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FACTORS ASSOCIATED WITH VAGINAL CANDIDIASIS AMONG PREGNANT WOMEN AT KAWAALA HEALTH CENTRE IV, KAMPALA DISTRICT. A CROSS-SECTIONAL DESCRIPTIVE STUDY.

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Abstract

Introduction:

Vaginal candidiasis refers to a fungal infection that causes irritation, discharge, and intense itchiness of the vagina. This study assessed the factors associated with Vaginal Candidiasis among pregnant women at Kawaala Health Centre IV, Kampala district while specifically seeking to assess the knowledge on vaginal candidiasis health-seeking habits associated with vaginal candidiasis among pregnant women.

Methodology:

The study adopted a cross-sectional and descriptive research design with both qualitative and quantitative approaches where a pretested questionnaire designed based on the specific objectives was used to collect data.

Findings:

The majority 55% were between 26-33 years, marital status, the majority 50% of the respondents were cohabiting, 50% of the respondents had attained a primary level of education, religion, Catholic-dominated 51%, majority 78% of respondents had ever heard about vaginal candidiasis, majority 63% of respondents knew that they had vaginal candidiasis after being tested in the hospital, majority 62% of had ever heard about vaginal candidiasis testing, Majority 56% of respondents revealed that they knew the health seeking habits associated with vaginal candidiasis and Majority 54%of respondents reported that consultation with a general practitioner was the health seeking habits they knew.

Conclusion:

The study therefore concluded that more than 70%) of the respondents had ever heard about vaginal candidiasis, some of the Health seeking habits associated with vaginal candidiasis among pregnant women such other after being tested in the hospital and by observing signs and symptoms. This indicates that the respondents had a good awareness of health-seeking habits associated with vaginal candidiasis among pregnant women.

Recommendations:

The government should employ more health workers such that the majority on go for outreach services in different areas so that the sensitize women about vaginal candidiasis among pregnant women. Its complications and how they can avoid it services.

Keywords: Vaginal candidiasis, candida albicans, pregnant women, Submitted: 2023-04-28 Accepted: 2023-07-29

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1. Background.

According to Farr et al 2021, candida infections in the vaginal area are frequently referred to as "Vulvovaginal candidosis" (VVC) or "Candida vaginitis." Infection of the estrogenic vagina and the vestibulum that can spread to the outside of the labia minora, the labia majora, and the intercrural region is defined as vulvovaginal candidosis (Disha, T., & Haque, F. (2022)).

After bacterial vaginosis, it is considered the 2nd most common among many causes of vaginitis. It is produced most often by the overabundance of an opportunistic pathogenic yeast, Candida albicans (approximately 90%), which is a common member of the vaginal flora. Almost 20 to 30% of healthy asymptomatic women may have this yeast within their vaginal tracts at any moment in their lifetime if tested by culture, but more than 60%, if tested by NAAT methods. Candida species cause VVC infection when the balance between the host and colonizing yeast gets temporarily disturbed (Disha, T., & Haque, F. 2022). Based on episodic frequency, candida vaginitis can be either sporadic or recurrent (Disha, T., & Haque, F. 2022). The vaginal pH is usually normal and budding yeast cells, and pseudohyphae may be seen on a wet mount (Nnadi, 2017). Asymptomatic prevalence has been reported in 10% of women. VVC is most often caused by Candida albicans, however, other species of Candida such as Candida glabrata, Candida parapsilosis, and Candida tropicalis are emerging. With the introduction of antifungal agents, the causes of Candida infections shifted from complete predominance of Candida albicans to the common involvement of non-albicans species above (Apalata, et al, 2014)

A study carried out in Mysore, South India indicated that Candida was detected in 885/2528 (35%) vaginal specimens tested on culture. Of the 885, 180 (20%) satisfied the case definition for diagnosis of vulvovaginal candidiasis, while the remaining 705 (80%) were considered asymptomatic infections (Rathod, et al, 2015). About 75% of women have at least one vaginal yeast infection at some point in their lives while nearly half have at least twice (womenshealth.gov, 2014). About 5% have more than three infections in a single year.

In a study in Kenya, a report by Nelson, Wanjiru, and Margaret, (2013), showed a prevalence of 42.7% of vaginal candidiasis in pregnant women attending the antenatal clinic of Thika District Hospital was reported. This was probably due to suppression of the immune system due to the pregnancy as it is among the contributing factors of vaginal candidiasis. The use of contraceptives by the women before they got pregnant and the misuse of antimicrobial agents (antibiotics and antifungal agents) leads to the destruction of normal flora (bacteria) resulting in a reduction of vaginal immunity could have also contributed to the increase in in the prevalence of the infection (Nelson. M, Wanjiru W & Muturi W.M, 2013). A similar finding was reported by Feyi and Amadi, (2016), in Tanzania where they reported a prevalence of 42.9% of the infection in pregnant women.

The frequency of vaginal candidiasis was high within different age ranges of the pregnant women and was observed within the age ranges 26 - 35 years being 60% (Nelson. M, Wanjiru W & Muturi W.M, 2013). The infection was at a higher frequency in this age group than in the other age groups because women in this age group are likely to use drugs indiscriminately and use contraceptives to prevent pregnancy (Nelson. M, Wanjiru W & Muturi W.M, 2013). These contributed to the high frequency of the infection in this age group. The observation in this study is consistent with reports of other workers (Sehgal, 2019).

The prevalence of vulvovaginal candidiasis (VVC) to be 45.6%. Another study by Waikhom, et al (2020), showed that of the 176 subjects recruited in the study, 54 were confirmed to have VVC, resulting in a prevalence rate of 30.7% among the participants. The highest frequency of VVC in our study was recorded in pregnant women in their third trimester (57.4%).

This study aimed to determine the factors as-

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sociated with vaginal candidiasis among pregnant women.

2. METHODOLOGY.

2.1. Study Design.

A cross-sectional descriptive study design was employed in this project where a small sample size of 60 clients' samples was studied and findings were taken to represent a wider picture of the situation at Kawaala health centre IV.

2.2. Study area.

This research project was done in January 2023 from Kawaala health center IV. Kawaala is bordered by Nabweru to the north, Kazo to the northeast, Makerere to the east, Naakulabye to the south, Kasubi to the southwest, and Namungoona to the west. This is approximately 5 kilometers (3.1 mi), by road, north of Kampala's central business district. The coordinates of Kawaala are 0°20'24.0"N, 32°33'00.0"E (Latitude:0.3400; Longitude:32.5500). This health center offers services in most medical and surgical for mainly antenatal mothers, Immunizations in addition to dentistry, emergency medicine, and paediatrics. It is under KCCA health centers and it is managed by the government of Uganda.

2.3. Study population.

The study targeted women of reproductive age (18-49) years, who will come to the health center for the health services at Kawaala Health Centre IV.

2.4. Sample size determination.

Determined using the formula for simple random sampling using single proportions given by:

(Kish Leslie, 1965)

Where;

n = sample size

z= standard deviation usually set at 1.96 p= unknown characteristics of the study population usually 50%, thus 0.5 d= degree of inaccuracy by researchers, in this case it is 0.1265

q= 1-p

= 1-0.5 = 0.5

$n= \{(1.96)^2 \times 0.5\} \times \{0.5/ (0.1265)^2\}$

n= 3.8416 ⊠.25/0.01600225

n= 0.9604/0.016

n = 60.025

n =60 respondents

It is based on the formula by Keish Leslie, the sample size required was equal to 60 respondents.

2.5. Sampling technique.

The sampling technique was a simple random sampling which was used to select the study respondents who were women of reproductive age (18-49) years attending Kawaala Health Centre IV. On each day a sample was drawn from the number of women who will come to the facility and who satisfied the above criteria.

2.6. Sampling procedure.

Inclusion and exclusion criteria were used The study included women of reproductive age in Kawaala Health Centre IV, women within the specified age group, women with the ability to answer appropriately, and women who would have consented to the study. The study excluded women who had less capacity or inability to answer appropriately, women who want to be paid to answer, women who had not consented, and young women of less than 18yrs of age and those above 50 years.

2.7. Data collection methods.

The researcher used questionnaires and interview schedules, to collect data with the help of a trained research assistant. The questionnaire was self-administered and involved both open and closed questions that were aimed at assessing the factors associated with vulvovaginal candidiasis in Kawaala Health Centre IV.

2.8. Data collection tools.

The researcher used questionnaires and interview schedules, to collect data with the help of a trained research assistant. The questionnaire was self-administered and involved both open and closed questions aimed at assessing the factors associated with vaginal candidiasis in Kawaala Health Centre IV.

2.9. Data collection procedures.

During data collection, a self-administered questionnaire was used for the literate, and an interviewer's schedule for the illiterate. The purpose of the research was explained to the respondents for their maximum cooperation. Data collection took 2 weeks thus a total of 6 respondents was examined each day for a total of 10 days. The researcher used the research assistants to help him in collecting data, make the interviewer's schedule and the researcher administered questionnaires to the respondents.

2.10. Study of variables.

The study addressed both dependent and independent variables.

2.10.1. Dependent variable.

The dependent variable was factors associated with Vaginal Candidiasis among pregnant women

2.10.2. Independent variable.

Independent variables, these described factors that were assumed to cause the problem under study which included, knowledge, and health-seeking habits associated with vaginal candidiasis among pregnant women at Kawaala Health Centre IV.

2.11. Quality control of results.

To ensure the reliability and validity of the study questionnaire, the study needed to be conducted in a similar area with similar characteristics to enable the instruments to be redesigned if need be. The pre-testing was therefore in a hospital with similar environmental features. The hospital which was identified with similar characteristics was Mulago National referral hospital. Reliability was ensured by including many similar items on a measure, by testing a diverse sample of individuals, and by using the testing procedures. The questionnaire was pre-tested with 15 individuals randomly selected from different study areas. The interviews were conducted with these individuals and determined whether there was any need for the questionnaire format. Based on their comments, changes were made to the questionnaire to correct any wording and increase reliability. The data from the pilot study will not be included in the final report. Validity was assessed through content and construct validity. Content validity was defined as a measure of the degree to which data collected using a particular instrument represents a specific domain of a particular concept. Content validity was established through an extensive process of item selection and refinement in the development of the instrument. The content validity was extensively pre-tested with questionnaires responded to in another hospital with similar characteristics.

2.12. Data analysis and presentation.

Qualitative data were collected from women of reproductive age (18-49) years at Kawaala Health Centre IV. Qualitative data was analyzed for content analysis. Data was then presented in frequency distribution tables, graphs, and charts. The quantitative data in this study were managed and analyzed using descriptive statistics using Microsoft Excel. Descriptive statistics include means, standard deviations, frequency, percentages, and cross-tabulation of profile sample characteristics and major patterns.

2.13. Ethical consideration.

Each woman was told the purpose of the interview to make her comfortable with the process. The researcher requested the respondents to cooperate for the good of their health. Respondents were assured that the information was kept confidential and that a consent form was issued to them by the researcher to avoid breaching ethical considerations in the entire research process.

3. RESULTS FINDINGS.

3.1. Socio Demographic Characteristics of the respondent.

According to the findings in table 1, it revealed that the majority 33(55%) were between 26-33 years while the minority 4(6%) were aged 42-49 years. In regards to marital status , the majority 30(50%) of the respondents were cohabiting while the separated were the minority 3(4%).Most

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Table 1: Socio Demographic Characteristics of the respondents (n=60)

Variable		Frequency	Percentages (%)
Age	18-25 years	9	15
	26-33 years	33	55
	34-41 years	14	23
	42-49 years	4	6
Marital status	Single	4	6
	cohabiting	30	50
	Married	23	38
	Separated	3	4
	Widowed	0	0
Level of education	No formal education	12	20
	Primary education	30	50
	Secondary education	11	18
	Tertiary/ University	7	12
	others	0	0
Religion	Catholic	31	51
	Anglican	7	12
	Moslem	17	29
	Born again	5	8
Occupation	House wife	31	51
	Business woman	7	12
	Civil servant	14	24
	Student	5	8
	Others	3	5

30(50%) of the respondents had attained primary level of education while the least 7(12%) had attained tertiary/ education. Regarding religion, Catholic dominated 31(51%) while Born again were the least 5(8%) and More than half 31(51%) of the respondents were housewives whereas minority 8(8%) of respondents were others.

3.2. Knowledge on vaginal candidiasis among pregnant women.

Figure 1 shows that majority 47(78%) of respondents had ever heard about vaginal candidiasis while the minority 13(22%) had never heard about vaginal candidiasis.

Results from table 2 shows that majority 38(63%) of respondents knew that they had vaginal candidiasis after being tested in the hospital while the minority 10(17%) don't know.

According to figure 2 majority 38(62%) of had ever heard about vaginal candidiasis testing while the minority 22(37%) had never heard about vaginal candidiasis testing.

Table 3 shows that majority 39(65%) of respondents revealed that health facility was their source of information about vaginal candidiasis while the minority 3(5%) reported their source of information as groups.

3.3. Health seeking habits associated with vaginal candidiasis among pregnant women.

Results from figure 3, the majority 34(56%) of respondents revealed that they knew the health seeking habits associated with vaginal candidiasis the minority 22(44%) don't know the health seeking habits associated with vaginal candidiasis.

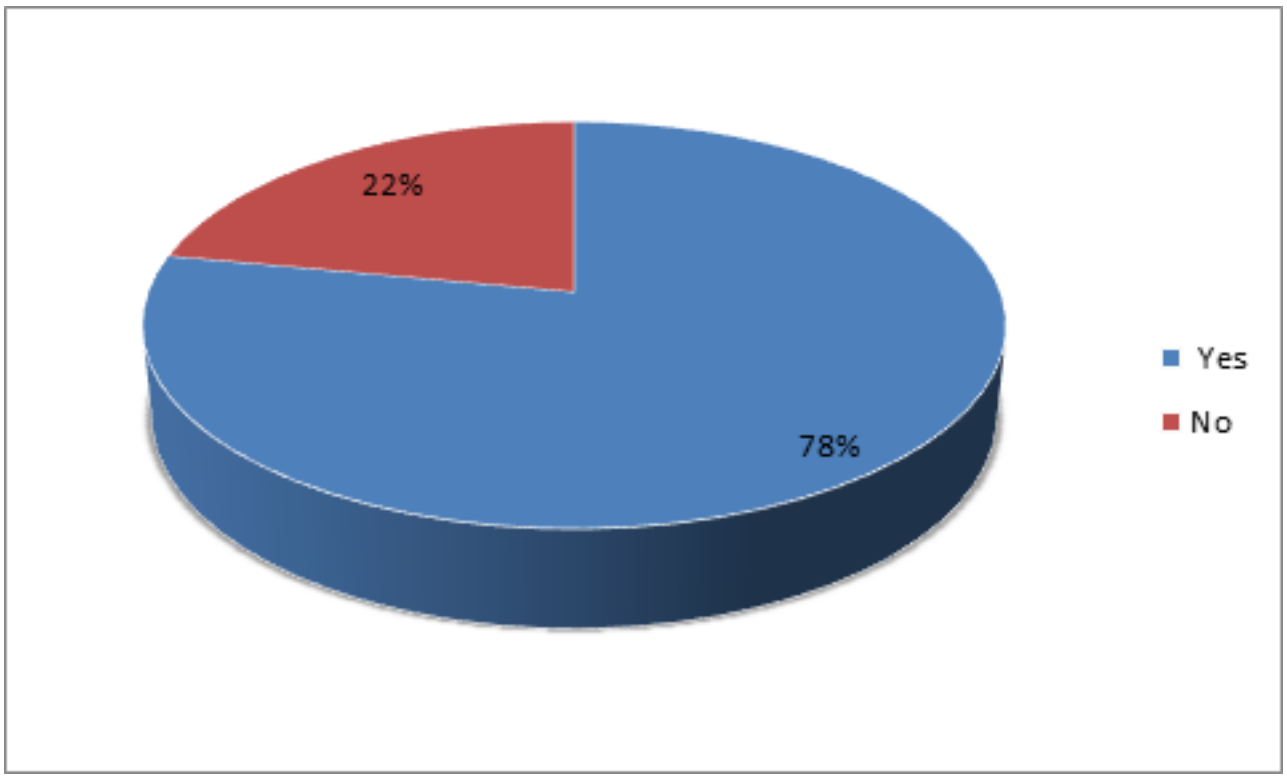

Figure 1: Distribution of respondents by whether ever heard about vaginal candidiasis (n=60)

Table 2: Distribution of respondents by how a woman know that she has vaginal candidiasis (n=60)

Responses	**Frequency(F)**	**Percentages (%)**
After being tested in the hospital	38	63
By observing signs and symptoms	12	20
Don't know	10	17
Total	**60**	**100**

Table 3: Distribution of respondents by the source of information (n=60)

Responses	**Frequency(F)**	**Percentages (%)**
Health facility	39	65
Friends	5	8
Media	13	22
Groups	3	5
Total	**60**	**100**

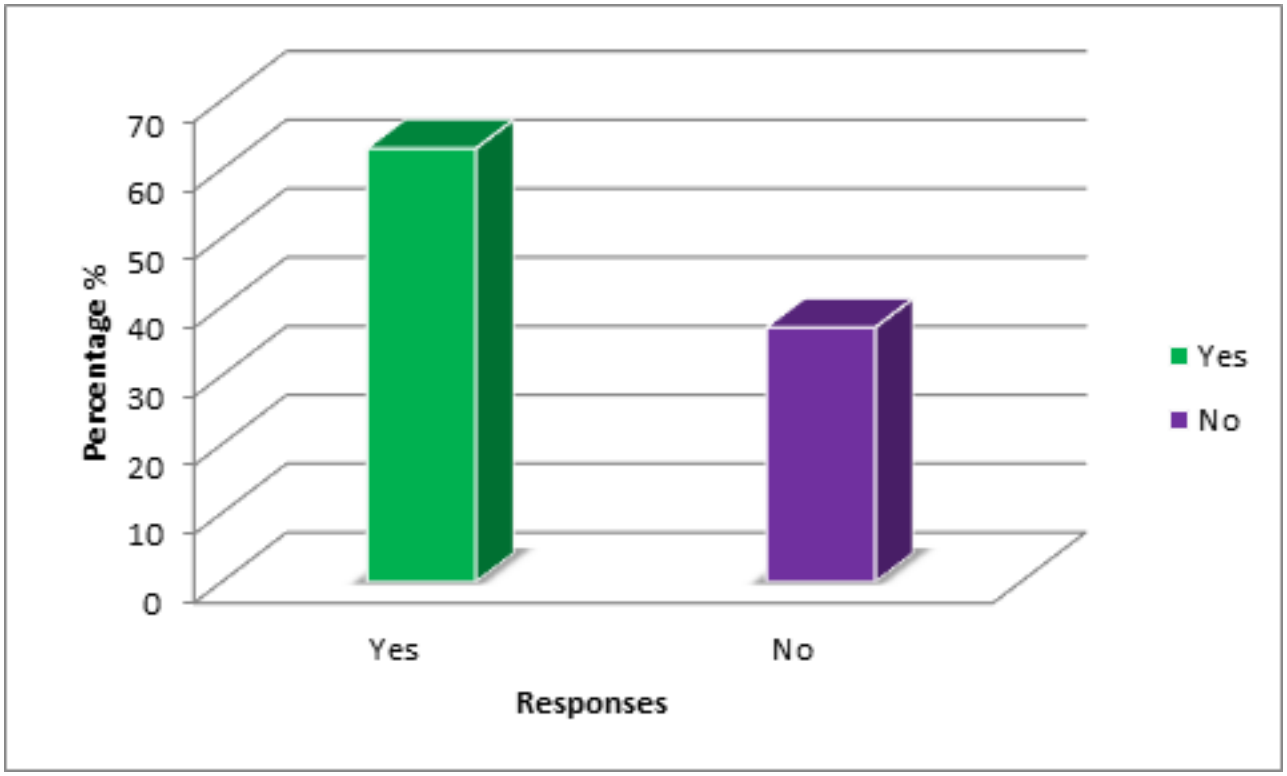

Figure 2: Distribution of respondents by whether ever heard about vaginal candidiasis testing (n=60)

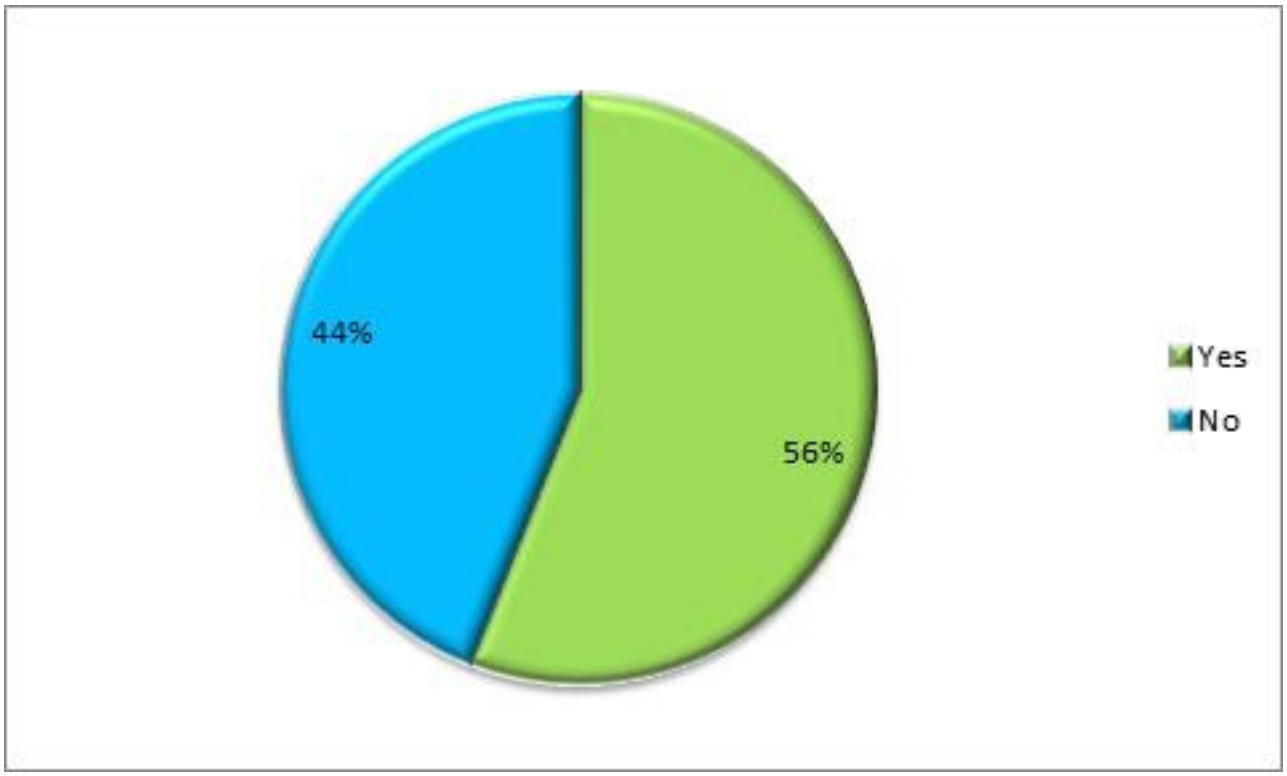

Figure 3: Distribution of respondents by whether know the health seeking habits associated with vaginal candidiasis (n=60)

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Table 4: Distribution of respondents by health seeking habits they know n=34

Responses	Frequency(F)	Percentages (%)
sought medical advice when the condition has got worse	4	12
sought medical care when they experienced symptoms	6	18
sought medical help from pharmacy	5	16
consultation with a general practitioner	18	54
Total	**56**	**100**

Results from the table 4, the majority 18(54%) of respondents reported that consultation with a general practitioner was the health-seeking habit they knew while the minority 4(20%) reported that they sought medical advice when the condition got worse.

4. Discussion.

4.1. Knowledge of vaginal candidiasis among pregnant women.

The majority 78% of respondents had ever heard about vaginal candidiasis while the minority 22% had never heard about vaginal candidiasis. This implies that more information about vaginal candidiasis among pregnant women was disseminated in society. This is because of the availability of sources of information such as health workers, media, relatives, etc and this agrees with a study done by Study by Rabiu, et al (2015), which reported that (77.2%) of the respondents had heard of vaginal candidiasis while (22.8%) of them had not heard. The majority 62% had never heard about vaginal candidiasis testing while the minority 22(37%) had never heard about vaginal candidiasis testing. This implies that more information about vaginal candidiasis testing among pregnant women was disseminated at health facilities. This is because health workers always provided information about the availability of vaginal candidiasis testing. This is in line with a study done by Ilankoon et al (2017) reported that 61.4% of the respondents said that they had ever heard about vaginal candidiasis testing from the health facility.The majority 65% of respondents revealed that health facility was their source of information about vaginal candidiasis while the minority 5% reported their source of information as groups. This implies that health facilities disseminated information about the causes and effects vaginal candidiasis and the availability of testing. This is in line with a study done by Ilankoon et al (2017) reported that 61.6% of respondents said that the source of information about vaginal candidiasis was a health facility while the minority 5% reported their source of information as groups

4.2. Health seeking habits associated with vaginal candidiasis among pregnant women.

The majority 56% of respondents revealed that they knew the health-seeking habits associated with vaginal candidiasis the minority 44% don't know the health-seeking habits associated with vaginal candidiasis. This is in line with a study done by Ilankoon et al (2017) reported that more than half 61%) of respondents revealed that they knew the health-seeking habits associated with vaginal candidiasis the few 39% don't know the health-seeking habits associated with vaginal candidiasis. The majority 54% of respondents reported that consultation with a general practitioner was the health-seeking habit they knew while the minority 20% reported that they sought medical advice when the condition got worse. This implies that pregnant women consult health workers about vaginal candidiasis. This agrees with a study done by Ilankoon et al (2017) reported that more than half 61%) of respondents revealed that they knew the health-seeking habits associated with vaginal candidiasis the few 39% don't know the health-seeking habits associated with vaginal candidiasis

5. Conclusion.

According to the study results and discussions, it was revealed that more than 70%) of the respondents had ever heard about vaginal candidiasis, however, they did not have clear knowledge about the infection. This, therefore, was concluded that the respondents had adequate knowledge about vaginal candidiasis.

Furthermore, the respondents mentioned some of the Health seeking habits associated with vaginal candidiasis among pregnant women such other after being tested in the hospital and by observing signs and symptoms. This indicates that the respondents had a good awareness of health-seeking habits associated with vaginal candidiasis among pregnant women.

6. Study limitation.

These are some of the limitations in the research process; lack of funds to finance and support the research resources, some respondents asking for a lot of money to give the information needed in research, and some people having a language barrier which causes difficult in communication, other respondents fear to provide the right information because they think that the information given may be misused.

7. Recommendations.

The government should employ more health workers such that majority on go for outreach services in different areas so that the sensitize women about vaginal candidiasis among pregnant women. Its complications and how they can avoid it.

Village health teams should be employed to help teach women in their respective villages about vaginal candidiasis among pregnant women.

Mass media means should be used to spread out news about vaginal candidiasis among pregnant women. Adequate medications should be provided by the government to help these women be free from such infections. Similarly, it would be better for stakeholders and other researchers to work on increasing the knowledge about vaginal candidiasis and its consequences as well as preventive measures which might be a stepping stone to reduce the prevalence of vaginal candidiasis among pregnant women

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9. List of Abbreviations.

% : Percentage
AIDS : Acquired Immune Deficiency Syndrome
BV : Bacterial Vaginosis
DCM : Diploma in Clinical Medicine
ET AL. : And others
FEB : February
HIV : Human Immune Virus
KCCA : Kampala Capital City Authority
NGOs : Non-Government Organizations
RTIs : Respiratory Tract Infections
TV : Television
UAHEB : Uganda Allied Health Examinations Board
VC : Vaginal Candidiasis
VVC : Vulvo Vaginal Candidiasis

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