

Research article

Reproductive Health: Reproductive Education Advocating Client Vaginal Health (REACH)

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Abstract

Evidence based research has shown bacterial vaginosis to be one of the most common vaginal disorders in women of childbearing age. The purpose of this pilot study was to identify sexual behaviors and vaginal health practices that could contribute to the incidence or recurrence of bacterial vaginosis. Participants (N=25) completed a self-administered questionnaire that evaluated sexual behaviors, vaginal health practices, and demographic information. Bacterial vaginosis is associated with high morbidity and increased rates of recurrence. It remains unclear whether BV recurrence is related to current antibiotic regimens failure to destroy BV-Associated Bacteria (BVAB), reinfections from sexual partners, intravaginal practices, or a combination of these factors. Sexually transmitted infections and adverse pregnancy outcomes have been associated with bacterial vaginosis. The pilot study results provided data that will help to decrease the incidence of initial and recurrent infections and increase awareness of intravaginal practices and the association with bacterial vaginosis.

Significance of the Problem

The prevalence of BV in the United States is estimated to be 21.2 million (29.2%) among women ages 14-49, [1]. Bacterial Vaginosis (BV) is a common gynecologic infection of the lower genital tract and has been associated with multiple gynecologic and obstetrical complications not limited to preterm delivery, pelvic inflammatory disease, and most recently increased risk of transmission of Human Immunodeficiency Virus (HIV) [1]. Because BV is one of the most common gynecological infections that affect women, it is important to understand the behavior and health practices that can be associated to the acquisition of the infection. It is important to implement guidelines for vaginal health regimens that will decrease the incidence of initial and

recurrent BV infections.

Bacterial vaginosis

The etiology of bacterial vaginosis across populations remains unclear [1-5]. Bacterial vaginosis is the term used to describe, "A disturbed vaginal microbiota dominated by mixed anaerobes, such as *Gardnerella species*, *Prevotella species*, and *Atopobium species* [4]. The major causative bacteria associated with BV, *Atopium vaginae* and *Gardnerella vaginalis*, have been identified, as well as the lack of hydrogen peroxide producing *Lactobacillus* in individuals diagnosed with BV [5]. The presence of these bacteria in the vagina leads to a replacement of lactobacilli and an increase in vaginal pH (2008) [6]. BV can occur and remit spontaneously, but most often presents as a chronic or recurrent disease [6]. There are two widely respected theories that exist to explain the existence and recurrence of BV, (1) lactobacilli are destroyed by environmental factors such as douching, frequent decrease in vaginal pH secondary to sexual intercourse or other factors or (2) lactobacilli are attached by bacteriophages resulting in an inability to recolonize in the vagina which facilitates anaerobic overgrowth [6]. Factors such as socioeconomic status, same sex relationships, multiple sex partners, vaginal douching, smoking, lack of condom use, and medications have been identified as factors that predispose women to bacterial vaginosis [1,5,7]. The prevalence of BV increases based on lifetime number of sexual partners [1]. There is a higher occurrence of BV in non-white women than in white women [1]. Women who have BV are at an increased risk for the development of infection with Human Immunodeficiency Virus (HIV), *herpes simplex virus*, *trichomonas vaginalis*, *Neisseria gonorrhoea*, and *chlamydia trachomatis* [4]. Sexual behaviors as well as vaginal health practices have been identified as possible factors that contribute to initial infection and reoccurring infections of BV [8]. However, extensive knowledge does not exist on vaginal health practices and

their association to BV.

Intravaginal cleansing and bacterial vaginosis diagnosis

IVP is the introduction of products inside the vagina for hygiene, health, or sexuality reasons and can be separated into two categories, intravaginal cleansing, or intravaginal insertion [8]. An association has been found between BV and intravaginal cleansing, new/multiple sexual partners, and unprotected vaginal [9]. BV can also occur in women who are not sexually active and has been associated with performing Intra Vaginal Practices (IVP) [10]. Studies have reported that intravaginal practices are common in women in the United States and can be associated with an increased risk of bacterial vaginosis [8,10].

Health Promotion Model

The Pender Health Promotion model (PHP) was utilized as a framework for the study. It defines health as a positive dynamic state, rather than the absence of disease [11]. Health promotion is aimed at increasing a client's level of well-being [11]. According to Pender's health promotion model, each person has unique characteristics and lived experiences that affect their behavior. Behaviors are learned within the community and family unit. As an example, intravaginal cleansing and vaginal health practices are learned behaviors that can be specific to culture [8]. This study examined behaviors and their association to self-efficacy, perceived benefits, perceived barriers to action, and their association with adapting positive health behaviors to improve vaginal health and decrease repeated incidences of vaginal infections. Vaginal health practices can be identified as individual characteristics and experiences that influence behavior and affect health promotion. Vaginal health practices can be related to Pender's model because when patients are educated about optimal vaginal health practices, the adaptation of healthy behaviors and maintenance can be cultivated and implemented.

Methods and Procedures

The sample for this study was a convenience sample of 25 women ages 18-45 who were clients at a private women's health clinic. Participants for the study were selected according to the following inclusion criteria: non-pregnant, complaints of vaginal discharge, vaginal burning, and vaginal itching, not currently on any antibiotics or receiving treatment for sexually transmitted infections. Screening for BV was done utilizing vaginal swab and diagnosed by Nugent criteria and DNA (Affirm) probe. The data was entered and analyzed using the SPSS program. The Reproductive Health Inventory (RHI) survey was used for data collection. The RHI consists of seven items to identify health behaviors and intravaginal practices that are associated with the acquisition of bacterial vaginosis. The RHI survey has seven items that are Likert scaled with responses labeled as yes, no, never, and not applicable. The researcher in consultation with a women's

health expert developed the RHI survey. The RHI survey items are based on an extensive review of the literature about screening for BV and pertinent criteria for the assessment of vaginal health. Content validity has been established for the RHI survey by an expert panel.

Study Results

The 25 study participants ages ranged from 18-22, with 14.3% of study participants ages 18-22, 47.6% ages 23-30, 28.6% ages 31-40, and 9.5% ages 41-45. Of those participating in the study, 42.9% completed high school, 47.6% were college graduates, and 9.5% were postgraduates. In regards to a history of unprotected sex, 92% of participants reported a history of unprotected sex and 8% reported no history of unprotected sex. For a history of more than one sexual partner, 44% of the participants reported yes to a history of more than one partner and 56% reported no, as to whether they had a history of more than one sexual partner. RHI survey intravaginal practices items participant responses were the following: monthly douching- 4% of participants reported yes, 72% reported no, and 24% reported never; the use of scented tampons or sanitary napkins 20% reported yes, 60% reported no, 16% reported never, and 4% reported not applicable; and for the RHI survey item regarding intravaginal cleansing with soap, 16% reported yes, 64% reported no, and 20% reported never; for the use of commercial products for intravaginal cleansing, 32% of study participants reported yes, 52% reported no, and 16% reported never. The participant's responses to the RHI survey item for a history of Sexually Transmitted Infections (STI) was 20% of study participants reported a history of STI, 56% reported a history of STI, 20% reported a history of STI, and 4% reported not applicable.

Cross Tabulations

Cross tabulations were done to examine and summarize the data from more than one source. When age was examined as a factor for a history of multiple sex partners women ages 31-40 reported more incidences of sexual partners (4) than any other age group. Women ages 23-30 reported the least amount of multiple sexual partner encounters. For an examination of sexual behaviors according to level of education, more college graduates (9) reported a history of unprotected sexual encounters than high school graduates (8) and postgraduates (2). Of those reporting a history of unprotected sexual encounters and multiple sex partners, women who completed college were three times more likely to have multiple sex partners than those who had completed high school, and six times more likely than post graduates.

Implications for Practice and Research

Pender's Health Promotion Model theoretical propositions can provide a basis for research related behaviors, and the seven major assumptions place emphasis of the active role of individuals must take in shaping and maintenance of healthy behaviors. Future research considerations for bacterial vaginosis may include

the association of IVP in patients with history of chronic BV, recurrent BV, and low efficacy of treatment. Researchers should also consider investigating the necessity of test of cure ten to fourteen days following completion of antibiotic therapy. The benefits of suppressive therapy in patients with history of recurrent BV should also be further examined. Analysis and synthesis of evidence-based research that focuses on current health practices and intervention methods for diagnosis, treatment, and prevention of BV are essential in the achievement of improving patient and population health outcomes. Studies should be conducted among diverse populations and at other types of health care settings to increase the body of evidence related to examine at risk behaviors and vaginal health practices and the association with BV. The increased prevalence of BV amongst African American women should be further examined to identify if there is a gap in knowledge amongst this population and to assess educational needs to decrease the incidence among diverse populations.

Conclusion

This pilot study examined vaginal health and sexual practices of women at a private woman's clinic. The results of this study indicate that vaginal health practices and sexual behavior could be associated to bacterial vaginosis. The study results indicate that education aimed at the prevention of bacterial vaginosis is needed. Strategies and interventions to decrease the prevalence of BV should be identified as a component of women's health programs. Increasing women's knowledge about vaginal health practices and sexual behaviors and the relationship to the occurrence of BV will likely aid to decrease incidences and the prevalence of BV.

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