

Women's Knowledge and Attitude Regarding Vaginal Yeast Infection

¹ *Asmaa Mohamed Abd El-Tawab*, ² *Entesar Fatouh Abd-Elmoneim*, ³ *Reda Mohamed Nabil Aboushady*
(1) Assistant Lecturer of Maternal and Newborn Health Nursing Bader University.
(2) Professor of Maternal and Newborn Health Nursing- Helwan University.
(3) Assist Professor of Maternal and Newborn Health Nursing - Cairo University.

Abstract

Background: Vaginal yeast infection is a common opportunistic vaginal infection primarily caused by *Candida albicans*. It ranks as the second most frequent vaginal infection in women. **Aim:** the current study aimed to assess women's knowledge and attitude regarding vaginal yeast infection. **Design:** a descriptive research design was used to achieve the aim of the study. **Setting:** the study was conducted at outpatient clinic in Fayoum general hospital, Egypt. **Sample:** Purposive sampling of 100 women was utilized in the present study. **Tools:** three tools were used for data collection. 1) A structured interviewing questionnaire, 2) Assessment of women's level of knowledge regarding vaginal yeast infection, and 3) Women's attitude regarding vaginal yeast infection. **Results:** the results of the current study revealed that 96% of the studied women had unsatisfactory level of knowledge regarding vaginal yeast infection and about 77% of them had a negative attitude regarding hygiene and personal habits to prevent vaginal yeast infection. **Conclusion:** the study concluded that the most of women had unsatisfactory level of knowledge regarding vaginal yeast infection, and negative attitude toward regarding vaginal yeast infection. **Recommendations:** health education regarding vaginal yeast infection to raise awareness and improve outcomes.

Keywords: *Attitude, Vaginal, Yeast infection, Knowledge, Women. Candidiasis, Vulvovaginal*

Introduction

Vaginal yeast infection is a major public health concern that affects 70–75% of women in the US over their lifetimes, resulting in 1.4 million outpatient visits yearly and a treatment cost of USD 368 million. One of the most frequent causes of visits to gynecologists and obstetricians is still vaginal yeast infection. Second only to bacterial infections in terms of causes of vaginal and vulva irritation are fungus infections (*Sarvtin & Kamali, 2023*). Worldwide, incidence of vaginal yeast infection, with a higher prevalence in women who visit primary care or gynecological clinics. Globally, estimates have the prevalence of vaginal yeast infection ranging from 5.3% to 26%, depending on the population and geographic area. Additionally, *Candida albicans*, a prevalent body flora, is responsible for between 85% and 95% of vaginal yeast infection. Besides burning and itching, the main symptoms are discomfort, irritation, dyspareunia, and dysuria. Along with achy, irritable, dyspareunia, dysuria, and fissures, other common symptoms include edema, increased vaginal discharge, and vulval and vaginal erythema. Vulval and vaginal erythema, fissures (*Satora et al., 2023*). The main causes of vaginal yeast infection are the use of oral contraceptives, hormone replacement treatment, sexual activity, diabetes mellitus (DM), sleep disturbances, and antibiotics. A person's lifestyle includes their eating habits, which include consuming large amounts of sweets, carbs, cola, and alcohol; smoking; drinking; maintaining personal cleanliness; and their clothing style (*Nsongmayi & Ambe., 2023*).

Raising awareness and enhancing women's attitudes, and behaviors regarding vaginal yeast infection necessitates raising their level of self-care awareness. Educating women and assisting them in learning skills and healthy habits that would enable them to exercise responsible self-care and prevent disease. Maintaining appropriate vaginal hygiene is one of the preventive steps to be taken. Avoid using oral contraceptives, antibiotics, and other medications needlessly. To enhance vaginal health, maintain a balanced, healthy diet. The vagina's acidity, which lowers its pH to 5.0–6.5, can be increased by using antibiotics or hygiene products (*Said., 2023*).

Helping women modify their lifestyles is a major responsibility of nursing. This entails changing to cotton underwear that fits more loosely, avoiding tight-fitting jeans or panty hose, wiping after using the restroom from front to back, and keeping the vaginal area dry, especially after a shower. Assist in modifying risk factors such as weight management, regular exercise, and stopping smoking. A balanced diet rich in fresh fruits and vegetables and low in junk food and sugary snacks is generally supportive of vaginal health (*Perry et al., 2023*).

Significance of the study:

A recent general study conducted in Egypt revealed a sharp rise in the prevalence of vaginal candidiasis. The prevalence of vaginal yeast infection in women of reproductive age is estimated to be between 70 and 75 percent. The chance of developing vaginal yeast infection was twice as high in women under 40 as in older women. Also, there was a four-fold increase in the probability of developing vaginal yeast infection among women's whose first sexual experience occurred before the age of 20. Twenty-five percent of women have vaginal *Candida* microbes (*Abdullah et al., 2020*). Worldwide, vaginal candidiasis is a prevalent ailment affecting women, with over 75% of women reporting one infection at some point in their lives and 40–45% reporting two or more infections. Men can also occasionally develop vaginal candidiasis. Pregnant women, those with compromised immune systems, and diabetics experience vaginal yeast infection more frequently and more severely (*Huang et al., 2023*). According to (*Abd-Elmoneen et al., 2020*), vaginal candidiasis is thought to be the most frequent cause of abnormal vaginal discharge in women of reproductive age. Thus, the results of this study underscored the need of paying more attention to women's vaginal health through health education regarding the significance of symptoms and infection recurrence prevention, by following suggested treatment protocols, and by abstaining from unsanitary behaviors that have been linked to vaginal health problems.

The aim of the study

The aim of the current study was to assess the women's knowledge and attitude regarding vaginal yeast infection. This aim was achieved through the following objectives:

- 1- Assess women's level of knowledge regarding vaginal yeast infection.
- 2- Assess women's attitude regarding vaginal yeast infection.

Research question:

- 1- What is the level of women's knowledge regarding vaginal yeast infection?
- 2- What is the level of women's attitude regarding vaginal yeast infection?

SUBJECT AND METHODS:**Research Design:**

A descriptive research design was used to achieve the aim of the study.

Setting:

The study was conducted at the outpatient clinic in Fayoum General Hospital.

Subjects (sampling):**Type of the sample:**

A purposive sample of 100 women was used to collect the data according to the following. **Inclusion criteria:** married women and willing to participate in the study. Women who are pregnant women were excluded from the current study.

Sample size: The estimated sample size is **100** women who visit at the previous mentioned setting, at confidence level 95% according to the following equation.

$$n = t^2 \times p \times (1-p) / m^2$$

n = required sample size

t = confidence level at 95% (standard value of 1.96).

p = estimated prevalence of vaginal yeast infection.

m = margin of error at 5% (standard value of 0.05)

Sampling technique: women were collected from hospital outpatient clinic according to the inclusion criteria till reach the determined sample size. After explanation and obtaining oral consent from the women.

Tools of data collection:

Three tools were used for data collection in the present study:

Tool (I): A structured interview questionnaire. Developed by researchers after extensive literature, it consists of two parts: **Part I: included data related to** demographic characteristics of the study sample as; age, residence, education level, occupation, family monthly income, smoking. **Part II: included data related to** obstetric history as; gravidity, parity, interval between pregnancy, contraceptive method used, and previous complications during contraceptive method used.

Tool (2): Women's knowledge regarding vaginal yeast infection assessment tool: This tool was designed by the researcher after extensive literature, it includes six questions covering topics such as the definition, causes, symptoms, and methods of prevention of vaginal yeast infection.

Scoring system: The scoring system for this tool assigns a score of (2) for a correct and complete answer, and (1) for a correct but incomplete answer. The tool consisted of six questions that were measured by giving subjects responses a score of (2) for Correct complete answer and (1) for the Correct incomplete answer. To determine the level of knowledge, a percentage score is calculated based on the total score obtained by the participants. If the percentage score is equal to or greater than 60% of the total score, it indicates **satisfactory** knowledge. On the other hand, if the percentage score is less than 60% of the total score, it indicates **unsatisfactory** knowledge.

Tool (3): Women's attitude regarding vaginal yeast infection assessment tool. This tool was developed by a researcher based on extensive literature review. It includes 14 questions focusing on hygiene and personal habits.

Scoring system: The scoring system for this tool assigns a score of (2) for items that are adequately done and a score of (1) for items that are not done. To determine the overall attitude, a percentage score is calculated based on the total score obtained by the participants. If the percentage score is equal to or greater than 60% of the total score (≥ 26 score), it indicates a **positive attitude**. However, if the percentage score is less than 60% of the total score, it indicates a **negative attitude**.

Tools validity and reliability:

The data collection tools were reviewed by a panel of three expert professors to ensure applicability, comprehensiveness, understanding and ease of implementation of the tools. Each of the experts was asked to examine tools for content coverage, relevance, clarity, wording, length, format, and overall appearance. Modifications were done according to the expert's comments and recommendations; minor modifications had been made such as rephrasing and rearrangements of some sentences such as the question of definition of vaginal yeast infection the

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answer was complete and incomplete then modified to correct and in correct. Testing reliability of the proposed tools was done statistically by Alpha Cronbach test which revealed that each of the two tools consisted of relatively homogenous items as indicated by the moderate to high reliability of each tool.

Ethical consideration:

The research approval was obtained from a scientific, ethical committee in the Faculty of Nursing, Helwan University before starting the study. The researcher was obtained oral consent from women. The researcher clarified the aim and objectives of the study to each woman. The researcher was assured anonymity and confidentiality of the subject's data. Women were informed that allowed to choose to participate or not in the study and that they have right to withdrawal from the study at any time.

II- Operational design

Pilot study:

The pilot study was carried out with 10% (10 women) of total sample at selective women to investigate the efficiency, the applicability and clarity of the tools. The women included in the pilot study were not excluded from the total study sample.

Field of work:

- This study was carried out at the Fayoum general hospital. The data collection process took place between the beginning of December 10, 2022, and the end of March 30, 2023.
- The researcher attended the outpatient clinic in Fayoum general hospital Saturday and Sunday of each week from 9:00 am to 1:00 p.m.
- The researcher introduced herself to the physician and the nurse in the outpatient clinic.
- The researcher met women when enter the outpatient clinic before the examination.
- At beginning of the interview, the researcher introduced herself to women and explained to the study sample the aim of the study and then the oral consent of the women was obtained.
- The researcher interviewed each woman individually in an outpatient clinic to fill tool (I) which consisted of two parts. 1st part includes questions related to women's demographic data; 2nd part includes questions used to assess obstetric history. The time taken to complete this data was 5-10 minutes.
- Then the researcher used tool (II) their questions used to assess the level of women's knowledge regarding vaginal yeast infection which consisted of six questions such as. (Definition, causes, symptoms, time of vaginal discharge increased, mode of transmission, method of prevention) The time taken to complete this data was 15-20 minutes.
- Then the researcher used tool (III) their questions used to assess the level of women's attitude regarding vaginal yeast infection. This tool is used about hygiene and personal habits.

Administrative design:

Official letters, including the title and aim of the study were issued from the Faculty of Nursing Helwan University, a letter which was issued from Ministry of health approval after ethics committee and submitted to the director of Fayoum General Hospital for conducting the study.

Statistical design:

Data was analyzed using the Statistical Package for Social Science (SPSS) version 22. Qualitative data was presented as numbers and percentages. Relations between different qualitative variables were tested using Chi-square. Test (X²) and Cochran's Q test.

RESULTS

Table (1) reveals that 48% of the studied women are in the age group of 25-30 year with the mean age (29.18±6.13), and 33% of them can read and write. Also, 71% of them are housewives. Moreover, 65% of them live in rural areas and 46% have enough monthly income. While 92% of them do not smoke.

Table (2) shows that 48% of the studied women were pregnant 2-3 times before, 57% of them had given birth 2-3 times before, and 46% had an interval between pregnancies of 2-3 years. Also, 56% of them did not have any previous complications during pregnancy. Moreover, 43% of them used an IUD, 40% used contraception for more than three years, and 43% did not suffer from any complications during use.

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Figure (1): reveals that (29%) of the studied women had information regarding vaginal yeast infection from their relatives, 27% from their friends, and 18% from nurses. Also, 10% of them had information from doctors and internet. While the remaining of them 6% from books.

Table (3) reveals that (94%) of the studied women did not know the correct answer about definition of vaginal yeast infection. Also, (90%) of them did not know the correct answer of causes and Color vaginal discharge regarding vaginal yeast infection. Furthermore, (95%, 93% and 86%) respectively did not know the correct answer of symptoms, method of prevention, and Consistency vaginal discharge regarding vaginal yeast infection. While (4%) of the studied women answered complete correct answer regarding definition and method of prevention of vaginal yeast infection.

Figure (2): reveals that (96%) of the studied women had unsatisfactory level of knowledge regarding vaginal yeast infection. While (4%) of them had a satisfactory level of knowledge.

Table (4): reveals that (90%, 88%, 69%, & 51%) respectively, of the studied women suffer from vaginal discharge before, taking antibiotics frequently during infection, their vaginal secretions accompanied by odor, and had complications of antibiotic medication. While (70%, 68%, 67%, & 65%) respectively, of them did not eat spicy food, did not use plenty perfumed douches, nor wear tight clothes, and did not wash external genital area from front to back. Also, 62% of them did not wear nylon underwear cloth nor suffer from any other infection such as urinary tract infection. In addition, (60%, 56% & 53%) respectively, of them did not use vaginal douching nor use a public restroom, did not wear cotton underwear cloth, and did not drink soda drinks.

Figure (3): reveals that (77%) of the studied women had a negative attitude regarding hygiene and personal habits to prevent vaginal yeast infection. While (23%) of them had a positive attitude.

Table (5) shows that, there was a high positive significant correlation between women's knowledge related vaginal yeast infection and their attitude toward hygiene and personal habits (p- value < 0.000) as when one variable increases the other variable also increase.

Table 1: Distribution of demographic characteristics of the studied women (n = 100)

Item	No	%
Age in years		
• < 20	5	5
• 20-25	20	20
• 25-30	48	48
• ≥ 35 years	27	27
Mean± SD 29.18±6.13		
Educational level		
• Cannot read and write	25	25
• Read and write	33	33
• Preparatory	23	23
• Primary school	5	5
• Secondary school	3	3
• High education	11	11
Working status		
• Working	29	29
• Housewife	71	71
Residence		
• Urban	35	35
• Rural	65	65
Monthly house income		
• Enough	46	46
• Not enough	52	52

• Enough and saving	2	2
Smoking		
• Yes	8	8
• No	92	92

Table 2: Distribution of the studied women according to their obstetrical history (n = 100).

Item	No	%
Number of gravidities		
• Primigravida	9	9
• 2 -3	48	48
• >3	43	43
Number of parities		
• Nullipara	4	4
• 2-3	57	57
• >3	39	39
Interval between pregnancy		
• 1-2	39	39
• 2-3	46	46
• >3	11	11
Previous complications during pregnancy		
• Yes	44	44
• No	56	56
Contraceptive method used		
• Not use	17	17
• Oral	40	40
• IUD	43	43
Duration (n=83)		
• 1-2	34	34
• 2-3	9	9
• >3	40	40
Previous complications during used contraceptive method		
• Yes	7	7
• No	43	43

Figure (1): Distribution of women’s regarding sources of information about vaginal yeast infection (n=100).

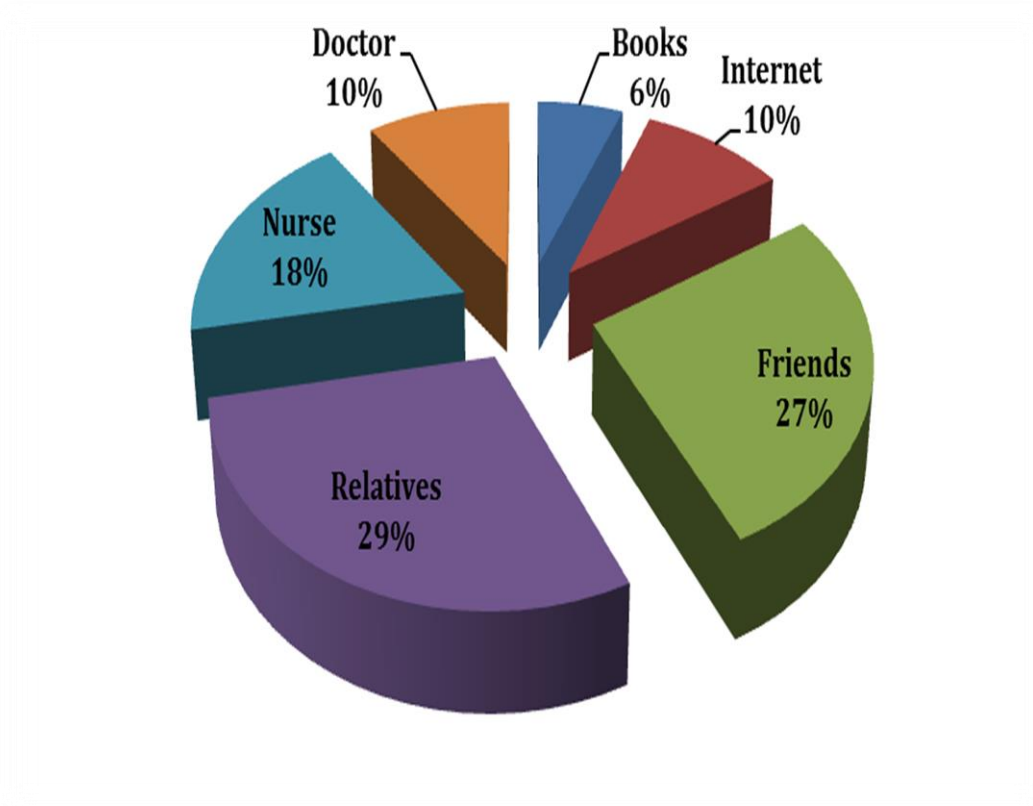


Table (3): Distribution of women’s knowledge regarding vaginal yeast infection (n=100).

Women’s knowledge regarding vaginal yeast infection	Correct complete answer		Correct Complete answer		I do not know	
	No	%	No	%	No	%
Definition of vaginal yeast infection	4	4	2	2	94	94
Causes of vaginal yeast infection	2	2	8	8	90	90
Color vaginal discharge regarding vaginal yeast infection	0	0	10	10	90	90
Consistency vaginal discharge regarding vaginal yeast infection	2	2	12	12	86	86
Symptoms regarding vaginal yeast infection	1	1	4	4	95	95
Method of prevention	4	4	3	3	93	93

Figure (2): Distribution of women’s knowledge categories about vaginal yeast infection (n=100).

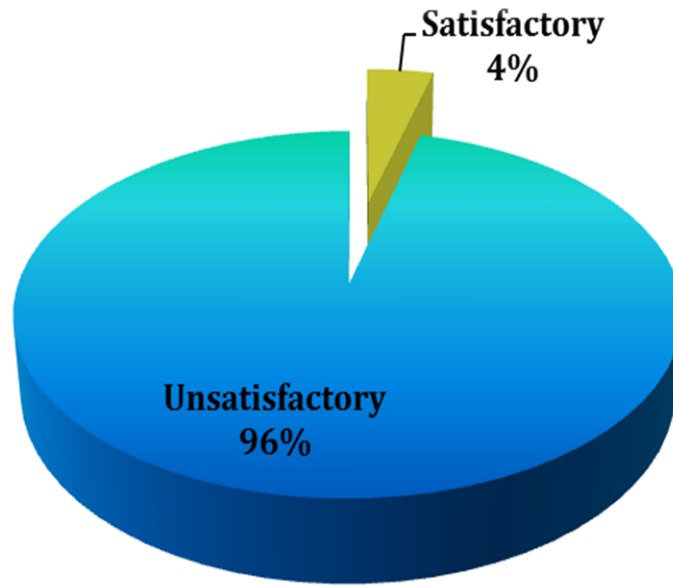


Table (4): Distribution of women’s attitude regarding hygiene and personal habits (n=100).

Women’s Attitude regarding Vaginal yeast infection	Yes		No	
	No	%	No	%
Are you suffering from vaginal discharge?	90	90	10	10
Having odors coming from your vaginal secretions?	69	69	31	31
Are you take antibiotics frequently during infection with vaginal secretions?	88	88	12	12
Do you experience complications-related antibiotic?	51	51	49	49
Are you eating spicy food?	30	30	70	70
Are you a cola or soda drinks?	47	47	53	53
Are you suffering from any other infection such as urinary tract	38	38	62	62
Do you wear cotton underwear cloth	46	46	54	54
Are you think the best method to wash external genital area from front to back?	35	35	65	65
Do you use vaginal douching?	40	40	60	60
Do you wear nylon underwear cloth?	38	38	62	62
Do you wear tight clothes?	33	33	67	67
Do you use plenty perfumed douches?	32	32	68	68
Do you use a public restroom?	44	44	56	56

Figure (3): Distribution of women’s attitude categories about vaginal yeast infection (n=100).

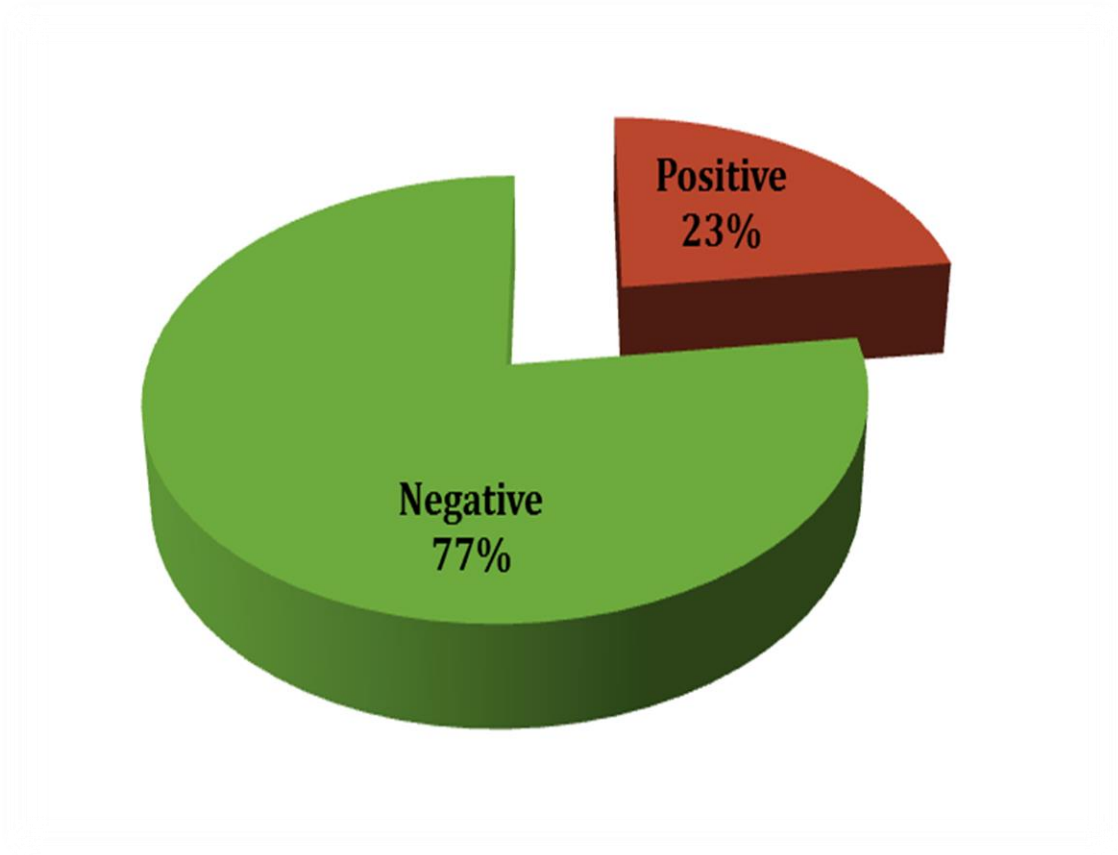


Table (5): Correlation between total women’s knowledge related vaginal yeast infection and their total attitude toward hygiene and personal habit.

	Total women’s attitude		
	Pearson Correlation	p- value	Sig.
Total women’s knowledge	0.373	0.000**	HS

Using: Pearson correlation (p-value >0.05 NS; *p-value <0.05 S; **p-value <0.01 HS)

DISCUSSION

Vaginal yeast infection is extremely frequent in reproductive age. About two out of every three women have experienced some form of infection at some point in their life. The primary risk factor for yeast infection is the use of antibiotics, which eliminate the healthy *Lactobacillus* bacteria that make up a normal vaginal microbiome. Diabetes, immunosuppressive diseases, genetic predispositions, glucocorticoid use, oral contraceptive use, and hormone replacement therapy are other prominent predisposing factors (*Wang et al. (2023)*). Self-care in health promotion and lifestyle change plays a critical role in management of any infection so; improving knowledge and awareness can affect individuals' attitude, change behavior and their attitude (*Arief & Hasab. (2021)*). So, this research was conducted to assess Knowledge and attitude regarding vaginal yeast infection among women attending outpatient clinics.

The current study's findings showed that, the mean age of the study sample was 29.18 ± 6.13 years old, nearly half of the women were between the ages of 20 and 30 years. Furthermore, a significant number of women in the study were living in rural regions, with approximately one quarter of them lacking basic literacy skills. Additionally, less than three quarter were housewives. These findings align closely with a previous investigation conducted by *Said & Elbana. (2019)* titled "Education Intervention Guideline on Knowledge and Self-Care Practice for Women with Vulvovaginitis." In their study, the authors observed a similar trend, where over half of the women fell within the age range of 20 to 30 years, with an average age of 24.68 ± 5.38 years.

These findings are consistent with a study conducted by *Sayed et al. (2020)* titled "Effect of Implementing Nursing Intervention Guidelines on Recurrent Vaginitis Among Reproductive Age Women." The study revealed that over seventy-five percent of women in the sample resided in rural areas. Moreover, less than seventy-five percent of the women were stay-at-home mothers, and a majority of them faced financial constraints with insufficient monthly income. This economic situation may be linked to lower socioeconomic status, which is known to be associated with a higher incidence of vulvovaginal candida. Factors such as inadequate hygiene practices, compromised immune system, and insufficient nutritional intake could contribute to this connection. The current results disagree with the study done by *Gour. (2022)*, to evaluate "Knowledge Regarding Vaginal Candidiasis". They showed that the age group from 16 to 19 years of adolescent girls over the third live in rural areas.

The current study's results revealed that about one-third of the women had a gravidity ranging from one to two, with nearly two-quarters having one to two parities. Additionally, the majority of the women used oral pills and intrauterine devices (IUDs) as forms of contraception. These findings are consistent with a study conducted by *Jang et al. (2019)* in Korea, titled "Vaginal lactobacilli inhibit growth and hyphae formation of *Candida albicans*," where more than two-thirds of the women were multigravidas, nearly half were multiparas, and a significant portion used pills for contraception. This observation may help elucidate why hormonal contraception emerged as the most commonly employed method of birth control, as hormonal imbalances are often cited as a primary cause of vaginal yeast infections in many women.

These findings agree with a survey by *Abd El Atti et al. (2019)* entitled "Prevalence of aerobic bacterial vaginosis among chronic copper T380 intrauterine device users". They revealed data indicating that most women were utilizing hormonal IUDs. It was previously proposed that progesterone and estrogen might be employed in contraceptives to raise vaginal glycogen levels and increase their susceptibility to lactobacilli.

The findings of the present study reveal that over ninety percent of women lacked satisfactory knowledge regarding the definition, causes, color, and consistency of vaginal discharge in instances of vaginal yeast infection. This aligns with the results of a study conducted by *Nyirjesy et al. (2022)* titled "A review of the evidence for the 2021 Centers for Disease Control and Prevention of Sexually Transmitted Infections Treatment Guidelines: vaginal yeast infection." The research indicates that a significant portion of women provide inaccurate information.

These findings are consistent with a study conducted by *Gudia et al. (2019)* titled "Effect of an instructional program on knowledge Regarding Vulvovaginal Candidiasis among female university students" found that high prevalence of

incorrect knowledge among women. also aligns with the current study's findings. *Fatuoh et al. (2023)* in their study, "Effectiveness of Nursing Intervention Protocol on Recurrence of Vulvovaginal Candidiasis Infection Associated

Pregnancy," reported a significant improvement in women's knowledge and health behaviors. These positive outcomes may be due to successful implementation of a health education program contributed to an enhanced level of knowledge among the women under study.

The findings of the current study indicate that approximately twenty percent of the women surveyed acquired information from their relatives, while one-third obtained it from friends, and less than twenty-five percent from nurses. These outcomes are consistent with a study conducted by *Murad. (2019)*, titled "Awareness regarding Vaginal Candidiasis among Female Nursing Students at King Abdul-Aziz University," which reported that the internet was the primary source of knowledge for women with vulvovaginal candidiasis. However, these results diverge from a study conducted by *Elizabeth (2021)*, where eighty percent of participants identified friends and family as the primary sources of information. The prevalent reliance on the internet for knowledge may raise concerns about the anonymity of information and may contribute to the observed shortcomings in the quality of healthcare professionals.

These results similar with the study done by *Calik et al., (2020)* which entitled "Genital Hygiene Behaviors of Women and Their Effect on Vaginal Infections" who showed that, vaginal infection has become a serious vulvovaginal candidiasis, which is common in both developed and developing countries. The factors that cause women vaginal infections vary widely. The closeness of the urethra, vagina, and anus to each other is the most important factor in the susceptibility to vaginal yeast infection, and certain factors will increase the risk of its occurrence.

The current study revealed that, the majority of women eat spicy food more than two-quarters of them. More than half of women drink cola or soda. These finding agree with *Nyirjesy et al. (2019)*, at their study entitled "Vulvovaginal symptoms and Candida colonization in women with type 2 diabetes mellitus treated with canagliflozin, a sodium glucose co-transporter 2 inhibitor" observed that eating sugary meals and drinks daily may increase women's risk of developing vaginal yeast infection.

Regarding women's attitudes toward vaginal yeast infections, the current survey reveals that approximately fifty percent of them have adopted the practice of wearing nylon underwear. This finding is consistent with a study conducted by *Demirağ et al. (2020)* titled "Analyzing the Relationship Between Genital Hygiene Behaviors in Women and Urinary Tract Infection," which suggests that synthetic or nylon underwear may reduce the risk of vaginal infection. However, it's important to note that the perineum can remain wet when wearing synthetic materials, making it more susceptible to yeast infections, as nylon and synthetic underwear do not absorb sweat as effectively as cotton does.

These results supported with the study done by *Ruiz et al. (2019)* which entitled "Daily genital cares of female gynecologists" in Brasileira, showed that the majority of women who wear underwear follow the trend where the material is unable to absorb perspiration, with at least half of those surveyed wearing tight pants. Making nylon and synthetic lingerie more appealing is a business trend, particularly for younger ladies. The findings of this study may help to explain why women who wear synthetic underwear are more likely to get vaginal yeast infections because the material does not absorb moisture, keeping the perineum wet and increasing the risk of infection. Also, this result agreed with previous research findings *Felix et al. (2019)*, which entitled "Evaluation of Vulvovaginitis and Hygiene Habits of Women Attended in Primary Health Care Units of the Family" in at the Units of Primary Attention to Family Health in a municipality in the interior of Brazil". They reported that women should use precaution when selecting the type of fabric, they wear on every day since nylon absorbs less sweat than cotton underwear, keeps the crotch damp, and increases the risk of vaginal infections. Because cotton is permeable and permits air to circulate around the external genitalia, it is preferred above synthetic materials for underwear.

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The findings of the current study revealed that, the more than three-quarter of the women taken antibiotics frequently during infection without physician order. These results agree with the study done by *Abd El-Razek et al. (2016)* which entitled "Efficacy of Sodium Bicarbonate in Early Management and Reduce Vaginal Yeast Infection among Women in Jordan". They revealed that thirty percent of women using prescribed antibiotics had a high risk of developing a candida infection in their vagina. This could be explained by the fact that female users of antibiotics reported that using them raised their likelihood of getting a vaginal candida infection. Since candida is a yeast infection rather than a bacterial illness, antibiotics may kill the common, harmless bacteria in the vagina that aid in defense against yeast infections. However, medications will not eradicate the infection directly.

The study's findings revealed that nearly two-thirds of women incorrectly wash the external genital area from back to front, while one quarter answered correctly regarding the proper front-to-back washing technique. These results are consistent with a study conducted by *Mufida et al. (2023)* titled "Knowledge Analysis of Women of Childbearing Age (15-49 Years) about Personality Hygiene with the Incident of Vaginal Discharge" in Indonesia, which found that many women had the incorrect habit of washing the vagina improperly. The correct technique is washing from front to back. Additionally, *Giraldo1. (2019)* conducted a study on "Daily genital cares of female gynecologists: a descriptive study in Brazil," revealing that over half of the interviewed women lacked the habit of washing the vulva properly, with more than one-quarter washing from anus to vagina.

The findings of the current study regarding the use of perfumed douches and their potential impact on vaginal infections showed that more than two-quarters of women reported using plenty of perfumed douches. These results are consistent with a study by *Holdcroft et al. (2023)* titled "The Vaginal Microbiome in Health and Disease: What Role Do Common Intimate Hygiene Practices Play," which reported that over half of women have used vaginal wipes, and more than half have used sprays. This observation aligns with *Na et al. (2019)* findings in their study on "evaluating risk factors for candida infection of the genital tract in the tropics," indicating an association between vaginal douching and the recurrence of vaginal yeast infections. This association is attributed to the fact that vaginal douching not only eliminates harmful bacteria but also washes away the natural protective lining of the vagina. Consequently, women become more susceptible to yeast and other vaginal infections, and the introduction of substances during douching may lead to allergic reactions and alter the pH balance (acidity) of the vagina.

Regarding the overall attitude toward vaginal yeast infection, the study revealed that more than three-quarters of the women exhibited a negative attitude toward hygiene and personal habits aimed at preventing vaginal yeast infection, while less than one-quarter demonstrated a positive attitude. Moreover, a highly statistically significant correlation was found between the total scores of women's knowledge and their total scores of attitudes. These findings align with *Ekpenyong et al. (2021)*, who, in their study on "Determining Recurrent Vulvovaginal Candidiasis among Young Women in Southeastern Nigeria: The Role of Lifestyle and Health-care Practices," identified a significant correlation between women's knowledge, certain lifestyle habits, and their attitudes toward healthcare, impacting the incidence of vulvovaginal candidiasis among young women in southeastern Nigeria.

The study's results also highlighted an extremely statistically significant correlation between women's overall attitudes and knowledge. This emphasizes the pivotal role that education plays in promoting personal health habits. Furthermore, the correlation between women's higher risk of infection and their level of knowledge was also confirmed by the results. Finally, from the researcher's point of view, improvement of total knowledge and total attitude rendered to nursing education health education provided.

CONCLUSION

The study's findings indicate that a significant majority of women possessed an unsatisfactory level of knowledge concerning vaginal yeast infection. Additionally, over three-quarters of them exhibited a negative attitude toward this health condition.

RECOMMENDATIONS

In the light of the finding of this study, the following recommendations are suggested.

- Increase awareness of women about healthy practice to prevent recurrence of vaginal yeast infection through educational program in outpatient clinics.
- Instructional guidelines about vaginal yeast infection and healthy attitude toward vaginal health should be available for women in obstetrics and gynecology outpatient clinic.

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