in Central Pennsylvania, intimate partner violence was significantly associated with douching (Weisman, Grimley, Annang, Hillemeier, Chase and Dyer, 2007). Hence, women who practice douching have being found to indulge in it because of its perceived benefits. In 2000, Crosby and his collegues described one of the reasons women douche as a desire to feel clean and fresh, prevention or treatment of infection and less commonly to prevent pregnancy as described by Oh, Funkhouser, Simpson, Brown and Merchant (2003).

Other reasons for douching include: Menstrual hygiene and Male's perception towards vaginal douching

Menstrual Hygiene

Menstruation, the periodic vaginal bleeding that occurs with the shedding of the uterine mucosa is one of the signs of puberty, and occurs one or two years following appearance of secondary sexual characteristics (Oyebola, 2002). Once established, every mature female menstruates on the average 3-5 days (minimum 2 days, maximum 7 days) each month until menopause (William and Ganong, 2003). A woman's period may not be the same every month and it may not be the same as that of other women. Periods can be light, moderate or heavy and the length of the period also varies (The National Women's Health Information Center, 2014).

If poorly managed, menstrual period may be accompanied by discomfort, reproductive tract infection, smelling and embarrassment among others (Dasgupta and Sarkar, 2008). Menstrual hygiene deals with the special health care needs and requirements of women during monthly menstruation or menstrual cycle. These areas of special concern include choice of the best "period protection" or feminine hygiene products; how often and when to change the feminine hygiene products, bathing care of the vulva and vagina as well as the supposed benefits of vaginal douching at the end of each menstrual period (Dasgupta and Sarkar, 2008).

Although adolescence is a healthy period of life, many adolescents are often less informed, less experienced, and less comfortable accessing reproductive health information and services than adults (WHO/UNFPA/UNICEF, 1999). In many parts of the developing countries, a culture of silence surrounds the topic of menstruation and related issues (Suneela, Nandini and Ragini, 2001;Olayinka and Akinyinka, 2004) as a result, many young girls lack appropriate and sufficient information regarding menstrual hygiene. This may result in incorrect and unhealthy behaviour during their menstrual period including the misconception of douching to remove menstrual blood. In addition, many mothers lack correct information and skills to communicate about menstrual hygiene which they pass on to their children, leading to false attitudes, beliefs and practices in this regard (WHO/UNFPA/UNICEF, 1999).

Male's perception towards vaginal douching

According to Mckee, Baquero, Anderson and Karasz (2009), all men in their sample uniformly described a healthy vagina as free of discharge or at least free of 'abnormal' discharge and without a 'strong' or 'repulsive' odour. They further indicated that douching is a form of cleanliness practice that is essential to maintain vaginal health. The men's narratives suggested that the vagina is an inherently dirty part of the body being a repository for sperm and menstrual blood and as an important source of contamination and odour. Hence, douching was viewed as a good hygienic practice necessary for sexually active women to remove sperm or menstrual blood and to eliminate the foul odour that a man's semen can produce.

A research done in a Botanica- shops that sell religious or spiritual items and medicinal plants by Anderson, McKee, Yukes, Alvarez and Karasz (2008), with a similar study conducted among the Latina women carried out by McKee and his coworkers (2008) in New York City found parallels in the strong motivation to feel clean and the belief that douching promotes vaginal health. They also highlighted that douching may perform multiple reproductive sexual and romantic functions including the enhancement of male sexual pleasure by vaginal 'tightening.' The respondents from Mckee, Baquero, Anderson and Karasz (2009) uniformly described a healthy vagina as free of discharge or at least free of 'abnormal' discharge, and without a 'strong' or 'repulsive' odour. Men's narratives in their study suggested that the vagina is viewed as an inherently dirty part of the body for several reasons. First, the vagina is a repository for sperm and menstrual blood, which are viewed as important sources of contamination and odour.

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Prevalence of vaginal douching

In 1995, the National Survey of Family Growth (NSFG) revealed that regular douching was reported by 15% of adolescents aged 15 to 19years and by 28% of those aged 20 to 24 years (Abma, et al., 1997). Then in 2002 the NSFG showed that approximately one third (32.2%) of women in the United States had douched at all in the past 12 months before the interview (Chandra, Martinez, Mosher, Abma and Jones, 2005). The behavior is practiced by adolescent, young adult, and adult women (Blythe, Fortenberry and Orr, 2003; Chandra et al., 2005; Cottrell and Close, 2008; Foch, McDaniel and Chacko, 2001; Oh, Merchant and Brown, 2002; Martino et al., 2001). Findings from the 2002 NSFG showed that 15.7% of women ages 15 to 19 had douched in the past 12 months (Chandra et al., 2005). Among women ages 20 to 24, 25.7% had douched in the past 12 months. Other studies that did not use national samples have found douching rates of up to nearly 80% among adolescent and young adult women (often with samples drawn from high-risk populations) (Blythe et al., 2003; Cottrell & Close, 2008; Oh et al., 2002). Results of the 2002 NSFG suggest that as a woman's age increases, so does her likelihood of having douched: 34.1% of 25- to 29-year-old women, 35.2% of 30- to 34-year-old women, 35.7% of 35- to 39-year-old women, and 44.1% of 40- to 44-year-old women had douched in the past 12 months (Chandra et al., 2005).

In Zimbabwe, 87% of the clinic attendees (Runganga, Pitts and McMaster, 1992) reported this habit as 30% of women in a study in the Central African Republic reported the use of vaginal agents for the treatment of vaginal discharge (Gresenguet, Kreiss and Chapko, 1997). Some African countries such as Cote d'Ivoire, douching among pregnant women was a nearly universal practice with a prevalence of 98% (La Ruche, Messou, and Ali-Napo, 1999).

Factors influencing vaginal douching practices

Factors that promote vaginal douching practice

Cazmarian reported in 2001 that women utilize such practice under the influence of their friends and mothers. A comparative study done among the black and white women attending a University in the Southern United State by Funkhouser, Tamcke, Hayes, & Vermund (2002) argued that the common sources of encouragement to douche were mothers, girlfriends among the black women and encouragement from the media advertising, predominately television was common among the white women. In deciding to douche, women may also respond to cues from their partners about the health, social and even moral significance of cleanliness and the desirability of women who are perceived to take good care of themselves.

In cultures where women are socialized to please men and defer to male authority, particularly in sexual interactions, women sometimes engage in high-risk sexual behaviour such as vaginal douching, which they believe makes sexual intercourse more pleasurable for their male partners. Though there are limited data available on the role of male partners in women's decision to douche, but the few ones reported that some women may douche because they want to be more attractive to their partners (Oh, Funkhouser, Simpson, Brown and Merchant, 2003) while some women believe that vaginal odour and wetness are repellent to men (Karasz and Anderson 2003).

Existing literature has demonstrated that cultural and religious beliefs play a significant role in vaginal douching (Braunstein and De Wijgert, 2003). VD is associated with sociocultural values derived from beliefs about sexuality, personal hygiene, health and disease (Braunstein and Van de Wijgert, 2003; Vermund, Sarr and Murphy, 2001). These cultural elements and religious belief makes women to consider their bodies dirty after sexual intercourse and menstruation thus playing a role in the practice of vaginal douching (Vermund et al., 2001).

According to Islam, women must have an ablution after sexual intercourse and menstruation. It is written in the holy book of Islam, the Qur'an, that one should take a bath and get cleansed after sexual intercourse (University of Southern California, Al MAEDA, 2006). Therefore, the women in Islamic countries believe that they are dirty, especially after sexual intercourse and during menstruation (Guler, 1987). Ablution means to wash the body thoroughly. It has been noted that first the genital organs are washed and then the whole body is washed thoroughly (http://www.usc.edu/dept/MSA/quran/005.q.mt.html)

The most common sources of discouragement from douching are the healthcare providers (Funkhouser, Hayes and Vermund, 2002)

Substances used for vaginal douching

Vaginal douching substances can either be commercially prepared, Homemade or a combination of both homemade and commercially prepared substances.

Commercial Preparation

Commercial douches are chemically formulated substances to meet the need of the user often times known as the non-prescription douching products and are found in various pharmacy stores. These Commercial preparations vary substantially in their chemical constituents and concentrations (Merchant, Oh and Klemman, 1994). There are three major lines of douche products, which include the Betadine products (Purdue Frederick Company, Norwalk, CT), non

medicated, disposable douche preparations such as summer's eve (Personal Laboratories/Fleet, Lynchburg VA) and Massengill (SmithKline Beecham, Philadelphia, PA). Others include Vagisil, Monistat and Miconazole 7.These product's usually contain ingredients such as Lysol, octoxynol-9, cetylpyrimdine chloride, Povidone-iodine, sodium benzoate, sodium citrate, sodium bicarbonate (Physicians' desk reference for nonprescription drugs , 1998). These Commercial preparations have been found to be used as often as or more often than home preparations in the United States (Merchant, Oh and Klerman, 1999).

Homemade douches

Homemade douches are the douching products that can be prepared at home by the consumer. Combined vinegar and water is the most commonly used home preparation, followed by water alone (Merchant, Oh and Klerman, 1999).

Vaginal douching can be done using different amounts of force and different methods in different circumstances. In Nigeria, female sex workers (FSW) use locally available vaginal cleansing agents for douching in an attempt to prevent STI, HIV and pregnancy. The vaginal cleansing agents used by these women is often times a combination of homemade and commercial douches which include ordinary water and soap, saline, carbonated beverages, alum, local herbs, toothpaste, antiseptics and citrus juices (Imade, Sagay, Onwuliri, Egah, Potts and Short, 2005). Among all the listed substances used in douching by the FSW, citrus juice especially lemon and lime juice accounts for the mostly widely used douching agents. They reported that 81% of the 200 FSW interviewed in Jos, Nigeria used lemon or limejuice for douching in the belief that it protected them from STI and pregnancy.

The report from the study among the FSW in Jos was supported by a similar study conducted in Borno State by Mairiga, Kullima and Kawuwa (2010), indicating that lime juice is a common vaginal cleasing agent among this group of people. The use of lime juice to clean up the vagina was discovered to be a common practice among the female sex workers in Borno State Nigeria. These study which was conducted by Mairiga, Kullima and Kawuwa (2010), revealed that 62% of the respondents douched which correlates with an earlier report of 72% among female sex workers in Nairobi, Kenya, which is a similar African setting (Fonck, et al., 2001) and much higher in the USA (37%) among females in the reproductive age (Arol, Mosher and Cates, 1992).

Frequency and timing of Douching

Timing of douching may be an important factor for sequelae such as the temporal use of douching in relation to sexual activity and menstrual cycle (Rosenberg and Phillips, 1992;Baird, Weinberg, and Voigt, 1996; Joesoef, Sumampouw and Linnan, 1996; Merchant, Oh and Klerman, 1999). After menstruation, the cervical os is small with a plug of thick, turbid, tenacious mucus, (Zhang, Thomas and Leybovich, 1997). Mucus helps prevent pathogens from ascending to the uterus. At ovulation, the levels of circulating estrogens increase, the os opens, cervical mucus becomes clearer, less tenacious and more profuse. The cervical os closes, and the mucus thickens 1 or 2 days after ovulation. Therefore, the risk of ascending infection from douching may be greatest around the time of ovulation because the cervical os is gaping and the mucus is thinner allowing pathogens (and sperm) to ascend above the cervix (Zhang, Thomas, and Leybovich, 1997).

It is well documented that the most common reason for douching is for personal hygiene, however, there is very limited information about when women commonly douche (Martino, Youngpairoj and Vermund, 2004).Some studies suggest that it is common for women to douche after sexual intercourse and following menstruation (Foch, McDaniel and Chacko, 2000, Funkhouser, Hayes and Vermund, 2002)

Studies among sexually active teenages attending a family clinic and among female college students showed that the age of first douche was significantly associated or correlated with the age of first intercourse. Female college students were likely to douche during or after menstruation with a 76% record out of the total respondents for the study (Chacko, McGill, Johnson, Smith and Nenney, 1989; Foch, McDaniel and Chacko, 2000; Funkhouser, Hayes and Vermund, 2002). In addition, Simpson, Merchant, Grimley and Oh (2004) reported that many women preferred the vaginal douching time to be after menstruation, before and after sexual intercourse and during the vaginal symptoms and these women performed the practice in order to feel clean and refreshed, during ablution (Arslantas, Karabagli and Koc, 2010).

In 2006, Kukulu put forth the rate of vaginal douching practice after sexual intercourse to be 92.9%, Caliskan, Subasi and Sarisen's study in 2006 was 64.9% while Ege, 2007 reported 35.4% of the respondents douched after sexual intercourse. Among women who douche monthly or more often, alterations in vaginal pH and flora increase the risk of vaginal infections, particularly bacterial vaginosis (Zhang, 1997; Martino et al, 2002; Ness et al, 2002; Lowe, 2006).

Conceptual Framework

A conceptual framework presents a systematic way of understanding events and situation. It is a set of concepts, definitions and proportions that explains or predicts these events or situations by illustrating the relationships between variables (National cancer Institute, 2005). The purpose of theory in research is to help the researcher to be able to explain the dynamics of health behaviours including processes of changing them and the influences of many forces that affect health behaviours such as the social and the physical environments. Theory and frameworks also provide planners the most suitable information such as target audiences, methods for fostering change and outcomes for evaluation before planning and implementing health promotion interventions (National Cancer Institute, 2005). The PRECEDE-PROCEED model used in this study to guide in the design of this study and to capture all the variables or elements involved in the study.

PRECEDE

The word "PRECEDE" is an acronym for "Predisposing, Reinforcing and Enabling factors, and Causes in Educational Diagnosis and Evaluation".

This model is a framework for the process of systematic development and evaluation of health education programs. An underlying premise of this model is that health education is dependent on voluntary cooperation and participation of the client in a process which allows personal determination of behavioral practices, and that the degree of change in knowledge and health practice is directly related to the degree of active participation of the client. It has served as a conceptual framework in health education, planning aimed at diagnosing the health problems of a community, understanding the factors that influence the people's behaviour and developing intervention to promote healthy behaviour (Green and Kreuter, 1991). It emphasizes the importance of careful preparation before any intervention program is launched, and comprises a diagnostic approach for deciding what type of intervention is likely to be useful in altering behavior, and then for assessing its likely impact. Premises include: health education requires voluntary cooperation of the client, health behavior is determined personally; the more actively the client participates the more they will learn. The PRECEDE model assumes that the many factors that influence health behaviors should be identified in order to plan an appropriate educational intervention (Green, 1984).

This model is multidimensional, founded in the social/behavioral sciences, epidemiology, administration and education. As such, it recognizes that health and health behaviors have multiple causations which must be evaluated in order to assure appropriate intervention. The

comprehensive nature of PRECEDE allows for application in a variety of settings such as school health education, patient education, community health education, and direct patient care settings.

PROCEED was added to the model in the late 1980s based on L. Green's experience with Marshall Kreuter in various positions with the federal government and the Kaiser Family Foundation. PROCEED was added to the framework in recognition of the emergence of and need for health promotion interventions that go beyond traditional educational approaches to changing unhealthy behaviors. The administrative diagnosis is the final planning steps to "precede" implementation. From there "proceed" to promote the plan or policy, regulate the environment, and organize the resources and services, as required by the plan or policy. The components of PROCEED takes the practitioner beyond educational interventions to the political, managerial, and economic actions necessary to make social systems environments more conducive to healthful lifestyles and a more complete state of physical, mental and social well-being for all. . PROCEED is an acronym for Policy, Regulatory, Organizational Constructs in Educational and Environmental Development. The purpose of the PRECEDE/PROCEED model is to direct initial attention to outcomes rather than inputs. This forces planners to begin the planning from the outcome point of view. In other words, you as a program planner begin with the desired outcome and work backwards to determine what causes it, what precedes the outcome. Intervention is targeted at the preceding factors that result in the outcome. The planning process outline in the model rests on two principles:

- The principle of participation, which states that success in achieving change is enhanced by the active participation of members of the target audience in defining their own high-priority problems and goals and in developing and implementing solutions.
- The important role of the environmental factors as determinants of health and health behavior such as media, industry, politics, and social inequities

The PRECEDE/PROCEED framework has been designed to avoid the philosophical trap that has caught previous efforts to codify the practices of health education. The overriding principle in this approach to health education is that health behavior must be voluntary behavior. Health means different things to different people, serves different purposes for different people, and is more or less important to different people.

Description of the model

PRECEDE - the first 5 phases

Phase 1 - Social Diagnosis: The focus of this phase is to identify and evaluate the social problems which impact the quality of life of a target population. This requires program planners to gain an understanding of the social problems which affects the quality of life of the patient, consumer, student, or community, as those populations see those problems. This followed by the establishment of a link between these problems and specific health problems which may become the focus of health education. The link is essential in life and, in turn, how the quality of life affects social problems. Methods used for social diagnosis may be one or more of the following: Community Forums, Nominal Groups, Focus Groups, Surveys, Interviews, Central location intercept

Phase 2 - Epidemiological Diagnosis: This phase helps to determine health issues associated with the quality of life. It helps identify behavioral and environmental factors related to the quality of life issues. The focus of this phase is to identify specific health problem and non health factors which are associated with a poor quality of life.

Describing these health problems can:

1) help establish relationships between health problems, other health conditions, and the quality of life.

2) lead to the setting of priorities which will guide the focus of program development and resource utilization; and

3) make possible the delineation of responsibilities between involved professionals and organizations and agencies. These priorities are defined as program objectives which define the target population (WHO), the desired outcome (WHAT), and HOW MUCH benefit the target population should benefit, and by WHEN that benefit should occur. Examples of Epidemiological data includes; vital statistics, years of potential life loss, disability, prevalence, morbidity, incidences and mortality. From phase 1 and 2 program objectives are created - that is the goal or goals you hope to achieve as a result of implementing this program

Phase 3 - Behavioral and Environmental Diagnosis: This phase focuses on the systematic identification of health practices and other factors which seem to be linked to health problems identified in Phase 2. This includes non-behavioral causes (personal and environmental factors) that also contribute to health problems, but are not controlled by behavior. These could include genetic

predisposition, age, gender, existing disease, climate, and workplace, the adequacy of health care facilities, etc. Also assessed are the behaviors which cause health problems in the target population. Another important component of this phase is the determination of the importance and relative changeability of each behavioral cause. It is critical that a behavioral diagnosis is completed for each health problem identified on Phase 2. This will allow all the planners to choose target behaviors which will become the focus of specific educational interventions. The Behavioral Matrix is used to identify targets where the most effective intervention measures can be applied. More important Less important More modifiable High priority for intervention Low priority, unless political considerations dictate Less modifiable Innovations required to develop intervention No program required.

Behavioural Diagnosis is the analysis of behavioural links to the goals or problems that are identified in the epidemiological or social diagnosis while environmental diagnosis is a parallel analysis of factors in the social and physical environment other than specific actions that could be linked to behaviors.

Phase 4 - Educational Diagnosis and Organizational Diagnosis

This phase assesses the causes of health behaviors which were identified in Phase 3. Three kinds of causes are identified - predisposing factors, enabling factors, and reinforcing factors. The critical element of this phase is the selection of the factors which if modified, will be most likely to result in behavior change. This selection process includes identifying and sorting (positive and negative) these factors in appropriate category, prioritizing factors among categories, and prioritizing with categories. Prioritization of factors is based on relative importance and changeability. Learning objectives are then developed which focus on these selected factors. Pinpoints the factors that must be changed to initiate and maintain behavioral change. It is during this phase that specific intervention objectives are created and the intervention itself will be implemented. Educational and organizational diagnosis looks at the specifics that hinder or promote behaviors related to the health issue.

Predisposing factors - any characteristics of a person or population that motivates behaviour prior to the occurrence of that behavior knowledge, beliefs, values, attitudes.

Enabling - characteristic of the environment that facilitate action and any skill or resource required to attain specific behavior such as accessibility, availability, skills, laws (local, state, federal) etc.

Reinforces - rewards or punishments following or anticipated as a consequence of a behavior. They serve to strengthen the motivation for behavior. Reinforcing factors includes family, peers, religious leaders, teacher etc.

Phase 5 - Administrative & Policy Diagnosis

This phase focuses on the administrative and organizational concerns which must be addresses prior to program implementation. This includes the assessment of resources, budget development and allocation, development of an implementation timetable, organization or personnel within programs, and coordination of the program with all other departments, and institutional organizations and the community.

Administrative Diagnosis - the analysis of policies, resources and circumstances prevailing organizational situations that could hinder or facilitate the development of the health program.

Policy Diagnosis - to assess the compatibility of program goals and objectives with those of the organization and its administration; does it fit into the mission statements, rules and regulations.

PROCEED - the second 4 phases

Phase 6 - Implementation of the program

Phase 7 - Process Evaluation is used to evaluate the process by which the program is being implemented

Phase 8 - Impact Evaluation measures the program effectiveness in terms of intermediate objectives and changes in predisposing, enabling, and reinforcing factors.

Phase 9 – Outcome Evaluation measures change in terms of overall objectives and changes in health and social benefits or the quality of life. It takes a very long time to get results and it may take years before an actual change in the quality of life is seen.

PRECEDE

Phase1
Social diagnosis

Phase 2
Epidemiological diagnosis

Phase 3
Behavioural & environmental

Phase 4
Educational & organizational diagnosis

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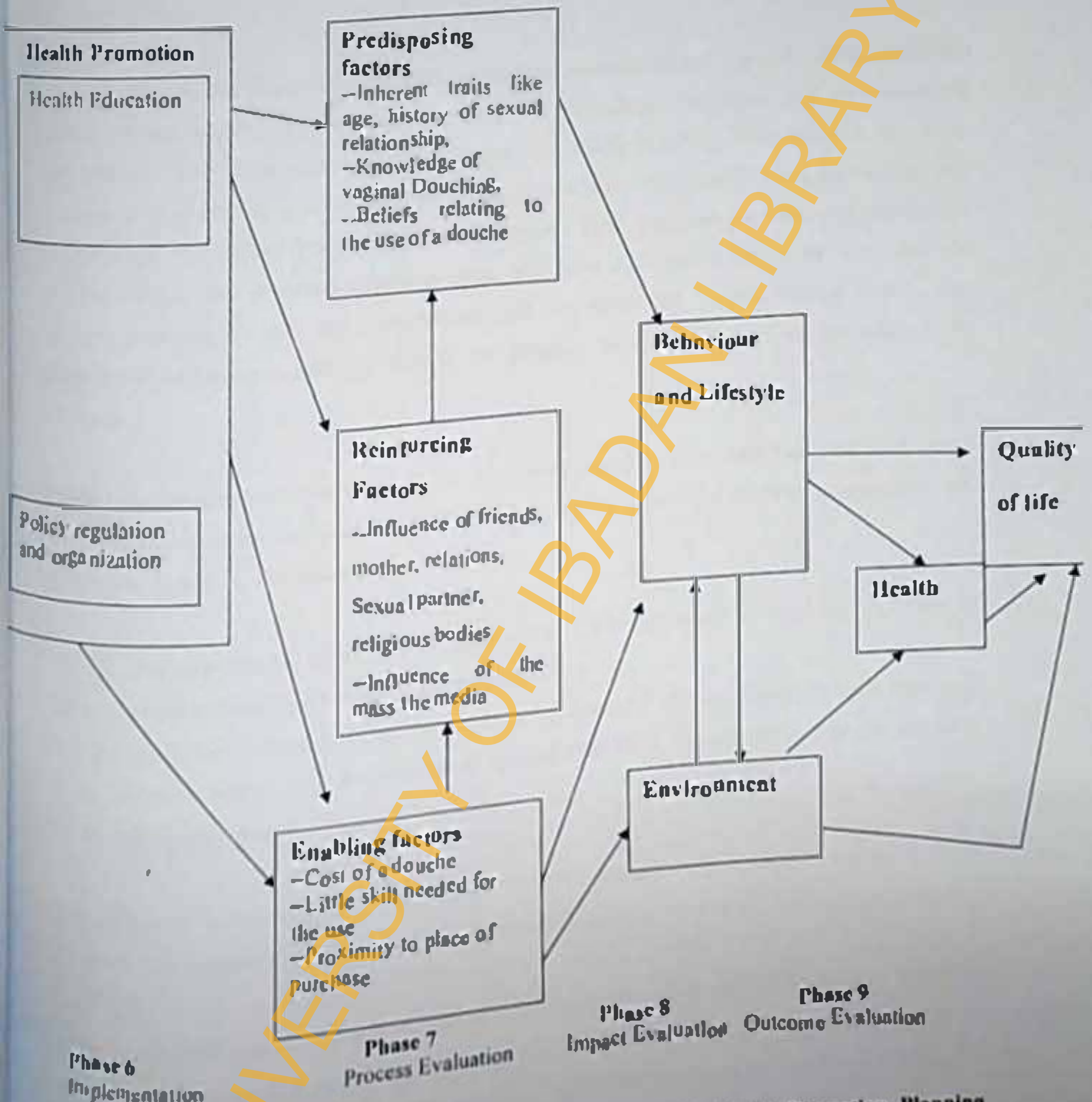

Phase 9
Outcome Evaluation

Phase 8
Impact Evaluation

Phase 7
Process Evaluation

Phase 6
Implementation

PROCEED →

Fig 2:1 Generic Presentation of the PRECEDE- PROCEED Model for Health Promotion, Planning and Evaluation (Green and Kreuter, 2005)

In applying this model to vaginal douching practice,

Phase 1. This is the social diagnosis. In this phase focus group discussion was done to collect information from the female undergraduates. so also was the use of a semi-structured questionnaire.

Phase 2. The second phase provides a more objective determination of specific health problems linked to the quality of life issues in phase 1, including behavioral and environmental determinants. This is the epidemiological diagnosis, typically involving vital statistics, disability surveys or other morbidity data. After all the factors are identified, priorities are set among them to guide the intervention program. Responsibilities are then proposed for who will tackle each issue identified. The priorities inform program objectives that define who does what, the and changes expected in the target population, and by when the benefit should occur. The combination of phases 1 and 2 results in the program objectives, indicating the goals to be achieved.

Phase 3. For adverse health effect of vaginal douching identified,this identifies health behaviors and other factors in the environment that contribute to the problems. whether or not these are modifiable. This is the *behavioral diagnosis*

Phase 4. This considers the causes of the vaginal douching health behavior: what factors which. if changed, would be most likely to affect the behaviors?

Predisposing factors: These facilitate or hinder motivation for change: Inherent traits like age, history of sexual relationship, Knowledge of vaginal Douching. Beliefs relating to the use of a douche, values, perceptions relating to douching

Enabling factors, which facilitate or oppose the proposed changes such as Cost of a douche, Little skill needed for the use, Proximity to place of purchase

Reinforcing factors include rewards or losses resulting from each health behavior and that may strengthen (or discourage) motivation to alter the behavior: family influences, Influence of friends, mother, relations, Sexual partner, religious bodies, Influence of the mass the media. For instance, a lady may be forced to douche in order to please her sexual partner.

Priorities again reflect importance and modifiability. This forms the *educational and organizational diagnosis*, from which learning objectives are identified.

Phase 5. This considers administrative and organizational issues to be addressed before an educational program for vaginal douching is implemented. What resources are available? What personnel is available, and how many will be required? What budget is required and available? What timetable is suitable? What other departments and agencies need to be involved? This represents the *administrative and policy diagnosis* of the situation. The administrative diagnosis considers the policies, resources and organizational situation that could facilitate or hinder implementation of the vaginal douching cessation/ prevention program. The policy diagnosis covers the relationship of the proposed program to the rest of the organization, and potential conflicts between them.

Phase 6. Only in the *implementation* stage is the program actually designed: usually a combination of interventions.

Phase 7: The *Evaluation stage* requires a process evaluation, covering the stages of program implementation; an impact evaluation which measures its effect on predisposing, enabling and reinforcing factors, and an outcome evaluation that considers impact on health behaviors and overall quality of life.

CHAPTER THREE

METHODOLOGY

This section deals with the research design, study population, sampling technique, methods and instruments for data collection, procedure for data collection and data analysis.

Study Design and Scope

This study was descriptive cross sectional and was designed to assess the level of awareness and level of knowledge of the health effects of douching among female undergraduates of University of Ibadan, to explore the perceptions relating to douching among the female undergraduates of the University of Ibadan, to determine the prevalence of douching among female undergraduates of the University of Ibadan and to identify the factors influencing douching practice among female undergraduates of University of Ibadan.

Independent and Dependent Variables

Independent variables. Independent variables are the presumed causal factors, the variables that are been manipulated in a study. In this study, Independent variables are factors which cause an individual to practice vaginal douching such as demographic characteristics, e.g.: Age, Religion, Marital status, Level of study and course of study.

Dependent Variables

Dependent variables. Dependent variables are the presumed effects or consequences of the manipulation of the independent variables. In this study, the dependent variables are female undergraduates' practice of vaginal douching e.g. level of knowledge of vaginal douching and the risk of acquiring genitourinary health effects.

Study Setting

This study was carried out at the University of Ibadan. The University College, Ibadan (UCI) now University of Ibadan (UI), was originally established in 1948 as an external College of the University of London (then it was called the University in 1962 and had a little over 2000 students. The site of the university was leased to the colonial authorities by Ibadan Chiefs for 999years (University of Ibadan, 2002) At first, it occupied the old site previously used by the 36th Military General Hospital about eight kilometers away from the 'new' or permanent site.

With equipment transferred from Yaba Higher College, the 104 foundation students (including 49 students in teacher training and survey courses) began their courses at Ibadan, on 18 January, 1948; the formal opening took place on 25th March, 1948. Located in Ibadan North Local Government Area, the new site covered over 1,032 hectares of land generously leased to the colonial authorities by the chiefs and people of Ibadan for 999 years (University of Ibadan, 2002). For the foundation medical students, the facilities provided in 1948, by the General Hospital at Adeoyo and Jericho Hospital, for which the Faculty of Medicine was responsible, were inadequate. Consequently, medical students of the earlier years went abroad for clinical training. To provide more satisfactory clinical facilities at Ibadan, the Nigerian government made available funds for the building of the 500-bed University Teaching Hospital, completed in 1957. Thereafter medical students were fully trained in Ibadan. The first batch graduated in 1960.

With the expansion of facilities at Ibadan, the number of students offered admission increased. In the 1958-59 sessions, UCI for the first time had a little over 1,000 students; in 1963-64, the figure exceeded 2,000; and tipped the 3,000 mark in 1968-69. The figure for 1972-73 was 4,100, and for 1974-75 and 1975-76, 5,639 and 7,375 respectively. Larger admissions over the years and limited funds for providing accommodation gradually threatened the concept of a residential University at Ibadan. This gave rise to building hostels for the students. Presently, there are nine undergraduate halls of residence (Mellanby, Tedder, Kuti, Independence, Nnamdi Azikiwe, Sultan Bello, Alexander Brown, Obafemi Awolowo, Queen Elizabeth II, and Idia Hall) while the latest three halls of residence is being occupied by female undergraduate students and postgraduate halls of residence (Tafawa Balewa and New Postgraduate Hall). The halls have a total optimum capacity of nearly 5,000 students. The University provides accommodation for some of its senior and junior staff. The Abadina complex caters for the residential needs of the bulk of junior staff.

The University College in 1948 had three founding faculties (Arts, Science and Medicine). Today, there are 13 faculties: Arts, Science, Agriculture and Forestry, the Social Sciences, Education, Veterinary Medicine, Technology, Basic Medical Sciences, Pharmacy, Clinical Sciences, Law, Public Health and Dentistry. The academic wings of the University include the Library, the Institute of Child Health, the Computing Centre, the University Press, the Industrial Training Co-ordination Centre, the Institute of Education, the African Regional Centre for Information Science, the Women's Research and Documentation Centre, the Ibarapa Community Health Project and the Behavioural Sciences Research Unit, which gave birth to the present Departments of Psychology and Guidance & Counselling. The Nigerian Institute of Social and

Economic Research (NISER), financed by the Federal Government, maintnins a special link with this University

Study Population

The female undergraduate students of the University of Ibadan constituted the study population. They were students who were officially accommodated at the female halls of residence of University of Ibadan.

Inclusion Criteriu

One of the criteria this study was a study participant must be a female undergraduate student of the University of Ibadan who reside in one of the four halls of residence in the University.

Exclusion Criteria

These inclusion criteria excluded female students who were not accommodated on campus or who were squatting with fellow students on campus and those who were not willing to participate.

Sample Size for the Quantitative Component of the Study

The sample size (n) was determined by using Lwanga and Lemeshow (1991) sample size formula:

$$n = \frac{Z^2 p(1-p)}{d^2}$$

Where n=minimum sample size required

Z= confidence limit of survey at 95% (1.96)

P= Proposition of vaginal douche users taken at = 42.1 % (Funkhouser et al. 2002)

d=absolute deviation from true value (degree of accuracy) = 5%

$$n = \frac{1.96^2 \times 0.421 \times 0.579}{0.05^2} = 374.6 \text{ approximate} = 375$$

The calculated sample size was increased to 413 in order to address any possible case of attrition or incomplete response.

Sampling Technique

A multi stage sampling technique involving four stage was used in selecting the respondents for the study.

Stage 1- Proportionate sampling procedure was used to determine the number of female undergraduates that will be interviewed from each of the 4 halls of residence which accommodate female undergraduates (See Table 3.1).

Stage 2- Proportionate sampling was used to determine the number of students to be interviewed per block (See Table 3.1).

Stage 3- Rooms were selected in each block using systematic sampling procedure (See Table 3.1).

Stage 4- An eligible female student met alone in the selected room was purposively selected for interview. However, where two or more eligible students were met, balloting was used to pick the student that was interviewed. A selected student was interviewed in her room without any other person being present. In a case where respondent's room was not conducive or her other room-mates could not vacate the room, a mutually agreeable venue within the hall was used for the interview. This was done to protect the privacy of respondents and to provide an opportunity for free disclosure of information.

Table 3.1: Distribution of female undergraduate students in halls of residence in University of Ibadan (for 2012/2013 Academic section)

S/N	Halls	Number of students in each hall	Number of female undergraduate students per block		Proportion of respondents to be selected from each hall of residence	Proportion of respondents to be selected from each blocks in various halls
1.	Queen Elizabeth II hall (With 282 rooms)	934	Block A -	44	$\frac{934 \times 413}{3485}$ = 111	5
			Block B -	70		8
			Block C -	90		11
			Block D -	100		12
			Block E -	108		13
			Block F -	42		5
			Block G -	108		13
			Block H -	108		13
			Block I -	250		29
			GR Block -	14		2
2.	Queen Idia hall (With 296 rooms)	1256	Block A -	439	$\frac{1256 \times 413}{3485}$ = 149	52
			Block B -	528		62
			Block C -	208		25
			Flat -	81		10
						10
3.	Obafemi Awolowo hall (With 405 rooms)	1039	Block B -	84	$\frac{1039 \times 413}{3485}$ = 123	13
			Block C -	111		23
			Block D -	198		19
			Block E -	159		23
			Block F -	198		13
			Block G -	100		22
			Block H -	189		
4.	Alexander Brown hall (with 115 rooms)	256	Block A -	98	$\frac{256 \times 413}{3485}$ = 30	11
			Block B -	56		7
			Block C -	56		7
			Block D -	26		3
			Block F -	20		2
	TOTAL	3485				413

*Source- Record kept by hall wardens and hall supervisors

Methods and Instruments for data collection

The data was obtained using both qualitative; Focus Group Discussion (FGD) guide and quantitative (Questionnaire) methods of data collection. The instruments was designed after a thorough review of literature and extracting pertinent variables relating to vaginal douching by female undergraduates of the University of Ibadan. The triangulation of the two methods was adopted to ensure that the weaknesses of one are counter-balanced by the strengths of the other.

Qualitative Method: Focus Group Discussion

The Focus Group Discussion guide consisted of 10 main questions (see Appendix I). The Focus Group Discussion was used as a diagnostic tool to gain a better insight into the perceptions and factors responsible to their douching behaviour.

Quantitative Method: Semistructured Questionnaire

A validated semi-structured questionnaire was used to measure the female undergraduates knowledge, perception and frequency of vaginal douching to elicit responses from the respondents of the study using a self administered questionnaire.

The questionnaire was organized into sections include the socio demographic section (Section A). Section B shall constitute information on the level of awareness of the respondents on Vaginal Douching. section C shall constitute information regarding the prevalence of vaginal douching with sections D and E eliciting information about knowledge and perceptions of the respondents on vaginal douching respectively (see Appendix II).

Validity of the Study

To ensure the validity of the instruments in terms of expected measures, contents strength and accuracy, the draft of the questionnaire was developed based on the objectives of the study. It was designed based on literature review then subjected to review by experienced researchers in the field of public health. Thereafter, the draft questionnaire was subjected to peer review, pretested and modified.

Reliability of the Study

In order to determine the reliability of the instruments, a pre-test was conducted among students of the Polytechnic of Ibadan, Ibadan. The Polytechnic of Ibadan shares similar characteristics

with the University of Ibadan. In addition, both institution has residential facilities for the students and offer the similar social opportunities to their students.

The FGD guide and questionnaire were pre-tested among the female students residing in Olori, Ramat and Olori Annex halls of the Polytechnic of Ibadan. The pretested questionnaires were cleaned. coded and entered into the computer system. The reliability of the questionnaire was determined using the Cronbach Alpha technique of the Statistical Package for Social Sciences (SPSS) to determine the reliability co-efficient of the questionnaire. According to this approach, a result showing correlation coefficient equal to or greater than 0.5 is said to be reliable. The result from the analysis of the data collected during the pre test showed reliability co-efficient of 0.83 that the instrument is very reliable before the main data collection.

Few revisions were made on the instruments before they were finally put to use among the female undergraduates of the University of Ibadan. Revisions included; the substitution of a science oriented word to an English word but still with the retention of its meaning for better understanding of the study participants, as well as skipping mechanism were also included in the questionnaire.

Recruitment of research assistants

Four research assistants were recruited and trained for the study. The training commenced with introduction of the trainer or the principal investigator, followed by the baekground of the study and objectives. The training focused on the objectives and importance of the study, the sampling processes, how to administer the study instruments, how to secure respondents' informed consent and general interviewing skills.

Data collection process

The data collection procedures adopted is described as follow:

Focus Group Discussion

For the Focus Group Discussion, the respondents (who had douched or presently douching as indicated) selected a venue for free discussion. The interview was conducted with note taking and responses were documented with the use of a tape recorder. Prior to the commencement of the discussion, the respondents were provided with full details of the study and an assurance of confidentiality of the disclosed information. Permission to use a tape recorder was sought and verbal consent was obtained from the respondents prior to the commencement of each session.

A total of four FGD sessions were conducted among 32 female undergraduates drawn from the four female halls of residence in University of Ibadan. A letter of introduction from the department and evidence of ethics approval were tendered to hall wardens to obtain permission One FGD session were conducted in each hall of residence. Eight female undergraduate participated in each FGD session. Permission was sought from the hall wardens, hall supervisors and hall executives to allow the use of the common rooms. The doors leading to the rooms used were closed and no student, apart from those that participated in the study was allowed to enter the rooms or venues throughout the period of the FGD.

The FGD sessions were conducted in the evenings between the hours of 5 to 7 p.m. The FGD sessions were conducted between the hours of 5 p.m. to 7 p.m. because it coincided with the time most students return from lectures and settle down in their rooms and also the visiting hours for non residents.

On the average, 40 minutes was used to conduct each FGD session. Each of the FGD was tape recorded and facilitated by a moderator, note-taker and observer. A moderator asked the questions and used the FGD guide to facilitate the harvesting of the different ideas and opinions from the discussants, sought for clarification where necessary and guided the discussions. A note-taker took notes and used a good tape recorder and audio-tapes to record the discussions to prevent loss of important information while the observer noted the reactions and subtle attitudes of the discussants and useful non-verbal cues.

After each FGD session, the discussion on the audiotape was replayed, carefully listened to and transcribed into a notebook. Results from the FGDs were used to modify the questions in the questionnaire.

Semi -structured questionnaire

The quantitative data were collected using the semi-structured questionnaire (see Appendix II) with the help of four trained field assistants who were all females. The questionnaire was self-administered since the research participants could read and write in English language. The questionnaires were administered at the hall of residence in the evenings after lecture period between the hours of 5 p.m. and 7 p.m. for ten days. Every room selected for the data collection was visited and a participant was interviewed in each room. Consent of the participants was sought before the administration of the questionnaire after explaining to them the purpose of the research, the possible risks such as time that would be spent and the benefits of the research.

The questionnaire was collected immediately a respondent was through with it. After a field assistant had collected a questionnaire from a respondent, completeness of the questionnaire was then checked. Attention of a respondent was drawn to cases of omissions or incomplete responses in her questionnaire. In addition, the field assistant instantly checked a completed questionnaire to determine if a respondent was suitable for further Focus Group Discussion. After confirming the suitability of a respondent, availability and willingness to participate in a Focus Group Discussion was then sought.

Data Management and Analysis

The FGDs were transcribed and a report of each FGD was written. These reports were then subjected to thematic analysis. Points of agreement and disagreement among discussants in the various groups were noted and presented. As much as possible, quotations which typified discussants' views were presented (as shown in chapter 4) and integrated with the quantitative findings.

Quantitative data

The questionnaires were collated and edited by the researcher with the help of research assistants. The questionnaires were checked for completeness and a serial number was given to each for easy identification and recall. The responses in each questionnaire were hand-coded facilitated by the use of a coding guide developed by the researcher after a careful review of the responses in all the questionnaires

After the entire questionnaire had been hand-coded, a template was then designed on the SPSS (version 16) for entering of the coded data. Each questionnaire response was entered into the computer using the SPSS software- version 16. The quantitative data were analyzed using descriptive statistics, Chi-square. The results were presented using tables, pie charts and bar graphs in chapter 4.

Ethical Consideration

The research proposal was submitted for review and approval by the Joint University of Ibadan and University College Hospital (UI/UCH) Ethic Review Committee in order to take into consideration the ethical principles guiding the use of human participants in the design and conduct of the study before the commencement of the data collection (see appendix II for the letter of approval). UI/UCH Ethics committee ensured the safety, dignity, rights and well-being of the potential research participants by providing an independent, competent and timely review of both the ethics and science of the study before it was carried out. They monitor the implementation of the study to ensure that the project was carried out ethically through the project supervisor. During the review, the ethics committee ensured that the following ethical principles were taking care of in the research protocol.

Respect for Persons

One of the ways the principle of respects for persons was put into the practice was in the execution of inform consent. Informed consent of the research participants was gotten by giving the participants adequate information concerning the study which included the focus of the study, objectives of the study, study methodology, inconveniences that might be experienced and the potential benefits of the study to society.

During the data collection process, the participants of this study were provided with ample opportunity to consider all options and ask questions related to the study. The participation in the study was made voluntary and the researcher also ensured that the participants understood the given information about the research and obtained their agreement to participant in the study without undue influence or coercion. The participants' consents were document through an informed consent form attached to the instrument used for the study and the volunteers were asked to append their signatures after they have received adequate information about the study and were ready to be part of the study.

Beneficence to participants

Beneficence deals with the responsibility of researchers to maximize benefits and minimize harm and risks to persons who participate in the research. therefore, in this study, the principal

investigator conducted both potential benefits and potential risk that could be involved in the research before its implementation. The research protocol demonstrated the immediate, intermediate and ultimate benef.ts of the proposed investigation to the full understanding and acceptance of both the ethical review boards and the research subjects. The research is of benefit to the society. The findings from this study could be used for appropriate behavioural change intervention about the use of mobile phones while driving which may lead to reduction in the number of crashes relating to distraction. Also, evidence generated from this study could serve as bases for appropriate policies regarding the use of mobile phones while driving in countries where such laws are either weak or nonexistent.

The principle of beneficence was also demonstrated by the qualification of the principal investigator and his supervisor. The qualifications of the supervisor of this study showed and convinced the ethic committee that the researchers are competent and capable to carry out the study and safeguard the welfare of persons who would participate in the study. The study did not in any way put the participants in danger because during the research, there was no collection of invasive materials and the participants were free to decide not to answer a particular question if they were not comfortable with the question.

Justice

In this study, the research participants were never selected because of race, ease of access, or their compromised positions and recruited participants were given equal opportunities to withdraw their consent freely during the study. The study included diverse elements of the population. This was done through the application of scientific sampling technique in the identification and selection of research participants. The participation in the research granted the participants the basic rights to the benefits of the study. This study is responsive to the needs who participated in the study and the recommendation given from the study outputs relates well to the study community.

Confidentiality

Confidentiality of each participant was maximally maintained during and after the collection of his or her data or information. During the study, the researcher was saddled with the responsibility of preserving the confidentiality of information received and anonymity of respondents. This was employed in the design and construction of the research instrument, as a result, the instrument

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Confidentiality of each participant was maximally maintained during and after the collection of his or her data or information. During the study, the researcher was saddled with the responsibility of preserving the confidentiality of information received and anonymity of respondents. This was employed in the design and construction of the research instrument, as a result, the instrument

lacks any personal identifier such as name of participants or their addresses. This is important to make the information given by each respondent as confidential as possible.

Also, during the data collection, the participants were informed of the procedures necessary to make keep their identity and information confidential. This was done to allay fear and anxiety about the information given during the research. The research assistants used for data collection were trustworthy and were known to the principal investigator in their attitude and ability to collect the right information from the participants. Information gathered from the respondent was stored in the computer package for analysis by the principal investigator and access was never granted to unauthorized person.

Limitations of the study

There was dearth of information in the literature on vaginal douching in Nigeria and most especially on this target population. This posed a serious challenge in respect of lessons which could be used to design this study. The problem was ameliorated through the review of literature on studies conducted outside Nigeria, mostly from the developed countries, in spite of their inherent limitations.

Female off-campus students were excluded from the study and so this may have affected the generalization of the results. However, taken into consideration the scientific steps taken to carry out the study, it could be concluded that the results constitute a fair reflection of the phenomenon at the University of Ibadan.

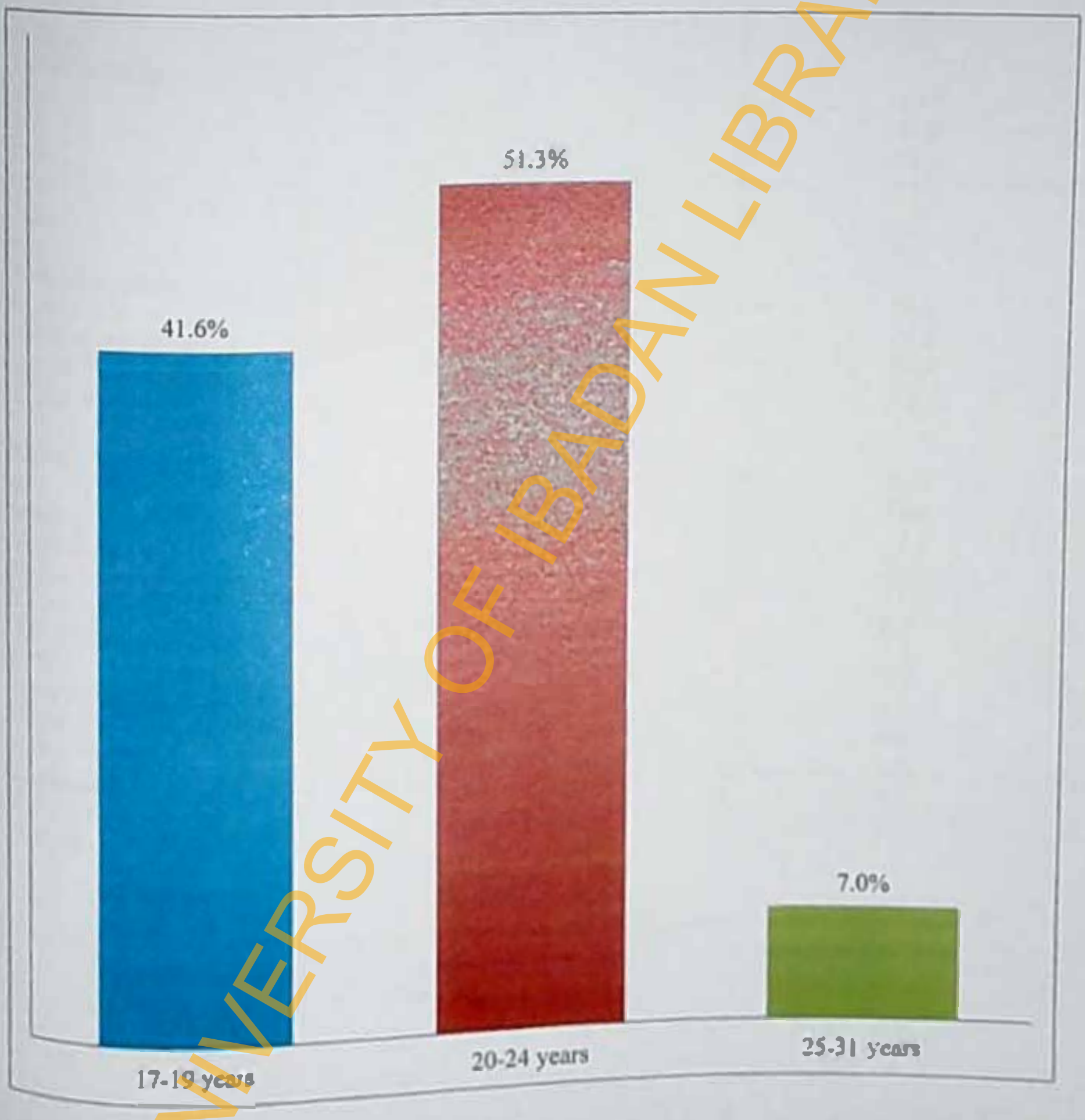
CHAPTER FOUR

RESULTS

4.1 Respondents' Socio-demographic characteristics

The socio demographic characteristics of the respondents are presented in Table 4.1. The ages of respondents ranged from 17 – 31 years with a mean age of 20.45 ± 2.5 years. Most (87.4%) respondents were Christians and majority of the respondents were single (98.5%). Many (37.5%) of them were in 100 level and few (1.7%) were in 600 level. The respondents were proportionately distributed across the four halls of residence for female undergraduates, with highest proportion (36.1%) of them being selected from Queen Idia Hall and the lowest proportion (7.3%) from Alexander Brown Hall. Faculty of Art had the highest proportion (19.4%) of respondents, followed by faculty of Clinical Science and Social Science each (12.3%). Faculty of Dentistry had the fewest respondents (1.2%) (See Table 4.1).

N=413



Mean age= 20.45±2.5years
Min=17, Max=31

Figure 4.1: Respondents age distribution

Table 4.1 Socio-demographic information of the respondents

N=413

Characteristics	Number	%
Religion (n = 413)		
Christianity	361	87.4
Islam	50	12.1
Traditional	1	0.2
Judaism	1	0.2
Level of study		
100	155	37.5
200	103	24.9
300	76	18.4
400	52	12.6
500	20	4.8
600	7	1.7
Hall of residence		
Queen Idia	149	36.1
Obafemi Awolowo	123	29.8
Queen Elizabeth	111	26.9
Alexandra Brown	30	7.3
Faculty		
Art	80	19.4
Science	59	14.3
Clinical sciences	51	12.3
Social sciences	51	12.3
Education	46	11.1
Agriculture and Forestry	33	8.0
Law	32	7.7
Basic medical sciences	21	5.1
Pharmacy	13	3.1
Public Health	10	2.4
Technology	6	1.5
Veterinary medicine	6	1.5
Dentistry	5	1.2

4.2 Respondents' Awareness of Vaginal Douching

Majority of the focus group discussants across the groups stated correctly that vaginal douching is the use of liquid substances on the vagina. Their typical responses include the following:

- *"It is when you insert two fingers in the vagina and wash thoroughly with shower gel".*
- *"As I view it, it makes someone to be fresh, free and feel neat. It makes the vagina very clean and attractive when you want to have sexual intercourse with your boyfriend or husband.*
- *"Vaginal douching is a painful act that involves the introduction of things to wash the vagina. The pain can be likened to inserting penis into the vagina".*
- *"It involves the use of natural things like water and soap and not the use of other things like herbs to wash the vagina.*

The findings from the questionnaire indicates that about two thirds of the respondents (65.1% had heard of the term 'vaginal douching; Internet (21.9%) was the more common source of information of vaginal douching, followed by Friends (16.3%) and Health Professionals (15.9%). Churches/ Mosques (Religious Institutions) were the least (0.8%) sources of information (Fig. 4.2). Very few (4.8%) of the respondents had attended an educational programme before on vaginal douching. Similarly, few (22.0%) of them had heard of substances used for douching by students. Water (15.8%), followed by antiseptic soap and gels (11.1%) and Dettol (10.5%) were mentioned as substances used for douching (Table 4.2).

Awareness of vaginal douching by some selected demographic characteristics (Marital status, age at last birthday, religion and level of study in the university) is presented in Table 4.3. Majority (83.3%) of those who are married have heard of vaginal douching before as compared 64.9% of respondents who are single. Overall, there was no significant relationship between respondents' marital status and their awareness about vaginal douching. The proportion of those who have heard about vaginal douching increased with increase in age range. 54.7% of young persons in the age range 17 to 19 years have heard about vaginal douching, as compared to 70.3% of those in the age range 20 to 24 years and 89.7% of those in the age range 25 years and above. Overall, there was significant difference between respondents' age at last birthday and their awareness about vaginal douching. Awareness also increased as respondents' level of study increases. Proportion of respondents who have heard about vaginal douching increased from 58.1%for respondents in

100 Level to 100% for respondents in 600 Level. Overall, there was significant relationship between respondents' current level of study and their awareness about vaginal douching.

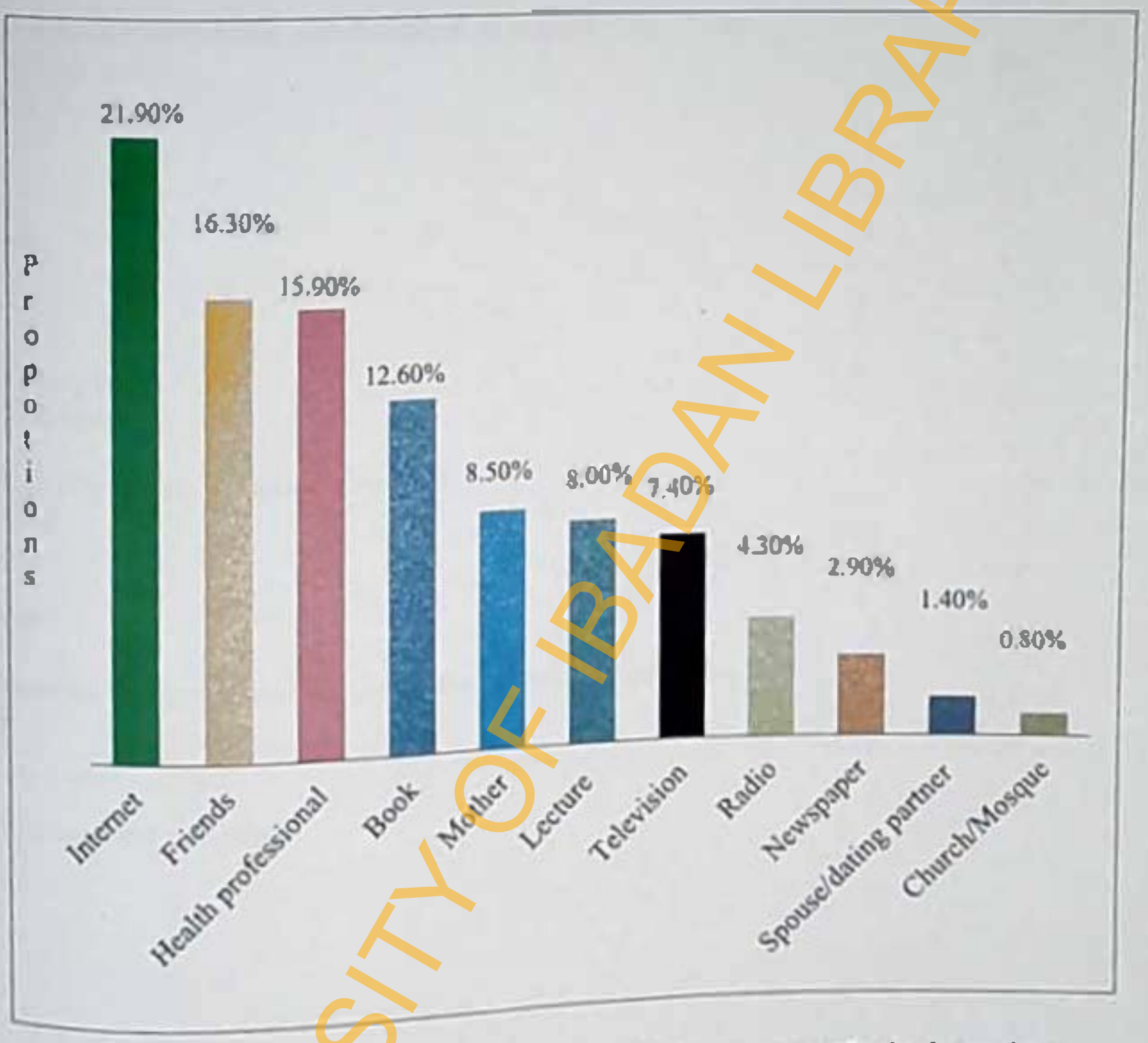


Figure 4:2 Distribution of respondents' sources of information on Vaginal Douching

Table 4.2: Awareness of vaginal douching

Characteristics	Number	%
Ever heard of vaginal douching		
Yes	269	65.1
No	144	34.9
Major source of information about vaginal douching * (N= 269)		
Health professional	78	29.0
Internet	68	25.3
Mother	36	8.7
Book	25	6.1
Friends	24	5.8
Television	12	2.9
Lecture	11	2.7
Newspaper	6	1.5
Radio	5	1.2
Spouse/dating partner	3	0.7
Church/Mosque	1	0.2
Frequency of hearing of vaginal douching		
Never heard	144	34.9
Rarely	199	48.2
Often	61	14.8
Very Often	9	2.2
Ever attended any educational programme on vaginal douching		
Yes	20	4.8
No	393	95.2

* No responses were excluded

Table 4.3: Awareness of vaginal douching by some demographic characteristics

	Variables	Heard of Vaginal douching N (N %)	Not heard of vaginal douching N (N %)	
Marital Status	Single	264 (64.9)	143(35.1)	X^2=0.888, P=0.346, P> 0.05
	Married	5 (83.3)	1(16.7)	
Age (in Years)	Young Persons (17-19)	94 (54.7)	78(45.3)	X^2= 18.476, P =0.00, P < 0.05
	Young Persons (20-24)	149 (70.3)	63(29.7)	
	Adults (25 and above)	26(89.7)	3(10.3)	
Religion	Christianity	238(65.9)	123(34.1)	X^2=3.08, p = 0.379, P> 0.05
	Islam	30(60)	20(40)	
Level	100	90(58.1)	65(41.9)	X^2= 18.313, P= 0.003 P< 0.05
	200	43(56.6)	33(43.4)	
	300	39(75.0)	13(25.0)	
	400	72(69.9)	31(30.1)	
	500	18(90.0)	2(10.0)	
	600	7(100.0)	0(0.0)	

4.3 Knowledge of Vaginal Douching

Few of the FGD discussants identified physical consequences of vaginal douching such as vaginal bruises, reproductive tract infections. The typical responses of the few discussants include the following:

- *"The vagina is like a rubber and usually tight. Therefore, any substance used on it can cause injury to the vagina.*
- *"Long fingers can cause injury to the vagina. The use of herbal mixture can be toxic to the vagina environment and someone can tamper with anything that you do not know or you cannot see like any organ".*
- *"Long fingers can cause damage to the womb and may result to the death of the mother and child"*
- *"When there is a cut after tampering with the environment of the vagina and sexual intercourse takes place, it can lead to infection because the affected part can aid transmission of STIs*

Table 4.4 presents the general information on vaginal douching from each knowledge question item. Only less than a quarter of the respondents (18.4%) know that vaginal douching as a practice is not an effective method of contraception. Similarly, just about a quarter of the respondents (25.6%) were aware that douching does not protect against sexually transmitted infection. However, large proportion (76.9%) of the respondents were aware that vaginal douching keeps the vaginal clean and fresh. Similarly, majority (89.5%) of the respondents agreed that douching of the vaginal changes the natural chemical composition of the vaginal environment.

The proportion of respondents with good and poor knowledge scores relating to vaginal douching are shown on Figure 4.3. About two-third of the respondents (66.0%) had poor knowledge of vaginal douching. Respondents had a mean knowledge score of 2.6 ± 2.9 (see Figure 4.3). As shown on Table 4.5, Increase in the development of reproductive tract infections (36.9%) had the highest proportions among the health effects of vaginal douching mentioned by the respondents, followed by the reason that vaginal douching upsets the naturally occurring vagina substances that helps to keep the vagina clean and healthy (13.6%).

Table 4.6 shows respondents' knowledge of vaginal douching by selected socio-demographic characteristics. The selected characteristics were age, level of study, hall of residence and religion. The proportion of respondents with good knowledge scores increase with increase in

age. Among those aged 17 – 19, 20 – 24 and 25 – 31 years were 27.1%, 37.7% and 48.1% respectively. Overall there was a significant difference between knowledge of vaginal douching and age of respondents (See Table 4.6).

The proportion of respondents with poor knowledge decreased with increase in levels from 400 to 600. For instance, the proportion of respondents with poor knowledge for 400, 500 and 600 levels are 64.9%, 50.0% and 0.0% respectively. All the 600 level students (100%), and half of the number of respondents in 500 level (50%) had good knowledge of vaginal douching. Overall, there was significant difference between knowledge of vaginal douching and level of study (see Table 4.6).

The proportion of students with good knowledge of vaginal douching in Alexander Brown Hall (ABH) was 72.0% and this is higher than the proportion of students with good knowledge in each of the remaining halls. This is followed by Obafemi Awolowo Hall (34.4%), Queen Elizabeth II (32.7%) and Queen Idia (27.9%). Overall, there was significant difference between level of knowledge and hall of residence (see Table 4.6).

More Christian (34.2%) had good knowledge of vaginal douching compared with adherents of Muslims religion (31.9%). There was however no significant relationship between religion and level of knowledge of vaginal douching.

Table 4.4: General Knowledge on Vaginal Douching (N= 413)

Knowledge related to vaginal douching	Pattern of Response		Total
	Yes (%)	No (%)	
Vaginal Douching is an effective method of contraceptive	93(81.6)	21(18.4)	114
Vaginal douching prevents unwanted pregnancy	115(82.7)	24(17.3)	139
Vaginal douching protects against sexually transmitted infection	128 (74.4)	44(25.6)	172
Vaginal douching keeps the vaginal clean and fresh	153(76.9)	46 (23.1)	199
Vaginal douching tightens the vaginal after delivery	28(32.6)	58(67.4)	86
Vaginal douching is an effective therapy for vaginal infections	87(21.1)	73(17.7)	160
Vaginal douching changes the natural chemical composition of the vaginal environment	128(89.5)	15(10.5)	143
Vaginal douching can cause reproductive tract infection	100(75.8)	32(24.2)	132

Table 4.4: General Knowledge on Vaginal Douching (N= 413)

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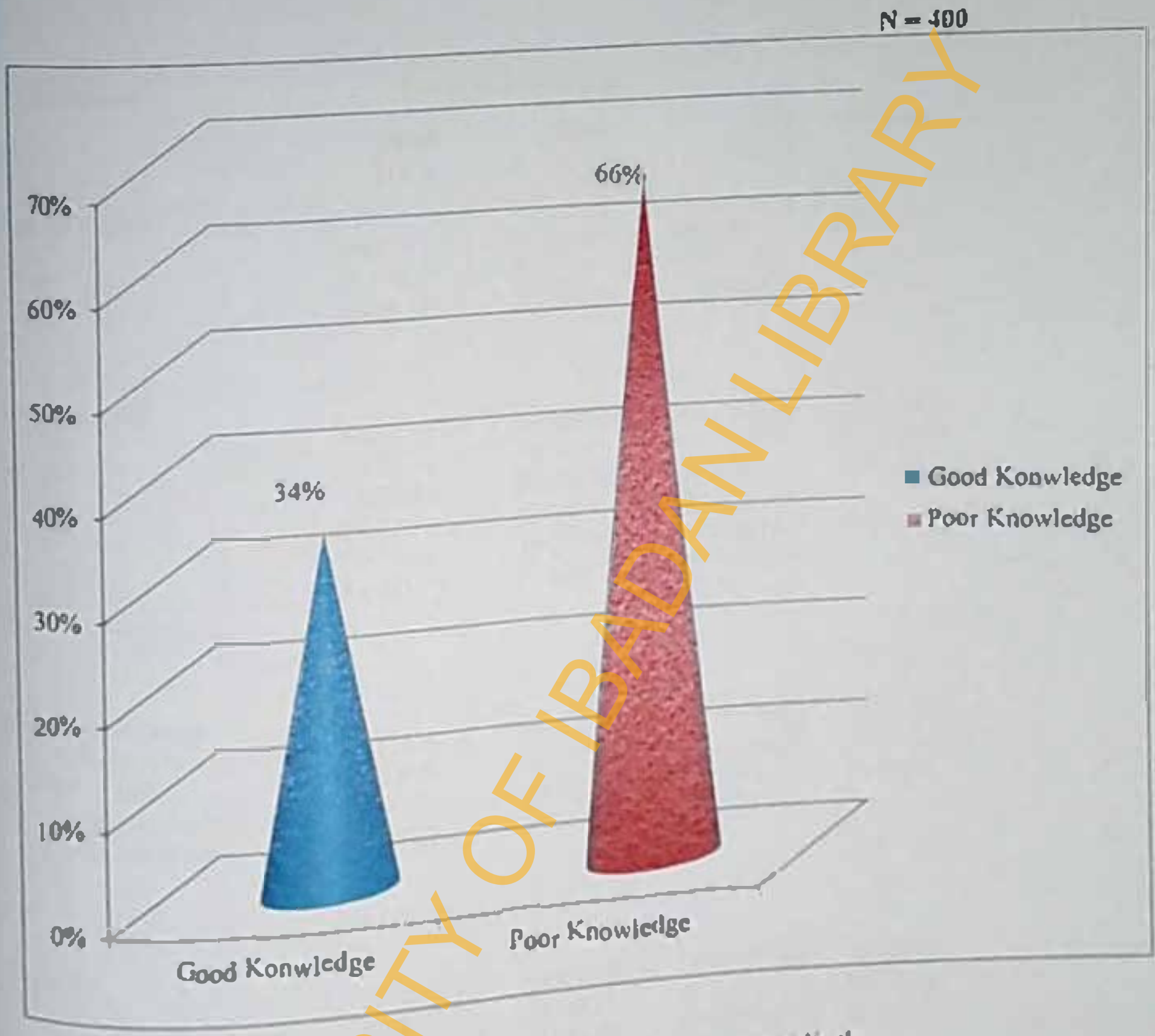
Vaginal douching tightens the vaginal after delivery	28(32.6)	58(67.4)	86
Vaginal douching is an effective therapy for vaginal infections	87(21.1)	73(17.7)	160
Vaginal douching changes the natural chemical composition of the vaginal environment	128(89.5)	15(10.5)	143
Vaginal douching can cause reproductive tract infection	100(75.8)	32(24.2)	132

Table 4.5: Health effects of vaginal douching N = 77

Health effects of douching	Number*	%
Increase in the development of reproductive tract infections	48	36.9
It upsets the naturally occurring vagina substances that helps to keep the vagina clean and healthy	17	13.1
Pregnancy complication like PID, Ectopic pregnancy	16	12.3
Increase in sexually transmitted infections	14	10.8
Bruising, irritation and injury	13	10.0
Gynaetresia/ inflammation of the vagina	8	6.2
Cervical cancer	5	3.8
Discomfort	4	3.1
Vagina dryness	2	1.5
Infertility	2	1.5
Lowers the immunity of the vaginal area	1	0.8

*Multiple response present



*Key
Knowledge scores of ≤3 and >3 were rated as poor and good, respectively
Good knowledge (4-11) = 135
Poor Knowledge (0-3 points) = 262
* Note: Mean knowledge score = 2.6 ±2.9

Fig: 4.3 General Knowledge on douching

Table 4.6: knowledge of vaginal douching by selected demographic characteristics

N = 413

Variables	Level of knowledge		Total	P value
	Good N (%)	Poor N (%)	N (%)	
Age (in years)				X^2= 7.2
17- 19	45(27.1)	121(72.9)	166(100.0)	P = 0.03
20 – 24	77 (37.7)	127 (62.3)	204 (100.0)	P<0.05
25 – 30	13(48.1)	14 (51.9)	27 (100.0)	
Level of study				X^2= 17.3
100	47(31.1)	104(68.9)	151(100.0)	P = 0.004
200	19(25.7)	55(74.3)	74 (100.0)	P<0.05
300	19(38.8)	30(61.2)	49(100.0)	
400	34(35.1)	63(64.9)	97 (100.0)	
500	10(50.0)	10 (50.0)	20(100.0)	
600	6 (100.0)	0 (0.0)	6 (100.0)	
Halls of residence				X^2=18.5
Obafemi Awolowo	42 (34.4)	80 (65.6)	122 (100.0)	P= 0.00
Queen Idia	39(27.9)	101(72.1)	140 (100.0)	P<0.05
Queen Elizabeth II	36(32.7)	74(67.3)	110 (100.0)	
Alexander Brown	18(72.0)	7 (28.0)	25 (100.0)	
Religion				X^2=2.5
Christian	119 (34.2)	229(65.8)	348 (100.0)	P= 0.5
Islam	15(31.9)	32(68.1)	47 (100.0)	P>0.05
Traditional	0(0.0)	1(100.0)	1 (100.0)	
Judaism	1(100.0)	0(0.0)	1(100.0)	

4.4 Perception of Respondents towards Vaginal Douching

Majority of the discussants described vaginal douching as a practice that must be encouraged because of some of the perceived benefits derived from the practice. The following quotes reflect some of their comments:

- *"Vaginal douching is a good feminine practice especially for non-virgins. It makes them feel neat, fresh and attractive"*
- *"Vaginal douching prevents odour, discharge. It makes one's boyfriend to want to have sexual intercourse with one"*
- *Cleaning the vagina helps one to feel fresh and obtain from infection*

Perception scores of ≤ 8 and > 8 were rated as poor and good, respectively and a mean perception score of 7.9 ± 2.9 with one quarter of the respondents (25.4%) with good perception of vaginal douching. Table 4.7 presents respondents' perceptions relating to vaginal douching. More than a quarter (35.7%) of the respondents opined that vaginal douching is culturally acceptable method through which women maintain the cleanliness of their vagina. Similarly, More than a quarter (36.3%) of the respondents reported that vaginal douching is a good method of keeping the vagina odourless. Few (5.3%) respondents opined that vaginal douching helps to increase sexual pleasure. Similarly, few (5.1%) respondents acknowledged that vaginal douching helps to retain a relationship. The perception that not all douching promote vaginal itching and discharge was reported by less than a quarter (15.8%) of the respondents. The view of 31.5% of the respondents was that the vaginal douching helps ladies to feel fresh after menstrual period. Few (10.2%) respondents opined ladies who do not practice vaginal douching always have foul smell and few (5.1%) reported that most men do not like ladies who do not practice vaginal douching.

Table 4.8 shows respondents' perception of vaginal douching by selected socio-demographic characteristics. The selected characteristics were age at first douching, marital status and religion. The proportion of respondents with good perception increase with increase in age at first douching practice. There was however no significant relationship between age at first douching and respondents' perception of vaginal douching. More muslims (26.5%) than christians (25.1%) have good perception of vaginal douching. However, no significant relationship existed between religion and respondents' perception of vaginal douching.

Table 4.7: Perception of Respondents towards Vaginal Douching (N=413)

Perception related to vaginal douching	Pattern of Response			Total
	Yes (%)	No (%)	Don't know (%)	
Vaginal douching is a culturally acceptable method through which women maintain the cleanliness of their vagina	147 (35.7)	68(16.5)	198 (47.8)	413
Vaginal douching is a good method of keeping the vagina odourless	150(36.3)	63(15.3)	200(48.4)	413
Vaginal douching helps to increase sexual pleasure	22 (5.3)	58(14.1)	333(80.6)	413
Vaginal douching helps to retain a relationship	21(5.1)	95(23)	297(71.9)	413
Not douching promote vaginal itching and discharge	65(15.8)	91(22.1)	257(62.1)	413
Vaginal douching helps ladies to feel fresh after menstrual period	130(31.5)	33(8)	250(60.5)	413
Ladies who do not practice vaginal douching always have foul smell	42(10.2)	120(29.1)	251(60.7)	413
Most men do not like ladies who do not practice vaginal douching	21(5.1)	58(14.1)	334(80.8)	413

Table 4.8 Perception of vaginal douching by selected demographic characteristics

N = 413

Variables	Level of Perception			
	Good N (%)	Poor N (%)	Total N (%)	P value
Age at first douching practice (in years)				X^2= 1.4
Less than 13 years	3(12.5)	21 (87.5)	24 (100.0)	P = 0.2
13 or more years	13(24.1)	41 (75.9)	54 (100.0)	P>0.05
Marital Status				X^2= 0.2
Single	103 (25.6)	300 (74.4)	403 (100.0)	P= 0.6
Married	1(16.7)	5(83.3)	6(100.0)	P>0.05
Religion*				X^2=0.044.
Christian	90 (25.1)	268(74.9)	358 (100.0)	P= 0.8
Islam	13(26.5)	36(73.5)	49(100.0)	P>0.05

4.5 Prevalence of Vaginal Douching

Most discussants from all the halls of residence except those from Alexander Brown hall were of the view that vaginal douching is prevalent among female students of University of Ibadan (UI). Discussants from Alexander Brown hall disclosed that the prevalence of vaginal douching is very low among university students. Typical statements which relate to prevalence of vaginal douching include:

- *"I think vaginal douching is a frequent act performed by us ladies. People often engage in it during bathing, when using the toilet and during menstruation*
- *"Ladies who have lost their virginity need to douche regularly when they want to have sex in other to please their boyfriends*

Some discussants who said the prevalence of douching is low among university students had these to say:

- *"I feel, to an extent, it is minimal, because it is not usually heard of. If you do such thing, it will be accompanied with various reproductive tract infections. Such practice is less likely to happen among college of medicine students".*
- *"Vaginal douching is rare and must not be heard of. The vagina itself has some self-cleansing mechanism that helps to clean the vagina. Vaginal douching washes away the bacteria that cleanse it. Hence, making the vagina susceptible to infections.*

The discussants who believed that vaginal douching is a prevalent practice among university students reported the substances used to douche. Typical responses include:

- *"Ladies use various things to douche the vaginal. Example of such is alum which is for those that abuse their female counterpart or for commercial sex workers to tighten the vagina.*
- *"one can use alum, Coca-Cola, water and soap, and water"*
- *"Alum, water, vinegar shower gel. Some people use shampoo, herbs or krest*

Table 4.9a presents the prevalence of vaginal douching among respondents. A total of 125 (30.3%) respondents had ever done vaginal douching. Large proportion of the respondents used water and soap (39.2%) to douche, followed by those who used water only (24.5%) and those

who used Dettol (11.8%). The respondent responses on the douching substances ever used and last douched with were then categorized into commercial douche and homemade douche. Out of which 66.7 percent reported to have used commercial douche and 33.3 percent had use homemade douches prior to the study while 72.1% and 27.9% of the respondents reported to have ever used commercial and homemade douches respectively.

Respondents were asked the number of times they douched; a higher proportion (about 65%) douched everyday and about 10% douched more than once daily. Respondents were asked the last time vaginal douching was practiced. Many (56.1%) douched the day the study took place and 13.8 per cent douched a day before the study took place.

About a third (32%) reported they douched as a result of sexual partner's the influence. Among the people who the student learnt vaginal douching practice from, mother ranked the highest with a proportion of 29.7 followed by internet (12.6%). However many (20.3%) also reported they practiced it on their own without any help from any source. Television, father and newspaper were the least mentioned each 0.5%.

Table 4.10 shows prevalence of vaginal douching by some selected social demographic characteristics. The selected characteristics were age, level of study and Hall of residence. The practice of vaginal douching was higher among students within the age group of 20-24 years (66.0%). Overall, there was a significant relationship between respondent age and prevalence of vaginal douching among the students. The highest proportion of respondents who douche was found among students in 500 (40.0%) level while no respondents in 600 level (0.0%) had ever douched before. Overall, there was no significant relationship between respondent level of study and prevalence of vaginal douching among the students. The proportion of respondents who douched were found to be highest in Obafemi Awolowo Hall (35.8%), followed by Queen Idia Hall (34.2%), then by Queen Elizabeth II hall (24.3%) and lowest in Alexander Brown Hall (10.0%). The relationship between Hall of residence and prevalence of douching was found to be significant. Table 4.10 also shows the prevalence of vaginal douching by religious. More Christians (31.9%) douched compared to their Muslim (20.0%) counterparts. Overall, there was no significant relationship between respondent religion and prevalence of vaginal douching among the students.

Table 4.11 shows prevalence of vaginal douching by some selected non-demographic characteristics. The proportion (92.6%) of those who saw their menstrual flow late in life (in the age of 13 to 19 years) was higher than the proportion (88.6%) of those who had their first menstrual flow when they were less than 13 years. Overall, there was no significant association between indulgence in vaginal douching and age at first menstrual flow. Respondents were asked if they had ever had sexual intercourse, and it was found that 94% of those who reported to have had sexual intercourse had done vaginal douching before as compared to 90% who reported that they have never had sexual intercourse before. There was no significant relationship between ever had sex and the practice of vaginal douching. The proportion of those who douched and have attended an educational programme on vaginal douching (60%) was significantly higher than those who had not attended any educational programme on douching (8.8%). (See details in Table 4.11).

Table 4.12 and Table 4.13 contain frequency of vaginal douching and frequency of vaginal douching by some selected non-demographic characteristics respectively. Higher proportion of the respondents (59.3%) indicated that they always douched after menstruation while only 9.7% and 5.9% of the respondents indicated that they always douched after sexual intercourse and after ablution respectively. Table 4.5.5 showed that those respondents who get their douching products at places less than 2 km away from their place of residence have higher proportion of douching everyday or more (77.1%) than others (66.7%) who get their douching products in places more than 2kms from their place of residence. Overall, there was no significant relationship between frequency of douching and distance from sources of douching products. The proportion of those who douched daily or more (91.3%) was significantly higher for respondents who had their first douching experience early (before the age of 13 years) than others (60.8%) who had their first douching experience when they were more than 13 years.

Table 4.14 presents the various factors that influence decision to practice douching. Among the factors considered, "to feel fresh" ranked the highest (42.5%) followed by "to reduce vaginal odour and discharge" (34.4%) and then by "to cleanse the vagina after sexual intercourse" (6.1%). other factors considered were to alleviate an itch after sexual intercourse, to prevent pregnancy, to enhance vaginal pleasure, to prevent sexually transmitted infections, to cleanse the vagina before sexual intercourse, to cleanse the vagina in between the act of sexual intercourse which all ranged between 5% and 1%.

Table 4.9a : Prevalence of Vaginal Douching

N=413

Characteristics	Frequency	Frequency (%)
Have you ever done vaginal douching before		
Yes	125	30.3
No	288	69.7
Substances used for douching, *multi Res,(n = 204)		
Alum	4	2.0
Water and soap	80	39.2
Vinegar	4	2.0
Dettol	24	11.8
Water only	50	24.5
Summer eve	11	5.4
Shower gel	11	5.4
Bath gel for genital organ	12	5.9
Water and salt	2	1.0
Fem fresh	2	1.0
Hot water	1	0.5
Salt and Dettol	1	0.5
Ytacan metronidazole cream	1	0.5
Izal	1	0.5
Substances ever used for douching in two variable N=162 *		
Commercial douche	108	66.7
Homemade douche	54	33.3
Age (in years) at first douching practice	*mean age = 15.41±0.468;	
Frequency of douching (n = 119)		
More than once n day	12	10.1
Everyday	77	64.7
Once a week	7	5.9
Twice a week	4	3.4
3-5times a week	9	7.6
Twice in a lifetime	3	2.5
Once in a lifetime	7	5.9
Last time douching was done (n = 123)		
Today	69	56.1
Yesterday	17	13.8
Last week	6	4.9
A Fortnight ago	4	3.3
Last month	10	8.1
Last year	12	9.8
2years ago	5	4.1
Substances used for last vaginal douching	3	1.9
Alum	71	43.8
Water and soap	2	1.2
Vinegar	14	8.6
Dettol	44	27.2
Water only	8	4.9
Summer eve	5	3.1
Shower gel		

Table 4.9b : Prevalence of Vaginal Douching

N=413

Substances used for last vaginal douching*	Frequency	Frequency (%)
Bath gel for genital organ	7	4.3
Salt and water	1	0.6
Sponge	2	1.2
Lime	1	0.6
Dettol in hot water	1	0.6
Hot water and salt	1	0.6
Ytacan	1	0.6
Fem Fresh	1	0.6
Substances last used for douching in two variable N=162		
Commercial douche	108	66.7
Homemade douche	54	33.3
Places where douching product was purchased		
Supermarket	77	62.1
Hostel	36	29.0
A marketing company	1	.8
Pharmacy	10	8.1
Distance of residence to the place of purchase		
Less than 1Km	81	69.8
1-2Km	18	15.5
3-5 Km	3	2.6
Above 5Km	14	12.1
	*mean age = 12.81±0.118; min=9, max = 16	
Age at menarche n = 133		
Ever had intercourse before		
Yes	36	28.6
No	90	71.4
Age at Coitarche	mean age = 18.89±0.534; min=10, max = 28	
Ever douched as a result of sexual partner influence (n=50)		
Yes	16	32.0
No	34	68.0
Who you learned douching practice		
Mother	54	29.7
Self	37	20.3
Husband/doting partner	18	9.9
Male friends	1	0.5
Female friends	21	11.5
Movies	5	2.7
Book	15	8.2
Internet	23	12.6
Sister	2	1.1
Television	1	0.5
Health professional	3	1.6
Father	1	0.5
Newspaper	1	0.5

*Multiple responses were present

Table 4.10: Prevalence of vaginal douching by selected demographic characteristics

N = 413

Variables	Prevalence of Vaginal Douching			P value
	Yes (%)	No (%)	Total	
Age (in years)				
17-19	39 (22.7)	133 (77.3)	172	X^2 = 10.526
20 – 24	72 (66.0)	140 (34.0)	212	P= 0.005
25 – 30	15 (51.7)	14 (48.3)	29	P<0.05
Level of study				
100	45 (29.0)	110 (71.0)	155	X^2= 4.409
200	22 (28.9)	54 (71.1)	76	P= 0.49
300	17 (32.7)	35 (67.3)	52	P>0.05
400	33 (32.0)	70 (68.0)	103	
500	8 (40.0)	12 (60.0)	20	
600	0 (0)	7 (100)	7	
Hall of residence				
Obafemi Awolowo Hall	44 (35.8)	79 (64.2)	123	X^2= 10570
Queen Idia Hall	51 (34.2)	98 (65.8)	141	P = 0.014
Queen Elizabeth II hall	27 (24.3)	84 (75.7)	111	P< 0.05
Alexander Brown Hall	3 (10.0)	27 (90.0)	30	
Religion				X^2= 2.917
Christianity	115(31.9)	246(68.1)		P = 0.09
Islam	10(20.0)	40(80.0)		P>0.05

Table 4.11: Prevalence of vaginal douching by non demographic characteristics

N = 413

Variables	Prevalence of vaginal douching			P value
	Yes (%)	No (%)	Total	
Ever attended programmes on vaginal douching				X^2 =8.804
Yes	12 (60.0)	8 (40.0)	20	P= 0.003
No	113 (8.8)	280 (71.2)	393	P<0.05
Age at first menstrual flow				X^2 =0.658
< 13 years	46 (88.5)	6(11.5)	52	P= 0.417
>13 or more years	75 (92.6)	6 (7.4)	81	P>0.05
Ever had sexual intercourse				X^2=0.637
Yes	34 (94.4)	2(5.6)	36	P= 0.417
No	81(90.0)	9 (10)	90	P>0.05

Table 4.12: Frequency of Vaginal Douching N = 125

Characteristics	Always Freq (%)	Sometimes Freq (%)	Never Freq (%)	Total
Ever douched after sexual intercourse	12(9.7)	12(9.7)	100(80.6)	289
Ever douched during shower	73 (58.4)	32(25.6)	20 (16)	288
Ever douched during ablution	7(5.9)	0(0.00)	111(94.1)	118
Ever douched after visiting the toilet	58 (47.5)	27 (22.1)	37 (30.3)	122
Ever douched after Menstruation	73 (59.3)	19 (15.4)	31 (25.2)	123
Ever douched during Menstruation	62(51.2)	20 (16.5)	39 (32.2)	121

Table 4.13: Frequency of vaginal douching by Non demographic variables N =125

Variables		Douche daily or More N (N %)	Douche weekly or less N (N %)	
Source distance to place of residence	Less than 2 km	74 (77.1)	22 (22.9)	X^2=0.177, P=0.674, P> 0.05
	More than 2 km	2 (66.7)	1(33.3)	
Age(in Years) of first douche	Less than 13 years	21 (91.3)	2(8.7)	X^2=7.068, P = 0.008, P < 0.05
	13 years or more	31 (60.8)	20(39.2)	

Table 4.14: Factors that influence decision to practice douching

N=125

Characteristics	Frequency	Frequency (%)
Factors that influence decision to practice douching, * multiple response (n = 247)		
To feel fresh	105	42.5
To reduce vagina odour and discharge	85	34.4
To cleanse the vagina after sexual intercourse	15	6.1
To prevent sexually transmitted infections	11	4.5
To alleviate itching after sex	8	3.2
To enhance sexual pleasure	7	2.8
To cleanse the vagina before sexual intercourse	7	2.8
To prevent pregnancy	5	2.0
To cleanse the vagina in between the act of sex	4	1.6

*Multiple response present

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Socio-demographic characteristics and related information of respondents

The ages of respondents ranged from 17 – 31 years with a mean age of 20.45 years. This implies that a large percentage of the target population consist of young persons. This finding was similar to a previous study conducted among undergraduates of University of Ibadan revealed a mean age of 22.7 years (Iwuagu, Ajuwon, & Olaseha, 2000). The age range of the respondents in the current study indicates that some of the respondents may have completed their secondary school education before the statutory or official age of 18 years as contained in the National Policy of Education (Federal Ministry of Education, 1983). Based on the policy, the minimum acceptable age at which students should be in the University is 18 years. The proportion of respondents who practiced Christianity is higher than those who are Muslim which are higher than those who practiced traditional religion. This is similar to a survey conducted by National Population Commission in 2008 where about 54 percent of respondents are Christian 45 percent of all respondents are Muslim and 1 percent of respondents are Traditionalist (National Population Commission, 2008).

Awareness and Knowledge of vaginal douching

The study participants were aware of vaginal douching as a practice often experienced by female undergraduates. They listed substances (homemade and commercial products) such as vinegar, water, summer eve amongst others. The high level of awareness found among the respondents could have been due to their level of education, exposure and availability of the douching substances. Awareness could have been influenced also by peers since the students were residents in the female halls of residence. According to Brown and Brown (2000), douching was described as a vaginal practice involving the insertion or external use of a substance or material to affect sexual pleasure or satisfaction, hygiene, fertility or the reproductive health of a woman.

[illegible] constituted participant's major source of information on vaginal douching closely followed by friends. Several studies have shown that peers or friends are more common sources of information about reproductive health related issues among young people (Obaid, Agwanda, & [illegible], 2006; Zhang, Shah, & Baldwin, 2006). This includes issue related with vaginal

douching. Mothers were the lifth source of information in this present study which may be indicative of the level of exchange of information or communication between young persons and mothers. Studies have shown that prevalence of communication between parents and their adolescent or young adult children on reproductive health related issues is low in several settings (Garg, Shanna & Sahay, 2000; Zhang, Xiaoming, Shah, Baldwin, & Stanton, 2007b) Zhang, Xiaoming, & Shah, 2007a; Zhang, Xiaoming, Shah, Baldwin and Stanton, 2007b). The result of this study suggests cessation or discouragement of vaginal douching or are more likely to be successful if channelcd through peers because young persons are most likely to open up to their peers.

The study has revealed that few respondents were knowledgeable about the adverse physical consequences of vaginal douching. Increase in the development of reproductive tract infections, upsets the naturally occurring vagina substance (Micro flora) that helps to keep the vagina clean and healthy were the major physical health effects of vaginal douching mentioned by the respondents. The reason for these findings might be due to the perceived benefits of vaginal douching. Many have not actually been exposed to educational programmes that could have positive influence on their knowledge of vaginal douching. This was further Reinforced by the increase in level of knowledge with increase in respondents' level of study. The outlined consequences are in tandem with Martino and Vermund (2002)and Ness, et al. (2002).

Respondents' level of knowledge of vaginal douching increased significantly by level of study (i.e. year of study). The increasing length of stay in the University and the exposure to various curricular and co-curricular learning opportunities over the years may have accounted for this knowledge differential among respondents. Students in Alexander Brown Hall were more knowledgeable about the health effects of vaginal douching (Eyiol, 2009). A possible reason for this is that students who reside in Alexander Brown Hall are medical students who are in the clinical phase of their medical training. They are usually exposed to various practice that could results in reproductive health issues among females and their clinical management, formally in classroom, wards and consulting rooms.

Perceptions of vaginal douching

In this study, more than a quarter of the respondents perceived that that vaginal douching is a good method of keeping the vagina odourless (36.3%), and that vaginal douching is a culturally acceptable method through which women maintain the cleanliness of their vagina (35.7%). It can

be said that the major reason why young females douche is for hygienic purpose this statement is well supported by the reasons the respondents gave for douching. The major reason given by the respondents for douching is to feel fresh (42.5%) and to reduce vagina odour and discharge (34.1%). Similar studies also support this claim. In 2000, Crosby, Newman, Kamb, Zenilman, Douglas and Iatesta described one of the reasons women douche as a desire to feel clean and fresh, prevention or treatment of infection and less commonly to prevent pregnancy as described by Oh, Funkhouser, Simpson, Brown and Merchant (2003).

In addition to the above statement that female douche for hygienic purpose, 31.5% of our respondents perceived that vaginal douching helps ladies to feel fresh after menstrual period and 15.7% of the respondents reported that not douching promote vaginal itching and discharge Also, among those who indulged in vaginal douching, the proportion (92.6%) of those who saw their menstrual flow late in life (in the age of 13 to 19 years) was higher than the proportion (88.6) of those who had their first menstrual flow when they were less than 13 years. In other words, most young ladies douche as a result of menstrual hygiene to ensure that the vulva is clean and fresh after menstruation. According to Dasgupta and Sarkar, menstrual period may be accompanied by discomfort, reproductive tract infection, smelling and embarrassment among others, if poorly managed (Dasgupta and Sarkar, 2008). Dasgupta and Sarkar further explained that menstrual hygiene include choice of the best "period protection" or feminine hygiene products; how often and when to change the feminine hygiene products; bathing care of the vulva and vagina as well as the supposed benefits of vaginal douching at the end of each menstrual period (Dasgupta and Sarkar, 2008). Taking care of the vagina is important but taking unhealthy risk all because one wants to feel fresh and clean is not good enough. As will be seen further in the discussion on the substances female use when it comes to cleaning the vaginal, many young ladies are not informed how to take proper care of their reproductive organs. According to World Health Organisation, many adolescents are often less informed, less experienced, and less comfortable accessing reproductive health information and services than adults (WHO/UNFPA/UNICEF, 1999). In many parts of the developing countries, a culture of silence surrounds the topic of menstruation and related issues (Suneela, Nandini and Ragini, 2001;Olayinka and Akinyinka, 2004).

Overall, this study also revealed that the proportion of respondents with poor or negative perception about vaginal douching was 75%. This may be due to lack of adequate knowledge or information about douching practice. According to Olayinka and Akinyinka, in many parts of the developing countries, a culture of silence surrounds the topic of menstruation and related

issues (Olayinka and Akinyinka, 2004), as a result, many young girls lack appropriate and sufficient information regarding menstrual hygiene. This may result in incorrect and unhealthy behaviour during their menstrual period including the misconception of douching to remove menstrual blood.

Prevalence of vaginal douching

The proportion of respondents who had ever done vaginal douching stood at 30.3%. This shows that phenomenon is a public health concern. This higher proportion of respondents who indulged in douching practice might be due to a number of factors that can include the sanitary situation of the hall of residence where the student stay as some indicated that they practiced douching after using the toilet. Influence by peer and sexual partner could also account for the high prevalence value since dating is a common practice in tertiary institution Pavlou (2007). This proportion is large and is supported by other earlier studies. In Central African Republic, 30.0% of women in a study in the Central African Republic reported the use of vaginal agents for the treatment of vaginal discharge (Grescnguet, Kreiss and Chapko, 1997). However, this proportion of those who had ever douched in this study is lower than the proportion reported in some studies. In Zimbabwe 87% of clinic attendees (Runganga, Pitts and McMaster, 1992) reported this habit. Some African countries such as Cote d'Ivoire, douching among pregnant women were reported to be nearly a universal practice with a prevalence of 98.0% (La Ruche, Messou and Ali-Napo, 1999). In Nigeria, Mairiga, Kulluna, and Kawuwa in 2010 found that 62.0% of their respondent douched, 72.0% among female sex workers in Nairobi, Kenya which is a similar African setting (Fonck, et al., 2001) and 37.0% in USA among females in the reproductive age (Arol, Mosher and Cates, 1992). This disparity might be due to the fact that university students have more information about the negative effects of vaginal douching than what other women in general know.

In this study, we found out that more of what the respondents used for vaginal douching were commercially made (66.7%) compared to homemade (33.3%). This is similar to what Merchant, Ifa, and Klerman reported in the United State that commercial made douching products have been found to be used as often as or more often than home preparations in the United States (Merchant, Ifa and Klerman, 1999). Substances used for vaginal douching by the respondents were Alum, Salt and soap, Vinegar, Dettol, Water only, Sunnier eve, Shower gel, Bath gel for genital wash, Water and salt, Fem fresh, Hot water, salt and Dettol, Yucan metronidazole cream, and Orgen. These are similar to douching substances earlier reported by other researchers Imade, Sagay, and

Onwuliri. Egah, Potts. and Short reported that women interviewed in their research used combination of homemade and commercial douches which include ordinary water and soap, saline. carbonated beverages. alum, local herbs, toothpaste. antiseptics and citrus juices/ Vinegar (Imade. Sagay, Onwuliri, Egah, Potts and Short, 2005).

In this study, among the substances used for douching. 'soap and water' was commonest one. Large proportion of the respondents used water and soap (39.2%) to douche, followed by those who used water only (24.5%) and those who used Dettol (11.8%). Possible reason for this may be that water and soap is the easiest substance to get as compared to other douching products. Our findings revealed that 32.0% of young females douched as a result of sexual partner's the influence. Male dominance in sexual matters in most Nigerian societies finds its expression in different cultural norms, perceptions and attitudes which promote women's difference to men in decisions relating to sexual matters (Egbeleye, 2006). Men are socialized to believe that they are superior to women and so should dominate their partners (Izugbara, Duru and Dania, 2008). Furthermore, males' involvement in pre-marital and extra-marital affairs is tacitly tolerated in many cultures (Izugbara et al, 2008). These same sexual acts are however viewed as aberrations or deviant acts when women indulge in them (Izugbara et al, 2008). According to Mckee, Bagarre, Anderson and Karasz (2009), all men in their sample uniformly described a healthy vagina as free of discharge or at least free of 'abnormal' discharge and without a 'strong' or 'repulsive' odour. They further indicated that douching is a form of cleanliness practice that is essential to maintain vaginal health. The men's narratives suggested that the vagina is an inherently dirty part of the body being a 'repository' for sperm and menstrual blood and as an important source of contamination and odour. Hence, douching was viewed as a good hygienic practice necessary for sexually active women to remove sperm or menstrual blood and to cure to eliminate the foul odour that a man's semen can produce. Therefore, influence of sexual partner may be the driving force behind the douching practice reportedly by females.

Implications for Health Education

The findings from this study have health promotion and education implications and suggest the need for multiple interventions directed at tackling the phenomenon. The careful implementation of phases of the PRECEDE-PROCEED model as a multiple intervention strategy can help health program planners to develop action plans. Precede-Proceed model not only contributes to the success of programs but also convinces decision makers, stakeholders, fund supporters, and other partners regarding the benefits of building health promotion program. Hence, it provides strong

indications for choosing the Precede-Proceed model to develop a vaginal douching cessation/prevention program.

The educational and organizational diagnosis phase necessitate that health planners identify predisposing, reinforcing and enabling factors that increase the likelihood that behavioral and environmental changes will occur. From this current study, it was observed that knowledge, perceptions and significant others are the factors that influenced whether to douche or not. Environmental enobling factors that may encourage douching cessation/ prevention include: accessibility and availability of resources on douching cessation/Prevention, the nature of laws and policies regarding vaginal douching cessation issued by Nigerian government, Agencies and authorities of higher institution. The University's students' handbook of information, University of Ibadan website could be used to disseminate facts on vaginal douching. The University radio station known as *Diamond FM* could be used to disseminate prevention messages on douching.

The fifth phase aims to identify the policies, resources, may facilitate or hinder increased vaginal douching cessation/prevention programs. During this phase, health program planners need to assess the availability of human and material resources (e.g., educational materials: booklets and pamphlets) and make plans to proceed with the program. Public enlightenment programmes including awareness campaigns have the potential for reaching large numbers of people. Public enlightenment campaign can create awareness and influence knowledge, perception and attitudes and foster political will for action, evidence of their effectiveness in changing behaviour remains insufficient (Whitaker, Baker and Arias, 2007). However, efforts must be made to combine it with other strategies such as peer education to effectively address vaginal douching practices among University students. Public enlightenment techniques could involve the use of leaflets, documentaries, jingles and bill boards (Whitaker, Baker and Arias, 2007). Use of one or more of these information media could be very helpful as the weaknesses of one could be counter-balanced by the strengths of others.

Peer education could be used to increase knowledge on vaginal douching among young persons in the University with the view to addressing the misconceptions about vaginal douching and its consequences. Previous researches (Friedman 1999; Smith and Welchans 2000) have indicated that positive results are more likely to result from school-targeted programmes which utilize peer education. Educational programmes should target misconceptions of douching and health consequences of vaginal douching.

Partnership with relevant sectors and agencies and non-governmental associations can be used to address the problem of vaginal douching among University students. Effective prevention will require the planning of actions together, and the sharing of funding or other resources with other relevant organization or institutions. Partnership involves pooling of resources from different parties together to address common concerns. The University could collaborate with relevant governmental organizations such as Ministries of Health and Justice and non-organizational organizations to organize behavioural change interventions that can sensitize and educate students and parents on vaginal douching Partnership may also be formed with students' organizations or associations within the University with a view to creating awareness on vaginal douching. Reaching out to clubs, organizations, and teams on campus is a unique way to reach high-risk target groups of students. Some students' associations in the University may serve as useful channels for educating students on vaginal douching. These associations may include the Students Union Government, Religious organizations, and Unibadan Health Organization. These associations may equally provide unique opportunities for recruiting peer educators who may be trained on prevention of vaginal douching. Combined use of two or more of the afore-mentioned health promotion and education strategies is prefered for preventing and controlling vaginal douching because of the inherent advantages. The combination of strategies ensures that weaknesses of one are counter-balanced by the strengths of the others. Policies, regulations and organization must be also be examined for fitness with the health promotion program plan.

Upon completion of this phase, the health planners involved with the health promotion program can then turn their attention to implement the second part of the model. Based on the policy and administrative diagnoses, health program planners can identify possible interventions. The first is an intervention to help people who douche to quit through cessation counseling. The second is a preventive intervention to prevent relapse among those who have already stopped. In the preventive intervention health education can be provided using appropriate communication skills that foster teaching learning for the other people who do not douche, or for those who already stopped on douching risks and cessation benefits.

Finally, evaluation of the plan and intervention that were developed must be carried out. First, a process evaluation should be conducted during the implementation of the vaginal douching cessation/intervention program to ensure that the program was implemented according to plan. Second, an impact evaluation must be conducted to evaluate changes in predisposing, reinforcing, and enabling factors as well as changes in behavioral and environmental factors. Finally, outcome

evaluation measures the effect of the vaginal douching cessation/ Prevention program on health and quality of life women who douche.

Conclusion

The current study explored the level of awareness. knowledge, perceptions, prevalence and as well as the frequency and factors that promote douching among female undergraduates of the University of Ibadan. Level of knowledge of vaginal douching and its related health effects was generally low among female undergraduate students.

Students of University of Ibadan perceived vaginal douching as an important part of female hygiene and must be performed especially after menstruation and sexual intercourse causing women to douche habitually.

Recommendations

Based on the findings from this study, the following recommendations are offered:

1. Vaginal douching is widely practiced by women who believed it's beneficial. Hence, initiatives should be directed at changing women's beliefs through training progmmmes aimed at changing their belief towards vaginal douching
2. The present study had revealed unhealthy menstrual practices, low level of knowledge and various misconceptions among female undergraduates regarding menstruation. The study also clearly pointed out the impact of health education in improving their knowledge and practice. Learning about hygiene during menstruation is a vital aspect of health education for adolescent girls as patterns that are developed in adolescence are likely to persist into adult life
3. Potential strategies would include activities addressing douching beliefs to counteract misconceptions about the benefits of douching, and to modify personal hygiene practice beliefs.
4. Skills-training activities would provide females with strategies to counteract pressure to douche from family, friends, and sexual partners. Given the strong trans generational nature of douching behaviour, family involvement including mothers, grandmothers, or other female relatives, would help to address social modeling and provide normative support for douching cessation or reduction. Thus, inclusion of advice from a healthcare provider may also influence a reduction in douching behaviour.

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APPENDIX I

FOCUS GROUP DISCUSSON GUIDE

Introduction

I am Regina Bajide and my colleagues are............... we are from the Faculty of Public Health, University of Ibadan. I thank you all for honoring the invitation to participate. Today we want to talk about the experience vaginal douching among female undergraduate students in this school. This is part of the research and the discussion will last for about one hour. Your views will be respected and will not be used against you in any way. There is no right or wrong view, so feel free to express yourself.

Your identity, responses and opinion will be kept confidential. Please do not mention your name or any other person's name and you are encouraged to feel free to give honest response. Remember your participation in this discussion is voluntary. Your decision not to be involved or drop at any point will not attract any penalty. This discussion is will be tape recorded, so please speak up and speak clearly. Do not mention fellow discussants names so that the tape recorder will not pick it up. We want the discussion to be anonymous and confidential as much as possible.

S/n	Main question	Hints/follow up question
1.	What makes campus life worth living in this school	• How is the social activity on campus? • What are the social benefits female students derive from this social activities on campus
2.	What is genital cleansing? Why do female in higher institution engage in genital cleansing	• Probe for what they feel or perceive • Probe for advantages or importance • What are some of the challenges associated with genital cleansing
3.	Now let us discuss about vaginal douching What do you know about vaginal douching?	Probe for • (a) substances used and preparations of the substances used • (b) Disadvantages and advantages of douching
4.	How common is vaginal douching among female students in this school?	Probe for what they feel about the onset of douching

5.	What are the situations, events or circumstance that can influence douching? What facilitate the practice of vaginal douching?	• Probe for when female student practice douching • Probe for (a) reasons (b) frequency at which female students practice vaginal douching (c) type of female students who practice douching
6.	What are the cultural roles and beliefs in that influence the practice of vaginal douching	Probe for the impacts of culture and religion on douching
7.	(a) What are the good effects of vaginal douching (b) What are the adverse effects of vaginal douching	Probe for the benefits of douching Probe for known effects of the following • Physical effects of the users on their bodies/ disease occurrence • Psychological effects i.e. effects on mind, feelings, emotions etc. • Social effects i.e effects on relationships
8.	What are the reproductive health infections often experienced by female students in this school?	Probe for the following • Occurence of sexually transmitted infections among female students in this school Probe for • The linkages of sexually transmitted infections with douching • Also probe for the treatment
9.	Should douching be encouraged?	Probe for participants opinion on whether vaginal douching should be encouraged or not Also probe for the substances that are safe to be used in douching
10.	What other information do you have in respect to douching among female students	

APPENDIX II

Dear Respondent,

My name is Bejide Regina Bolutife, a postgraduate student of Population and Reproductive Health Education, faculty of Public Health, University of Ibadan, Nigeria.

The questionnaire is designed to determine the prevalence, perceptions and practices of vaginal douching. The information needed is strictly for academic purposes in partial fulfillment for the award of the degree of Masters in public health. Be free to express your views based on what you really know and do, as there are no right or wrong answers.

The information provided will be treated with utmost confidentiality and the completion of the questionnaire is voluntary. You are hereby invited to participate in the study and encouraged to give HONEST and ACCURATE information.

I am willing to participate in the study, I understand that the information to be collected will be kept confidential and will be used strictly for the purpose of research. NO NAME IS REQUIRED. Your signature (which is optional is only an evidence of informed consent). This implies that you can participate without putting down your signature in the space provided.

Respondent's Signature: _____

Thank you for your cooperation

Section A: Socio-demographic characteristics

Instruction: In this section, please tick (✓) in the appropriate boxes that correspond to your answers or complete the spaces provided below

1. Faculty: _____

2. Department: _____

3. Level of study: 1. 100 Level [ ] 2. 200Level [ ] 3. 300Level [ ]
4. 400Level [ ] 5. 500Level [ ] 6. 600Level [ ]

4. Hall of Residence 1. Obafemi Awolowo Hall [ ] [2] Queen Idia Hall [ ]
3. Queen Elizabeth Hall II [4] Alexander Brown Hall [ ]

5. Religion: 1. Christianity [ ] 2. Islam [ ]
3. Traditional [ ] 4. Others (specify) _____

6. Ethnic group: 1. Yoruba [ ] 2. Igbo [ ]
3. Hausa [ ] 4. Other (pls specify) _____

7. Age in years (at last birthday): _____

8. Marital Status: 1. Single [ ] 2. Married [ ] If Single, skip Question 9

9. For how long have you been married? _____

SECTION B: AWARENESS OF VAGINAL DOUCHING

Instruction: Please tick the appropriate boxes that corresponds to your answers in this section. Feel free to be honest while answering the question in this section as all your responses will be kept secret.

10. Have you ever heard of the term "vaginal douching"? 1. Yes [ ] 2.No [ ]

11a. What are your sources of information about "vaginal douching"? Tick all options that apply to you

1. Television [ ] 2. Radio [ ] 3. Internet [ ] 4. Lecture [ ]
5. Newspaper [ ] 6. Book [ ] 7. Friends [ ] [8] Church/Mosque [ ]
9. Mother [ ] 10. Spouse/dating partner [ ] 11. Health Professional [ ]
12. Others (specify) _____

11b. Which of the above mentioned sources is the most important source _____

12. How often do you hear of "vaginal douching"?
1. Never heard [ ] 2. Rarely [ ] 3. Often [ ] 4. [Very] Often [ ]

13. Have you ever attended any educational programme or lecture on "douching"?
1. Yes [ ] 2. No [ ]

14. Have you heard of any substance that female students use for vaginal douching?
1. Yes [ ] 2. No [ ] if "No" please skip Question 15

15. Mention substances that female students douche with
a. _____
b. _____
c. _____

SECTION C: Knowledge of Vaginal Douching

Instruction: For each of these statements in the table below, indicate Yes or No

S/N	Variable	Yes	No	I don't Know
16.	Vaginal douching is an effective method of contraceptive			
17.	Vaginal douching improves sexual relationship			
18.	Vaginal douching prevents unwanted pregnancy			
19.	Vaginal douching protect against sexually transmitted infections			
20.	Vaginal douching keeps the vagina clean and fresh			
21.	Vaginal douching restore and tighten the vagina after delivery			
22.	Vaginal douching is an effective therapy for vaginal infections			
23.	Vaginal douching alleviate an itch after sex			
24.	Vaginal douching changes the pH of the vagina environment			
25.	Vaginal douching can cause reproductive tract infections			

26. What are the physical health effects of vaginal douching?
(a) _____
(b) _____
(c) _____

27. What are the social implications from vaginal douching?
(a) _____
(b) _____
(c) _____

SECTION D: Perceptions of respondents towards Vaginal Douching

Please give your opinion on the statements listed below

S/N	Variable	Yes	No	I don't Know
28	Vaginal douching is a culturally acceptable method through which women maintain the cleanliness of their vagina			

29.	Vaginal douching is a good method of keeping the vagina odourless			
30.	Vaginal douching helps to increase sexual pleasure			
31.	Vaginal douching helps to retain a relationship			
32.	Not douching promote vaginal itching and discharge			
33.	Vaginal douching helps ladies to feel fresh after menstrual period			
34.	Ladies who do not practice vaginal douching always have foul smell			
35.	Most men do not like ladies who do not practice vaginal douching			

SECTION E: Prevalence of vaginal douching

Instruction Please indicate your honest responses for the questions. BE REMINDED THAT YOUR RESPONSE WILL BE KEPT SECRET AND USED ONLY FOR THE PURPOSE OF RESEARCH.

36. Have you ever done vaginal douching before?
1. Yes [ ] 2. No [ ]

37. What substance(s) have you douched with? Please tick all that applies to you
1. Alum [ ] 2. Water and soap [ ] 3. Vinegar [ ]
4. Shampoo [ ] 5. Krest Bitter Lemon [ ] 6. Summer eve [ ]
7. Coca cola [ ] 8. Water only [ ] 9. Shower gel [ ]
10. Bath gel for genital organ [ ]
11. Others (Please Specify) _____

38. How old were you when you first douched? _____

39. How often do you douche?
1. More than once a day [ ] 2. Everyday [ ] 3. Once a week [ ]
4. Twice a week [ ] 5. Three to Five (3-5) times a week [ ]
6. Others (Please specify) _____

40. When last did you douche? _____
1. Today [ ] 2. Yesterday [ ] 3. Last week [ ]
4. A Fortnight ago [ ] 5. Last month [ ] 6. Others (Please specify) _____

41. What substance(s) did you last douche with? Please tick all that applies to you
1. Alum [ ] 2. Water and soap [ ] 3. Vinegar [ ]
4. Shampoo [ ] 5. Krest Bitter Lemon [ ] 6. Summer eve [ ]
7. Coca cola [ ] 8. Water only [ ] 9. Shower gel [ ]
10. Bath gel for genital organ [ ]
11. Others (Please Specify) _____

42. Where do you purchase your douching products? (Please specify) _____

43. How old were you when you first had your menstrual flow _____

44. Have you had any sexual intercourse before?
1. Yes [ ] 2. No [ ] If 'No' please, skip to Question 47

45. Age at first sexual intercourse (coitarche): _____

46. Have you ever douched as a result of influence of your sexual partner?
1. Yes [ ] 2. No [ ]

47. From whom did you learn douching practice? Please tick all that applies to you
1. Mother [ ] 2. Self [ ] 3. Husband/ dating partner [ ] 4. Male Friends [ ]
5. Female Friends [ ] 6. Movies [ ] 7. Book [ ] 8. Internet [ ]
9. Others (Please specify) _____

48. During which of these situations/circumstances have you ever performed vaginal douching?

a.	After sexual intercourse	1.Always	(2)Sometimes	3. Never [ ]
b.	During Shower	1.Always [ ]	2. Sometimes [ ]	3. Never [ ]
c.	During Ghusl (Ablution)	1.Always [ ]	2. Sometimes [ ]	3. Never [ ]
d.	After using the toilet	1. Always [ ]	2. Sometimes [ ]	3. Never [ ]
e	After Menstruation	[. Always [ ]	2. Sometimes [ ]	3.Never
f.	During Menstruation	1. Always [ ]	2. Sometimes [ ]	3.Never [ ]

Others Please specify _____

49. What factors influence your decision to practice douching? Please tick all that applies to you
1. To feel fresh [ ]
2. To alleviate an itch after sex [ ]
3. To prevent Pregnancy [ ]
4. To reduce vagina odour and discharge [ ]
5. To enhance sexual pleasure of vagina dryness, vaginal tightening or warmth [ ]
6. To prevent sexually transmitted infections [ ]
7. To cleanse the vagina before sexual intercourse [ ]
8. To cleanse the vagina after vaginal intercourse [ ]
9. To cleanse the vagina in between the act of sex [ ]

Others please specify _____

APPENDIX III

INSTITUTE FOR ADVANCED MEDICAL RESEARCH AND TRAINING (IAMRAT)
COLLEGE OF MEDICINE, UNIVERSITY OF IBADAN, IBADAN, NIGERIA
Director: Prof. A. Ogunniyi, [illegible]
Tel: 08023036583, 08028094173
E-mail: aogunniyi@comui.edu.ng

UI/UCH EC Registration Number: NHREC/05/01/2008a

NOTICE OF FULL APPROVAL AFTER FULL COMMITTEE REVIEW

Re: Experience of Vaginal Douching among Female undergraduates of the University of Ibadan, Nigeria

UI/UCH Ethics Committee assigned number: UI/EC/14/0126

Name of Principal Investigator: Regina E. Ejeide

Address of Principal Investigator: Department of Health Promotion & Education, College of Medicine, University of Ibadan, Ibadan

Date of receipt of valid application: 03/04/2014

Date of meeting when final determination on ethical approval was made: N/A

This is to inform you that the research described in the submitted protocol, the consent forms and other participant information materials have been reviewed and given full approval by the UI/UCH Ethics Committee

This approval dates from 08/09/2014 to 07/09/2015. If there is delay in starting the research please inform the UI/UCH Ethics Committee so that the dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. All informed consent forms used in this study must carry the UI/UCH EC assigned number and duration of UI/UCH EC approval of the study. It is expected that you submit your annual report as well as an annual request for the project renewal to the UI/UCH EC early in order to obtain renewal of your approval to avoid disruption of your research.

The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the UI/UCH EC. No changes are permitted in the research without prior approval by the UI/UCH EC except in circumstances outlined in the Code. The UI/UCH EC reserves the right to conduct compliance visit to your research site without previous notification

UI/UCH EC
08 SEP 2014
APPROVED
COLLEGE OF MEDICINE

Professor A. Ogunniyi
Director, IAMRAT
Chairman, UI/UCH Ethics Committee
E-mail: uiechairman@yahoo.com

APPENDIX III

INSTITUTE FOR ADVANCED MEDICAL RESEARCH AND TRAINING (IAMRAT)
COLLEGE OF MEDICINE, UNIVERSITY OF IBADAN, IBADAN, NIGERIA.

Director: Prof. A. Ogunniyi, B.Sc(Hons), MBChB, FMCP, FWACP, FRCP(Edin), FRCP(Lond)
Tel: 08023038583, 08033094173
E-mail: aogunniyi@comui.edu.ng

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UI/UCH EC
08 SEP 2014
APPROVED
COLLEGE OF MEDICINE, U.I.

Professor A. Ogunniyi
Director, IAMRAT
Chairman, UI/UCH Ethics Committee
Email: [redacted]@yahoo.com