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Knowledge, Attitude and Factors Affecting Voluntary HIV Counseling and Testing Services Among Women in an Abuja Suburb Community

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Abstract: The entry point to prevention, treatment and control measure of HIV infection is Voluntary Counseling and Testing (VCT). This study sought to assess the level of awareness, attitude and perception of VCT among women of reproductive age group in Passo community, Abuja, Nigeria. Between 1st May to 31st July of 2017, interviewer-based questionnaires was used to assess the socio-demographic data, knowledge of VCT, perception and attitude towards utilization of VCT and factors affecting VCT utilization. The community was divided into three (3) settlements, each having fifty (50) households, from which one respondent was randomly selected for the study. Seventy (46.7%) of the 150 respondents were aware of VCT; sixty two (62) were not aware and have no knowledge of VCT. There is significant association between occupation and level of education ($p<0.05$) and knowledge of VCT. There is no significant association between marital status, age and the level of awareness of VCT ($p>0.05$). Ninety percent of the respondents believed VCT is useful in preventing mother to child transmission of HIV, 116 (89.9%) believed its useful to those preparing for marriage, 112 (86.8%) believed VCT is necessary for pregnant women, while 102 (79.1%) believed VCT is useful to those who needed to know their HIV status. Respondents believed that stigmatization and discrimination (87.3%), attitude of health workers administering VCT (78.7%), location of VCT center (76.7%), and doubt about clients' confidentiality (63.3%) are the leading factors affecting VCT utilization. Despite favourable attitude towards VCT by study respondents, majority of them were not aware of VCT. In consideration to factors that may limit VCT utilization by people, it's recommended that mass education of utilization of VCT using appropriate physiological approach be considered by health workers and policy makers.

Keywords: HIV/AIDS, Voluntary Counseling and Testing, HIV Prevention, Nigeria

1. Introduction

The entry point to prevention, treatment and control measure of any disease is Voluntary Counseling and Testing (VCT) [1]. Voluntary HIV Counselling and Testing (V0..0CT) is the process whereby an individual or a couple undergoes counselling to enable people make informed choice about being tested for HIV Voluntary Counseling and Testing (VCT) for HIV usually involves two counselling sessions: one prior to taking the test known as "pre-test counselling" and one following the HIV test when the results are given, often referred to as "post-test counselling" [1].

Counselling focuses on the infection (HIV), the disease (AIDS), the test, and positive behavior change [2]. VCT has become popular in many parts of Africa as a way for a

person to learn of their HIV status. VCT centers and counselors often use rapid HIV tests that require a drop of blood; the tests are cheap, require minimal training, and provide accurate results in about 10 minutes [3]. The nearest VCT center to Passo community is the "Heart to Heart center" at the university of Abuja Teaching Hospital, less than a kilometre away along Gwagwalada – Dobi road, Nigeria.

The Human Immunodeficiency Virus (HIV) is a lentivirus (a subgroup of retrovirus) that causes HIV infection and over time Acquired Immunodeficiency Syndrome (AIDS) [3]. AIDS is a condition in humans in which progressive failure of the immune system allows life-threatening opportunistic infections and cancers to thrive. Without treatment, average survival time after infection with HIV is estimated to be 9 to 11 years, depending on the HIV subtype [4] [5]. Infection with HIV occurs by the transfer of blood, semen, vaginal fluid, pre-ejaculate, or breast milk. Within these body fluids, HIV is present as both free virus particles and virus within infected immune cells. HIV infects vital cells in the human immune system such as helper T cells (specifically $CD4^+$ T cells), macrophages, and dendritic cells [6]. HIV infection leads to low levels of $CD4^+$ T cells through a number of mechanisms, including pyroptosis of abortively infected T cells [7], apoptosis of uninfected bystander cells, direct viral killing of infected cells, and killing of infected $CD4^+$ T cells by CD8 cytotoxic lymphocytes that recognize infected [8], [9]. When $CD4^+$ T cell numbers decline below a critical level, cell-mediated immunity is lost, and the body becomes progressively more susceptible to opportunistic infections. In 2007 WHO recommended routine screening for all persons with HIV in developing countries [1]. However, this recommendation is hampered not only by the cost and insufficient treatment resources, but also by the knowledge, perception and attitude of people toward some of these diseases, especially the infectious ones [10].

Given the public health importance of HIV/AIDS, the utilization of VCT service in Nigeria is poor [10]. The 2015 Global Burden of Disease Study, in a report published in The Lancet, estimated that the global incidence of HIV infection peaked in 1997 at 3.3 million per year [11]. Global incidence fell rapidly from 1997 to 2005, to about 2.6 million per year, but remained stable from 2005 to 2015 [11]. As of 2014 in Nigeria, the HIV prevalence rate among adults aged 15- 49 was 3.17 percent [11]. Nigeria has the second largest number of people living with HIV [12]. It is reported that the stigmatization associated with HIV/AIDS is the major impediment to VCT utilization [13]. VCT utilization among men in Ethiopia was low and affected by HIV/AIDS-related stigma [13]. In Lower Manya Krobo Municipality in eastern region of Ghana, the study carried out showed that stigmatization was the main reason for poor utilization of VCT services [14]. Similar claim was made in Sagamu, Ogun State South-Western Nigeria [14]. Poor VCT utilisation and subsequent lack of lifestyle modification, and poor adherent to management option often lead to vicious circle of high incidence and prevalence of HIV/AIDS in sub-Saharan Africa and in Nigeria especially. The consequence of this is high morbidity and mortality with net effect of family dysfunction, orphans with HIV/AIDS, and poor economic resources.

Passo community is a prototype of slum, comprising of business men/women, civil servants, students (mostly University of Abuja students), commercial sex workers, artisans and farmers (predominantly the Gbagyi – the natives of Passo). It is very possible that the findings in Passo community could be similar to other slums elsewhere in FCT and in other states. Beside the fact that slums often harbor significant number of vulnerable age group – youths; slums generally are fertile ground for the spread of STIs, and also serve as safe havens for high risk groups, hence promoting the spread of HIV. Thus this study is timely and necessary not only to know the level of awareness and utilisation of VCT, but also to find out the factors influencing or mitigating the utilisation of VCT service among women of reproductive age group in Passo community.

Globally, more than half of HIV occurs in people between the ages of 15 and 24 years [15]. Voluntary counselling and testing is important and one of the national strategy to control HIV/AIDS epidemics, especially among young adults [15]. So it is unquestionable to assess continually the Knowledge Attitude and Perception (KAP) of young adults towards VCT. Many studies have been undertaken regarding young adults KAP towards the HIV from different parts of the country; however they are insufficient, when compared with the impact of HIV on this productive force of the nation. Even though studies have been conducted on young adults' sexual activity and HIV/AIDS, few of them focused in particular on the KAP of young adults regarding the VCT service. Since the study groups are part of the population which is highly vulnerable to HIV, studies have shown that having knowledge and using of VCT is essential to prevent HIV transmission among women of reproductive age group. However studies suggest that the utilisation of VCT is very low and there is an information gap among this group. The information from this study may assist policy makers to give attention towards planning and implementing effectively, in designing or improving quality of VCT services for young adults. The studies also provide information for other researchers who want to conduct further study on this area.

In view of these, the present study sought to assess the knowledge, attitude and perception of voluntary HIV/AIDS screening and testing (VCT) service; and the various factors that may affect its utilization among women of reproductive age group in Passo community, Gwagwalada Area council of Abuja, Nigeria.

2. Materials and Methods

2.1. Study Area

The study area took place at Passo community; located in Quarters' ward, about 1km from the University of Abuja Teaching Hospital along Gwagwalada - Dobi road,

Gwagwalada Area Council, Abuja, Nigeria. The natives of Passo are Gbagyi people, predominantly farmers; however recent demolition of illegal structures within the Federal Capital Territory brought a massive influx of people into the area council, and hence Passo. Abuja is Nigeria's Federal Capital Territory, geographically located in the centre of the country, formed in 1976 from parts of the states of Nasarawa, Niger, and Kogi. The territory is located just north of the confluence of the Niger River and Benue River. It is bordered by the states of Niger to the west and north, Kaduna to the northeast, Nasarawa to the east and south, and Kogi to the southwest. Lying between latitude 8.25 and 9.20 north of the equator and longitude 6.45 and 7.39 east of Greenwich Meridian. The Federal Capital Territory has a land mass of approximately 7, 315 km^2, and it is situated within the savannah region with moderate climatic conditions. The territory is currently made up of six area councils, namely: Abaji, Abuja Municipal, Gwagwalada, Kuje, Bwari, and Kwali. Gwagwalada is one of the six local government area councils of FCT created on the 15th October, 1984, and is also the name of the main town in the Local Government Area, which has an area of 1069.589 km^2 and a population figure of 158,618 people at the 2006 census. Gwagwalada Area Council has 10 wards, viz; Zuba, Ibwa, Dobi, Kutunku, Tunga Maje, Gwako, Paikon - kore, Ikwa, Quarters and Central.

2.2. Study Population

This study was conducted over a period of 3 months, 1st May to 31st July of 2017. Women of reproductive age group within 15 – 49 years across all levels of education, religions, ethnic groups, and marital status were enrolled into the study.

2.3. Study Design

This was a prospective study. An assessment of VCT utilization among women of reproductive age was carried out.

2.4. Sample Size Determination

Using Leslie Kish formula:

$$n = Z^2pq/d^2$$

Where:
n=sample population,
z= confidence level,
p=prevalence value,
q=1-p, and
d= precision value

With 95% confidence level (1.96), and an estimated prevalence of VCT utilization of 10.5% (0.105) and a precision value of 0.05, the sample size calculated was:

$$n = \frac{1.96^2 \times 0.105 \times (1 - 0.105)}{0.05^2} = \frac{0.403368 \times 0.895}{0.0025} = 144.4$$

The minimum sample size of 144 was calculated. However, 150 voluntary enrollee were used.

2.5. Sampling Techniques

Simple random sampling was used. The community was divided into three (3) settlements, each had approximately fifty (50) households, from which one respondent, at least was randomly selected for the study.

2.6. Data Collection

Interviewer-based questionnaires were designed for data collection. The questionnaires had sections for socio-demographic variables of participants, knowledge of VCT; perception and attitude towards utilization of VCT and factors affecting VCT utilization. The questionnaire was pretested before the commencement of the study.

2.7. Data Analysis

Data was entered into Microsoft excel sheet. They were subsequently presented into frequency tables and charts. Chi-square test was used to analyze for association between knowledge, attitude and utilization of VCT using statistical package for social science (SPSS) version 21, IBM, California Inc. USA. P values less than 0.05 were considered significant association.

2.8. Ethical Considerations

Ethical clearance was obtained from Health Research and Ethical Committee of the University of Abuja Teaching Hospital. Permission was obtained from the traditional ruler of the community. Informed consent was also obtained from all the study subjects

3. Results

Table 1. *Socio-demographic characteristics of the respondents.*

Socio-demographic variables	**Frequency (n)**	**Percentage (%)**
Age distribution (years)	Frequency (n)	Percentage (%)
15-24	46	30.7
25-34	55	36.7
35-44	26	17.3
45-49	23	15.3
Marital status		
Single	56	37.3
Married	78	52.0
Divorced	5	3.3
Others	10	6.7
No response	1	0.7
Occupation		
Student	54	36.0
Applicant	26	17.3
Civil servant	23	15.3
Business	37	24.7
Others	9	6.0
No response	1	0.7
Level of education		
Primary	14	9.3
Secondary	52	34.7
Tertiary	80	53.3
Others	3	2.0
No response	1	0.7

A total of 150 respondents were used for this study in Passo community; majority 46 (30.7%) of the respondents were between 15-24 years; the distribution by occupation shows that 54 (36.0%) of the respondents were students; 80 (53.3%) had tertiary level of education; and the distribution by marital status shows that 78 (52.0%) of the respondents are married. (Table 1).

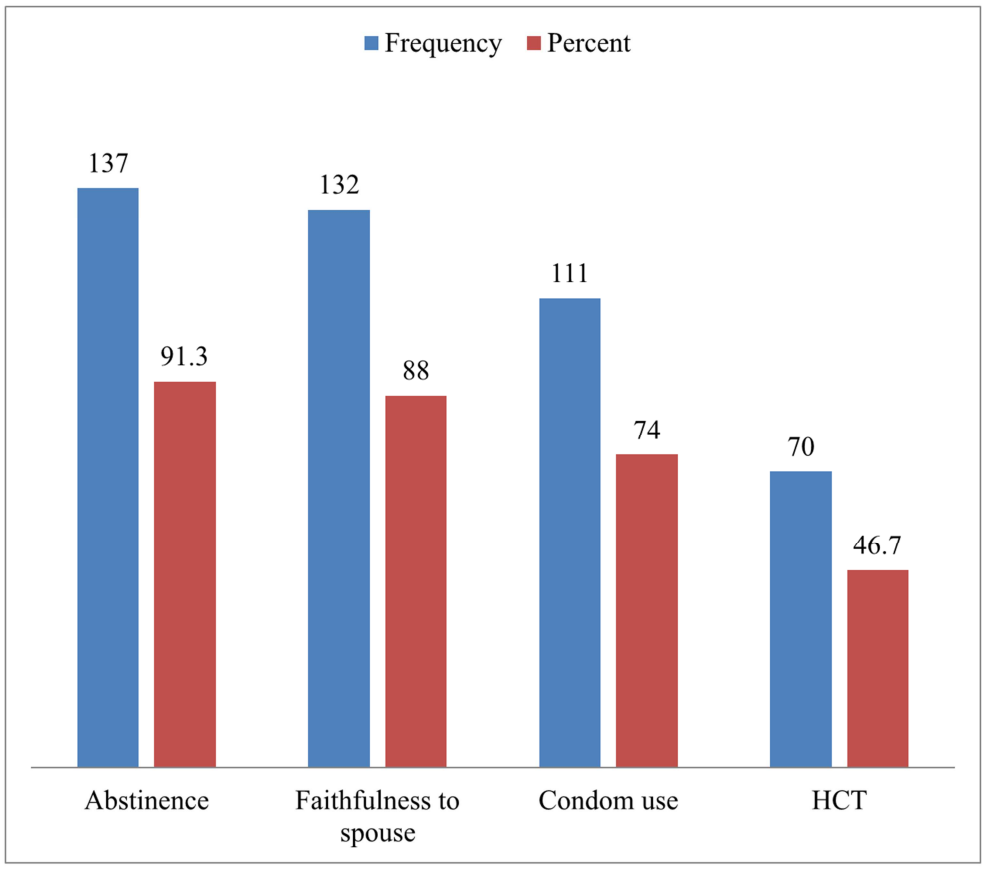

Figure 1. *Level of awareness of HIV preventive methods among women of reproductive age group in Passo community.*

Each of the 150 respondents was asked of their level of awareness of HIV/AIDS preventive methods. The results shows that 137 (91.3%) believed and practiced abstinence; 132 (88%) believe in faithfulness to spouse; 111 (74%) believe in condom use and 70 (46.7%) have good knowledge of VCT as another vital HIV/AIDS preventive method. (Figure 1).

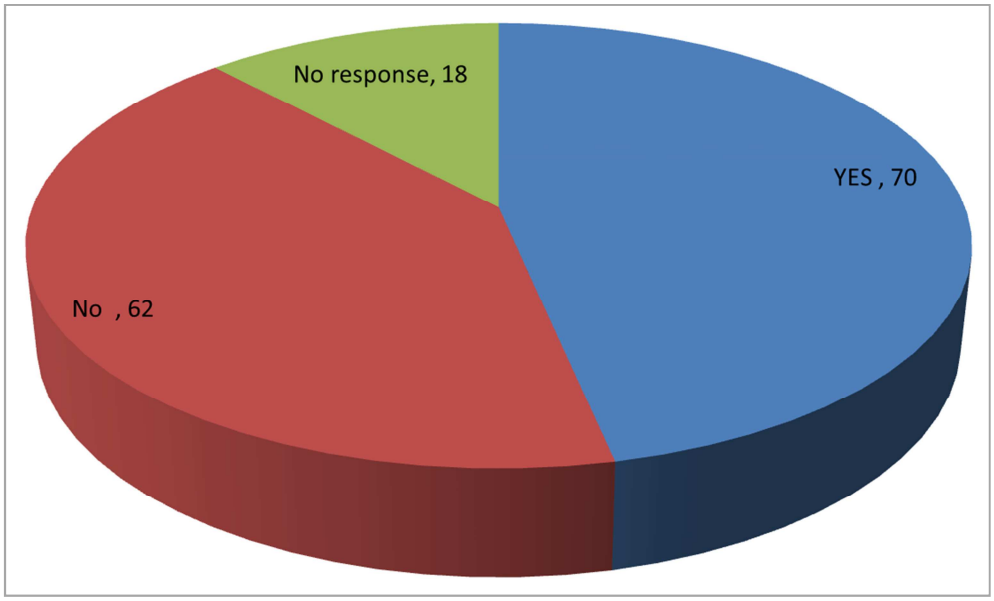

Figure 2. *Knowledge/awareness of VCT among the respondents.*

Seventy (70) out of 150 respondents were aware of VCT; sixty two were not aware and have no knowledge of VCT. Fifty Eight (2.9%) out of the 70 that have knowledge of VCT said to know at least one centre where the service is offered, while 18 respondents did not respond. (Figure 2).

Table 2. *Association between socio-demographic variables and level of awareness of VCT among the respondents.*

Socio-demographic Variables		**Knowledge of VCT**		***P value***
		YES	**NO**	
Age (years)	15 - 24	12	28	0.006
	24 - 34	30	19	
	35 - 44	15	8	
	45 - 49	13	7	
	Total	70	62	
Marital status	Single	23	25	0.142
	Married	43	29	
	Divorce	0	3	
	Others	4	5	
	Total	70	62	
Occupation	Student	19	27	0.000
	applicant	15	9	
	civil servant	22	1	
	business	13	21	
	Others	1	3	
	Total	70	61	
Level of Education	Primary	3	8	0.000
	Secondary	5	38	
	Tertiary	60	14	
	Others	1	2	
	Total	69	62	

There is significant association between occupation ($P<0.05$) and knowledge of VCT; and also level of education ($P<0.05$) and knowledge of VCT. There is no significant association between marital status and the level of awareness of VCT. Similarly, no significant association between age and level of awareness of VCT. (Table 2).

Table 3. *Perception and attitude of the respondents towards VCT.*

Importance of VCT	**Frequency (n)**		**Percentage (%)**
To prevent mother to child transmission of HIV	**Frequency (%)**		**Percentage (%)**
To prevent mother to child transmission of HIV	YES	117	90.1
	NO	8	6.0
	No response	4	3.1
Useful to those preparing for marriage	YES	116	89.9
	NO	5	3.9
	No response	8	6.2
For who already knew their HIV status	YES	115	89.1
	NO	10	7.8
	No response	4	3.1
VCT necessary for pregnant women	YES	112	86.8
	NO	8	6.2
	No response	9	7.0
For those who need to know their status	YES	102	79.1
	NO	20	15.5
	No response	7	5.4
Only for those who have HIV-like clinical symptoms	YES	26	20.2
	NO	88	68.2
	No response	15	11.6
Only for HIV positive persons	YES	24	18.6
	NO	82	63.6
	No response	23	17.8
Useful to those starting new relationship	YES	74	57.4
	NO	52	40.3
	No response	24	18.6

Ninety percent of the respondents believed VCT is useful in preventing mother to child transmission of HIV, 116 (89.9%) believed VCT is useful to those preparing for marriage, 115 (89.1%) believed to VCT is useful for those who already know their HIV status; 112 (86.8%) believe VCT is necessary for pregnant women; 102 (79.1%) believed VCT is useful to those who need to know their status, and 20.2% believed VCT is useful to those who have HIV-like clinical symptoms. This gives an

insight into the perception of the respondents toward the usefulness of VCT. (Table 3).

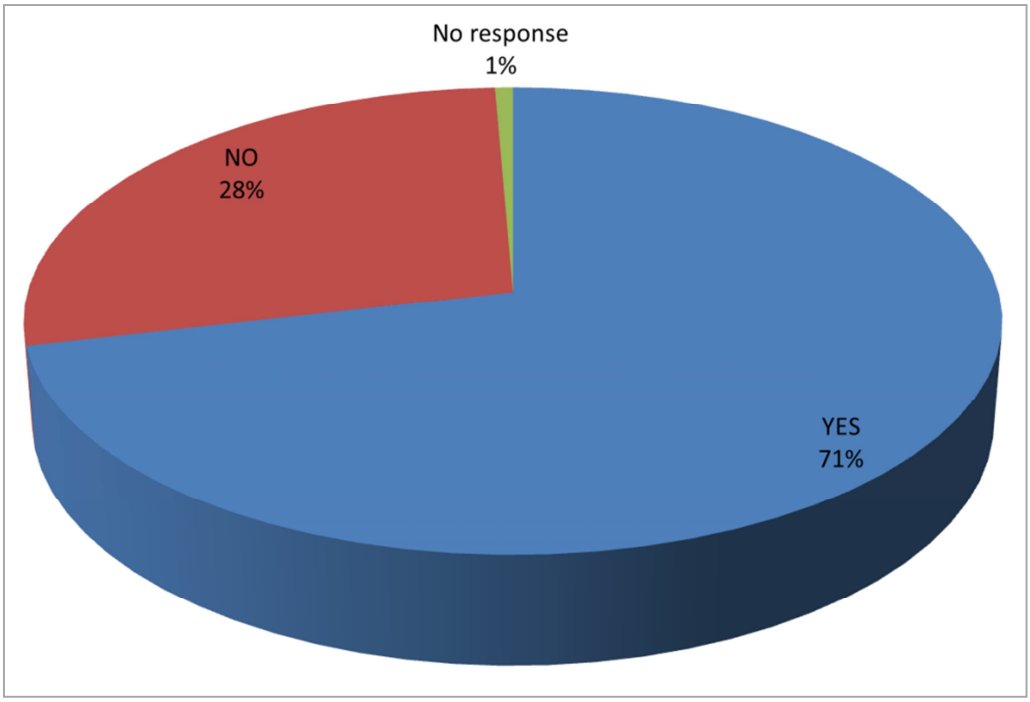

Figure 3. *Willingness to recommend VCT to family and friends.*

Seventy percent of the respondents showed positive attitude towards VCT, by agreeing to recommend it to family and friends. Twenty eight percent (28%) felt they could not recommend VCT to family and friends. While 1% of the participants did not provided any respond. (Figure 3).

Table 4. *Factors affecting VCT utilization.*

Factors	Frequency (n)		Percentage (%)
Stigmatization and discrimination following positive status	YES	131	87.3
	NO	6	4.0
	No response	13	8.7
Attitude of health workers or personnel administering the service	YES	118	78.7
	NO	17	11.3
	No response	15	10.0
VCT centre are located very far or in remote areas	YES	115	76.7
	NO	20	13.3
	No response	15	10.0
Level of education	YES	108	72.
	NO	31	20.7
	No response	11	7.3
Doubt about confidentiality and fear of positive results	YES	95	63.3
	NO	38	25.3
	No response	17	11.4
VCT centre too busy	YES	80	53.3
	NO	51	34.0
	No response	19	12.7
Inadequate and poor staff/ personnel	YES	74	49.3
	NO	65	43.3
	No response	11	7.4
Poor monitoring and evaluation	YES	71	47.3
	NO	51	34.0
	No response	28	18.7
Gender sensitivity and poor counselling protocols	YES	66	44.0
	NO	49	32.7
	No response	35	23.3
Long waiting period between the actual blood test and disclosure of results	YES	64	42.7
	NO	53	35.3
	No response	33	22.0

Factors	Frequency (n)		Percentage (%)
Lack of other support services	YES	60	40.0
	NO	59	39.3
	No response	31	20.7
Other reasons (social, religious believe, cultural believe etc)	YES	59	39.3
	NO	59	39.3
	No response	32	21.4

Respondents believed that stigmatization and discrimination (87.3%), attitude of health workers administering VCT service (78.7%), location of VCT center (76.7%), level of education (72.0%) and doubt about confidentiality (63.3%) are the leading factors affecting VCT utilisation. (Table 4).

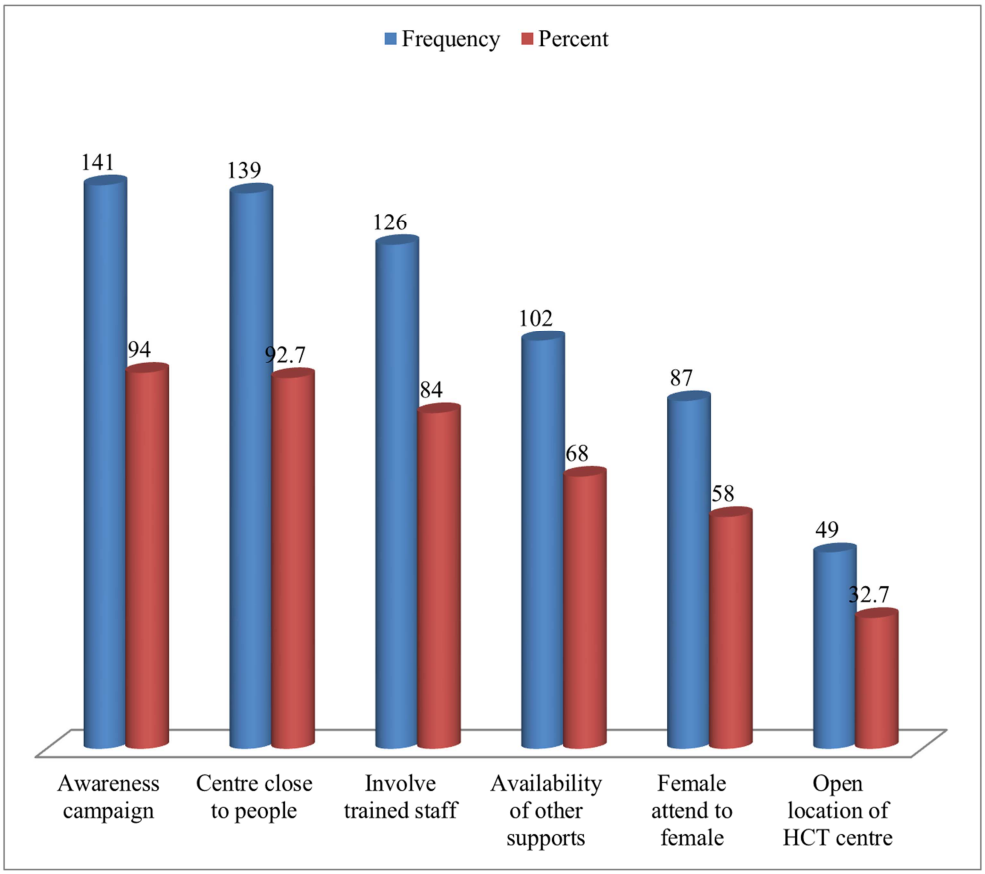

Figure 4. *Factors promoting VCT utilization among women of reproductive age in passo community.*

Ninety four percent of respondents believed more mass campaign can promote VCT utilisation, 92.7% of the respondents believed VCT utilization could be improved if VCT centre is located in Passo community, 84% of the respondents believed the involvement of trained staff could improve VCT utilisation, 68%) of the respondents believe availability of other support services could improve VCT utilisation, whereas those that believed VCT utilisation could be improved if the centre is located in an open place were 32%. (Figure 4).

4. Discussion

This study investigates the knowledge, perception and attitude, and factors affecting HIV counselling and testing among 150 women of reproductive age in Passo community, Gwagwalada Area Council, Abuja, Nigeria.

Seventy (46.7%) respondents have good knowledge of VCT; and 58 (82.9%) of the 70 respondents that have the knowledge of VCT said to know at least one centre where the service is offered. This is contrary to a study in Kisii Central District, Kenya where there is a high level of awareness of VCT services (99.6%), however, very few respondents had actually made active use of the services [16]. In Oromia region, South western Ethiopia, similar study reported that all 281 (100%) of respondents had ever heard about VCT, 245 (87.2%) were knowledgeable and have favourable attitude towards VCT, however more than half of them have not under gone VCT [17]. Similar study conducted in north-eastern Nigeria showed that more than half of respondents (387) have good knowledge of VCT [18]. According to a study in south-eastern Nigeria, 69.9% of the respondents had good knowledge of VCT [19]. The difference in the rate of knowledge and utilization of HCT in these studies and the

present one could be attributed to differences in socioeconomic status of these study locations. People who reside in cities tend to be more aware of health sensitization programs through various communication channels.

There is significant difference in the awareness and knowledge of other HIV preventive methods when comparing with various HIV preventive measures adopted by participants. This implied that despite the proximity of a tertiary health institution (the University of Abuja Teaching Hospital), the level of awareness of HIV infection prevention was poor. This is consequential because people may tend to indulge into high risk behaviours that may favour the transmission of HIV within the community and beyond.

Age and occupation were significantly associated with level of awareness of VCT. This is in consonance with a similar study conducted in Ghana, such that there is was association relationship between educational status and level of VCT service usage [14]. Among the 150 respondents, 129 (86.0%) knew VCT is very useful/important in preventing HIV/AIDS, whereas 18 (12%) did not think so and the remaining 3 (2%) were adamant. Similar findings were reported in a study conducted in Ethiopia [17]. The 129 respondents were further asked in detail of the usefulness of VCT service, and various responses were obtained. Majority of the respondents believe VCT is useful in preventing mother to child transmission 117 (90.1%); useful to those preparing for marriage 116 (89.9%); to both HIV positive and negative persons 115 (89.1%); to those who need to know their status 102 (79.1%); and necessary for pregnant women 112 (86.8%). However, this is slightly different from a study conducted in north-western Ethiopia where 217 out of 414 respondents agreed to use VCT service any time; and 151 agreed to use when feeling sick. The difference in these results could be due to level of awareness provided by healthcare / community health workers to people on the significance of HIV VCT.

Ninety - four percent of the respondents were willing to use VCT service if made available free of charge [19]. Few respondents felt VCT service is useful only for HIV positive persons 24 (18.6%); useful to those starting new relationship 74 (57.4%); and only for those who have HIV-like symptoms 26 (20.2%).

Majority of respondents believe stigmatization and discrimination following HIV tests positive status, attitude of health workers to clients, location of VCT centre and level of education were the major barriers affecting utilisation of VCT. This is different from a study conducted in Lower Manya Krobo municipality, Ghana were doubt about confidentiality provided to VCT clients was the only barrier affecting VCT [14]. However, in north-western Ethiopia, the findings were similar to those of this present study [19].

Majority (94%) of respondents were of the opinion that massive awareness campaign is the best way to promote VCT utilisation. Other factors believed to promote VCT utilisation included creation of more VCT centers close to people (92.7%), involvement of trained personnel (84.0%), and consideration of gender sensitivity, which means female counselling/attending to female or men counselling/attending to men (58.0%). Despite the fact that 92.7% of the respondents agreed that creation of centre close to people can influence VCT utilisation, many however disagreed that VCT center should not be located at open places. This is slightly different from the findings from a study conducted at Awka, Anambra state, south eastern Nigeria, where the respondents believed elimination of stigmatization; and availability of other support services are the only factors promoting VCT utilisation [20].

5. Conclusion

Despite favourable attitude towards VCT by study respondents, majority of them were not aware of VCT. In consideration to factors that may limit VCT utilization by people, its recommended that mass education of utilization of VCT using appropriate physiological approach be considered by health workers and policy makers.

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