IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 4 Ver. VII (Apr. 2016), PP 119-126
www.iosrjournals.org

Knowledge, Attitudes and Practices of HIV-Infected Women on Cervical Cancer Screening at a Church-affiliated Hospital

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Abstract: *Cervical cancer is the second leading cause of female cancer-related morbidity and mortality globally representing 13% of female cancers and accounting for 11% of the total cancer deaths. Several studies have reported an association between HIV (Human Immunodeficiency Virus Infection) and cervical cancer. About 70% of people living with HIV are in Sub Saharan Africa and Zimbabwe is the fifth worst affected nation. Ironically, since there is no active screening of cervical cancer in HIV-infected people, they have to voluntarily seek cervical cancer screening. Very few women ever get the cervical cancer screening. The aim of the study was to determine the knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening at Musiso Hospital, Masvingo Province, Zimbabwe. The study was done through a cross-sectional survey with a sample of 208randomly selected women at Musiso OI (Opportunistic Infections) Clinic. Data was obtained through a questionnaire. Multiple variable logistic regressions models were also used to assess association between outcomes of interest and socio-demographic characteristics. All open ended questions were analysed using qualitative methods. Forty-five (21.6%) respondents claimed to know what cervical cancer is and 115(55.3%) said cervical cancer is preventable. However, 193 (92.8%) did not know any screening tests. Among the respondents 161 (77.4%) felt at risk of cervical cancer. Eighteen (9.0%) of all participants had screened for cervical cancer before and 200 (96.2%) respondents reported would like to screen for cervical cancer in the future. HIV-infected women have inadequate knowledge and a positive attitude towards cervical cancer screening. Although they are at an increased risk of cervical cancer, very few are ever screened for the cancer. There is need to incorporate cervical cancer screening in routine HIV care. Moreover, HIV positive women should be encouraged to initiate cervical cancer screening.*

Key Words: *Attitude, Cervical cancer screening, HIV (Human Immunodeficiency virus), Knowledge, Practice, Zimbabwe*

I. Introduction

Cancer deaths are twice as many as the deaths attributable to the combination of AIDS, malaria and Tuberculosis. Cancer-related deaths are expected to increase by 80% by the year 2030. About 14.1 million new cancer cases were diagnosed in 2012[(1;2)]. Cervical cancer is the second leading cause of cancer related mortality in women. Every year, cervical cancer results in loss of 168.1 million life years. Cancer prevalence and mortality are higher in developing countries compared to the developed world. While developing countries account for 57% new cancer cases, they contribute 85% new cervical cancer cases every year. Moreover, 87% of cervical cancer related cancer deaths occur in developing countries. Zimbabwe, Malawi and Uganda are among the worst countries affected with a high burden of cervical cancer [(2)].Cervical cancer is malignant neoplasm of the cervix uteri. The Human Papilloma Virus (HPV) which spreads through sexual intercourse is believed to be responsible for almost all cervical cancers [(3;4)]. It may present with vaginal bleeding but symptoms may be absent until the cancer is in its advanced stages [(5;6)]. HIV infection is associated with increasing incidence of HPV infection and cervical cancer [(7)]. By virtue of that, incidence and mortality due to cervical cancer is very high in countries with a high HIV prevalence [(7;8)].A study in South Africa reported an increase in HPV prevalence from 20.3% before seroconversion to 23.6 at seroconversion and 49.1% at seroconversion. The adjusted hazard ratio of getting HPV infection due to seroconversion was 4.02 (95% CI=2.26; 7.13) [(9)]. Association of cervical cancer with HIV infection results in stigmatisation of the cancer in some societies [(10)].Diagnosis of invasive cervical cancer (ICC) can be done through visual inspection with acetic acid (VIA) coupled with digital cervicography, cytology and histology [(8)]. The tests are fairly cheap and have been made accessible to many through subsidy and donor organisations. Prevention, early detection, diagnosis, treatment, psychosocial support, and palliative care are components of cancer control that can reduce the cancer burden [(7;11)]. One third of all cancer-related mortality can be prevented through timely screening, vaccination and lifestyle modifications to alleviate spread of cancer. The Papanicoloau test remains the commonest screening method for cervical cancer. An alternative, low-cost test, visual inspection using acetic acid (VIA), has emerged for use in low-resource settings where it can be performed by auxiliary health professionals [(12;13)].

A study in South Africa found that the average cost of VIA per case was US$3.67. It was very much cheaper than other screening tests. Papanicolaou test was costed at $8.17 and HPV DNA testing at US$54.34 per case [(14)]. A recent study in sub Saharan Africa discovered that 96% of health centres performed cervical cancer screening. Eighty percent sites performed the tests on-site. However, only 29% used the VIA method of testing [(13)]. VIA is similar to colposcopy in that acetic acid is applied and any aceto-white lesion is visualized, although with VIA there is no magnification of the lesions. The concept of routine screening is not well known in the African tradition and in most cases people access health care when they have disease symptoms, usually bleeding through the vagina, and not for health checks [(11;15)]. Because women receiving antiretroviral therapy are observed on a regular basis, they can also receive the continuity of care needed for cervical cancer screening the services are made accessible to them and awareness is also created among the women[(7;11)]. The American Cancer Society recommends that all women should begin cervical cancer screening at age 21[(16)]. Women aged 21 to 29, should have a Pap test every 3years.Women who are at high risk of cervical cancer because of a suppressed immune system (for example from HIV infection, organ transplant, or long term steroid use) need to be screened more often. Treatment consists of surgery in early stages, chemotherapy and radiotherapy in advanced stages of the disease [(16)]. Cervical cancer screening awareness, positive attitude on the disease and availability of resources are key factors in implementing cervical cancer screening programs[(17;18)]. In a study done in Zimbabwe, 90% of the participants had never accessed cervical cancer screening and 81% had no previous knowledge of cervical cancer screening tests. In the same study barriers to cervical cancer screening were identified as lack of knowledge on cervical cancer and cervical screening tests, lack of advice and encouragement by health professionals to access cervical screening tests, unaffordable cost, inaccessible health facilities because of distance and some females did not believe they were at risk for cervical cancer because it was not in their family history[(19)]. These results show lack of knowledge and negative attitude on the disease.

In Zimbabwe there is no ICC mass screening policy. Women who are screened include those who seek family planning services, or women with gynaecologic symptoms and those who are knowledgeable about the disease, financially stable and voluntarily seek the service from their health care providers [(19)]. Little is known about the women who are in the high risk group like the women in the rural areas who are not financially stable and the HIV infected women. At Musiso Mission Hospital in Zaka district of Masvingo province, Zimbabwe, very few women come for ICC screening either as self-referrals or referred from opportunistic infections (OI) clinics. The purpose of the study was to determine the knowledge, attitude and practices of HIV-infected women on cervical cancer screening at Musiso mission Hospital in Masvingo Province of Zimbabwe.

II. Material And Methods

This study utilized a descriptive cross sectional study. The cross sectional research was chosen as it describes a situation as it exists and examines association between exposure and disease prevalence.

Study Setting

This study was conducted in the OI clinic of Musiso mission hospital, a Church-affiliated Hospital in Zimbabwe. The mission hospital is one of the two referral hospitals in the district with a catchment population of 181 106 people[(20)].

Sampling and data collection

In this study the population was all HIV infected women receiving services at Musiso mission hospital which is about 550.A sample of 208 women was selected through simple random sampling using the OI attendance register as the sampling frame. The sample was calculated to yield a power of 0.8 at 0.05 level of significance. Data was collected in November 2014, through self-administered questionnaires. The questionnaire was pre tested on 25 women attending services at Ndanga hospital, another referral hospital within the district. The results from the pre-test helped to restructure and validate the questionnaire. Pre-testing the questionnaires on women not attending OI clinic services at Musiso hospital helped to ensure that respondents taking part in the pre-test were not included in the main study. The questionnaires were administered in English and Shona (a local language) covering the following domains: demographic and social economic information, knowledge, attitude and practices of HIV infected women on cervical cancer and cervical cancer screening. The questionnaires were collected the same day before the participant left the clinic. Data was collected over one month. Thematic analysis was used for qualitative data. An association between socio- demographic characteristics and adequacy of knowledge, attitude and practices of cervical cancer screening was determined using both bivariate and logistic regression analysis. Quantitative data was analyzed using STATA statistical program. The descriptive statistics (mean, percentages and frequency distribution were used to analyze quantitative data determining central tendency and variation in the data. An ethical clearance was obtained from Medunsa Research and Ethics Committee and permission was sought from the Provincial Medical Director of

Masvingo Province. Informed consent was also sought from all respondents before collecting data. Principles that guide the ethics of research were up held at all times according to the Nuremberg code.

III. Results

Socio- Demographic Characteristics

A total of 208 HIV infected women participated in the study. Table 1 presents the age distribution of women. The age was negatively skewed with a median of 42 years (IQR=17). Age was disaggregated into five-year age bands. The age group 50+ had the highest frequency of 49 (23.6%) and the age group 25 -29 had the lowest frequency of 10 (4.8%).

Table 1: Distribution of respondents by age group

Age	Frequency	Percentage
<24	12	5.8
25-29	10	4.8
30-34	39	18.8
35-39	42	20.2
40-44	37	17.8
45-49	19	9.1
50+	49	23.6
Total	**208**	**100**

A hundred (48.1%) of the respondents had learnt up to secondary level, 9.1% had no formal education and only 3.9% had learnt up to tertiary level as shown in table 2. On the other hand, 162 (77.9%) had no formal employment. All participants interviewed were HIV positive and all were confirmed positive between year 2001 and 2014. Seventy-two (34.6%) respondents had lived with HIV infection for 3- 5 years while 11 (5.3%) had lived with HIV for more than 11 years. About 91 per cent of respondents reported not having any other chronic health conditions.

Table 2: Socio-demographic characteristics of participants (N=208)

Variable	Frequency	Percent
Level of formal education		
No formal education	19	9.1
Primary	81	38.9
Secondary	100	48.1
Tertiary	8	3.9
Employment status		
Employed	22	10.6
Not employed	162	77.9
Other	24	11.5
Number of years living with HIV		
Below 2 years	50	24.0
3 -5 years	72	34.6
6-8 years	57	27.4
9-11 years	11	5.3
Above 11 years	11	5.3

Knowledge on Cervical Cancer and Cervical Cancer Screening

Forty five (21.6 %) respondents claimed to know what cervical cancer but the majority of these could not correctly explain what cervical cancer is. Only 2 respondents managed to correctly define cervical cancer and linked it to HPV as the causative organism. Most of the women gave the general signs and symptoms of gynecological problems as the definition of cervical cancer. For instance, some of the responses which were given as the definition of cervical cancer included inflammation of cervix, severe bleeding, and infection in the cervix which spread to the body.

Factors associated with knowledge on cervical cancer screening

Association between age, level of education, employment status and the number of years infected by HIV and knowledge of cervical cancer were determined using a multiple variable logistic regression model. Most socio-demographic characteristics were not statistically significant predictors of knowledge of cervical cancer. However, compared to no formal education, tertiary education had odds of 23.2 (95% CI=1.17; 457.2) of being associated with increased knowledge of cervical cancer. Surprisingly, not being employed, compared to being employed was associated with knowledge of cervical cancer (OR=0.13; 95% CI=0.04; 0.42). The association is summarized in Table 3 below.

Table 3: Association between socio-demographic characteristics and knowledge on cervical cancer screening

Variable	Odds ratio(95% CI)	P value
Age		
<24	1	
25-29	0.56(0.04-7.76)	0.670
30-34	1.26(0.21-7.50)	0.801
35-39	0.78(0.13-4.74)	0.783
40-44	0.59(0.09-4.08)	0.592
45-49	1.06(0.14-7.92)	0.953
50+	1.81(0.29-11.22)	0,522
Education		
No formal Education	1	
Primary	4.9(0.53-44.5)	0.160
Secondary	6.9(0.68-70.9)	0.102
Tertiary	23.2(1.17-457.2)	0.039
Employment		
Employed	1	
Not employed	0.13(0.04-0.42)	0.001
Other	0.35(0.09-1.42)	0.143
Number of years living with HIV		
<2 years	1	
3-5 years	0.84(0.29-2.48)	0.759
6-8 years	1.69(0.59-4.80)	0.324
9-11 years	0.64(0.11-3.63)	0.617
>11 years	3.13(0.50-19.6)	0.223

Knowledge on cervical cancer prevention

Out of the 208 participants 55.3% said cervical cancer is preventable, 12.0% said it cannot and 32.7% did not know. The respondents who claimed to know that cervical cancer is preventable reported screening (39.0 %), condom use (24.3 %), good hygienic practices (14.6 %), circumcision (2.4%) and avoiding multiple sexual partners (2.4%) as cervical cancer screening methods.

Socio-demographic characteristics and knowledge on cervical cancer screening

Statistically significant results (p=0.032) were found in the association between employment status and knowledge of cervical cancer screening. The highest proportion of the respondents who said cervical cancer is preventable was among those who were in the" other" category (70.8 %) on employment. Those with formal employment had the highest proportion of respondents who said cervical cancer is not preventable (27.3%), while those with no employment had the highest proportion of respondents who did not know (37%). The results are summarized in table 4 below.

Table 4: Knowledge on cervical cancer screening and socio-demographic characteristics

Variable	Yes [n (%)]	No [n (%)]	Do not know [n (%)]	Total [n (%)]
Age (years)				
Below 24	7(58.3)	1(8.3)	4(33.3)	12(100)
25-29	4(40.0)	3(30.0)	3(30.0)	10(100)
30-34	23(59.0)	2(5.1)	14(35.9)	39(100)
35-39	24(57.1)	6(14.3)	12(28.6)	42(100)
40-44	22(59.5)	2(5.4)	13(35.1)	37(100)
45-49	9(47.4)	4(21.1)	6(31.6)	19 (100)
50 and above	26(53.1)	7(14.3)	16(32.7)	49(100)
Total	115(55.3)	25(12.0)	68(32.7)	208(100)
P value	0.722			
Education				
No formal Education	8(42.1)	2(10.5)	9(47.4)	19(100)
Primary	47(58.0)	8(9.9)	26(32.1)	81(100)
Secondary	55(55.0)	15(15.0)	30(30.0)	100(100)
Tertiary	5(62.5)	0(0.0)	3(37.5)	8(100)
Total	115(55.3)	25(12.0)	68(32.7)	208(100)
P value	0,627			
Employment				
Employed	13(59.1)	6(27.3)	3(13.6)	22(100)
Not employed	85(52.5)	17(10.5)	60(37.0)	162(100)
Other	17(70.8)	2(8.3)	5(20.8)	24(100)
Total	115(55.1)	25(12.0)	68(32.7)	208(100)
P Value	0.032			
Number of years living				

with HIV				
Below 2	22(44.0)	8(16.0)	20(40.0)	50(100.0)
3-5	42(58.3)	7(9.7)	23(31.9)	72(100.0)
6-8	34(59.7)	5(8.8)	18(31.6)	57(100.0)
9-11	9(50.0)	4(22.2)	5(27.8)	18(100.0)
Above 11	8(72.7)	1(9.1)	2(18.2)	11(100.0)
Total	115(55.3)	25(12.0)	68(32.7)	208(100.0)
P- value	0,540			

Respondents were also asked on which two screening tests they knew. Seven (3.0%) mentioned VIA only, 6(2.9 %) mentioned biopsy of the cervix, 4(1.9%) said Pap smear and VIA and 3(1.4%) mentioned Pap smear only. The majority (92.8%) said they did not know any screening tests. Thirty-nine (18.75%) respondents mentioned at least one of the four sources of information on screening tests. Of these, 56.4% heard the information from a health worker, 23.1% from a friend or relative, and 10.3% through the media.

Attitude on cervical cancer and cervical cancer screening

Table 5 presents the association between perceived risk of cervical cancer and socio- demographic characteristics. Women aged 35-39 years were associated with a positive attitude towards cervical cancer screening (OR=5.05; 95% CI=1.08; 23.66). The attitude for other socio-demographic characteristics was promised to be associated with cervical cancer screening but the associations were not statistically significant.

Table 5: Association between perceived risk of cervical cancer and socio-demographic characteristics

Variable	Odds ratio at 95 C.I	P-value
Age (years)		
Below 24	1	
25-29	1.17(0.21-6.62)	0.861
30-34	2.29(0.55-9.58)	0.254
35-39	5.05(1.08-23.66)	0.040
40-44	11(0.48-9.37)	0.326
45-49	7.16(.95-54.23)	0.057
50 and above	2.74(0.63-11.87)	0.177
Education		
No formal education	1	
Primary	2.22(0.69-7.19)	0.182
Secondary	3.15(0.91-10.96)	0.071
Tertiary	3.15(0.23-44.09)	0.394
Employment		
Employed	1	
Not employed	1.52(0.39-5.93)	0.556
Other	1.42(0.29-7.02)	0.665
Number of years living with HIV		
Below 2	1	
3-5	1.51(0.61-3.71)	0.369
6-8	1.73(0.65-4.62)	0.272
9-11	0.97(0.25-3.82)	0.968
Above 11	2.13(0.35-13.17)	0.414

Women were asked on how often they should get screened for cancer. About 6.3% said in less than 6 months, more than half (52.4%) said after every 6 months, 23.1% said yearly and 2.9% said every 2 years.

Practices on Cervical Cancer Screening

There was no statistically significant socio-demographic factor associated with cervical cancer screening. The results of the logistic regression of the association between sociodemographic attributes and cervical cancer screening are summarized in Table 5 below.

Table 6: Cervical cancer screening by demographic factors

Variable	Odd Ratio (95 C.I)	P-value
Age (years)		
Below 24	1	
25-29	4.52(0.28-72.04)	0.285
30-34	0.35(0.25-5.05)	0.444
35-39	0.99(0.00-2.22)	0.145
40-44	0.78(0.68-8.93)	0.842
45-49	0.69(0.04-10.87)	0.789
50 and above	1.85(0.16-21.83)	0.626
Education		

No formal education	1	
Primary	1.19(0.12-11.66)	0.884
Secondary	2.89(0.26-32.21)	0.388
Tertiary	3.1(0.11-87.67)	0.507
Employment		
Employed	1	
Not employed	0.23(0.50-1.08)	0.062
Other	0.21(0.03-1.64)	0.138
Number of years living with HIV		
Below 2	1	
3-5	4.26(0.66-27.37)	0.127
6-8	4.82(0.74-31.59)	0.101
9-11	3.09(0.29-33.40)	0.353
>11		

Exactly half of the women who had screened for cervical cancer before reported that they experienced pain during the procedure. 33.3 per cent (6) reported that the procedure was "ok", "not painful", "not harmful" and 16.7 per cent (3) gave different statements like; "I was bleeding for 3months" and "My brain celebrated for having been not yet affected." The women who had not had cervical cancer screening before were asked to give their reasons of not having the screening test. The majority of the respondents stated lack of knowledge as their reason for not having screened for cervical cancer before. Ignorance, lack of symptoms, lack of time, money and motivation were other reasons cited by the respondents for not having screened for cervical cancer before. There was evidence of misconception as illustrated by the response from other women for instance one woman aged 41 years said; " I last had sex long back so I don't expect to have cervical cancer", "I didn't know I will have cervical cancer since I am on ART". Nearly 200 (95.8 per cent) respondents said they would like to screen for cervical cancer in the future. Of these 14.5% said they would do so at a district hospital, 64.8% said at a mission hospital, 19.1% at a clinic and only 1.5 per cent would get screened by a private doctor. Those who did not want to go for cervical cancer screening in future (4.2 per cent) gave various reasons which included fear because of the pain, lack of time and low perceived risk, for example one woman said; "*Handifungidziri kuti ndingavanayo*", meaning "I don't think Ican have that disease!"

Relationship between knowledge, attitudes and practices on cervical cancer and screening

Relationship between knowledge on cervical cancer and participants' attitudes and practices were also investigated. Of the 45 participants who knew what cervical cancer is, 77.8 per cent acknowledged that they were at risk of getting cervical cancer. There was a significant difference in the proportions screened (p-value = 0.002) between those who knew what cervical cancer is and those who did not. Nearly 96% of the 45 participants who knew what cervical cancer is, said they would be interested in getting screened for cervical cancer in the future. There was no significant difference (p-value = 0.965) on intentions to get screened in the future between those who knew what cervical cancer is and those who did not. There was a significant difference (p-value = 0.016) between participants who perceived self-risk of getting cervical cancer and those who did not, regarding their intention to get screened in the future. A higher proportion (95.7 per cent) of those who perceived self-risk wanted to get screened in the future compared to those who did not perceive self-risk (89.4 per cent).

IV. Discussion

The median age showed that most of the women interviewed were within the child bearing age group and according to American Cancer Society [1;2;19] cervical cancer tends to occur in midlife, with most cases found in women younger than 50, however more than 20 per cent of cases of cervical cancer are found in women over 65 especially when they have not been having regular screening. The median age was slightly higher than 36 years in a Cameroonian study [21]. While HIV infection puts women at risk of cervical cancer, condom use, which is part of the HIV-treatment package offers a protection against cervical cancer [21]. The odds of cervical cancer in HIV infection were found to be higher, compared to women without HIV infection, in a study in Ethiopia (COR=1.9, p=0.036)[22].The level of education was important in this study because education is believed to facilitate the assimilation of health education given to women in health institutions on common acute and chronic illnesses. The results from the study showed lack of knowledge regarding cervical cancer, its causes, and prevention and screening tests among HIV infected women. This was in contrast with Kenyan findings where 90% women knew about cervical cancer screening and 70% felt at risk of the cancer [23;24]. Eighty-four percent of the women in the Kenyan studies had been screened before. Due to high cancer awareness in Kenya, the women had developed stigma for cervical cancer as they associated it with HIV infection. Kenya has a more robust cervical cancer screening programme.

Although 55% of the respondents reported that cervical cancer can be prevented, only 39% of these respondents were able to mention screening as a prevention method. Like in a study done in Cameroon, use of condoms was also stated as a preventive method for cervical cancer[21]. The use of HPV vaccine was not mentioned as a preventive method at all in this study showing a big knowledge gap. Similar findings were found in Nigeria where only 3.1 per cent of the women could identify vaccination as a way to prevent cervical cancer[25]. The situation is different in developed countries for example, Donders et al, [26]showed that awareness of the cause of cervical cancer and HPV vaccines was very high and above 78percent in Belgium population. Knowledge of cervical cancer screening tests was low (7.2%) comparing with India (100%) and South Africa (41.9%) [27].The older women, those with tertiary education and the employed showed high levels of knowledge on cervical cancer and cervical cancer screening. Both relationships between employment status and knowledge of cervical cancer and between employment status and knowledge of cervical cancer prevention were statistically significant. These findings are agree with the results from a study done in Laos which showed that civil servants were more than 9 times more aware about cervical cancer than housewives. Those who had reached at least the secondary school education level were 3.2 times more aware than illiterates ones [28].

Thirty- nine (56.4%) of the respondents who had mentioned a screening test reported health care workers as the source of information. This figure is low considering that women in rural populations rely mostly on health care professionals to educate and recommend health care practices that are beneficial in terms of health promotion and also the fact that the sample was drawn from women who seek health care services on a monthly basis[5]. The results of this study also showed that the respondents had a positive attitude on cervical cancer and screening. About 77% believed that they were at risk of having cervical cancer though only 18 (8.7%) had screened for cervical cancer. Nearly 200 (95.8 per cent) respondents said they would like to screen for cervical cancer in the future. A statistically significant result was found on willingness to get tested in the future between participants who said they were at risk and those who perceived no risk. Those who perceived risk were more willing to get screened in the future. Like with knowledge, the older women in 45-49 age-groups (89.5 per cent) followed by those in the 35-39 age-groups (88.1 per cent), those with tertiary education (87.5 %) and the employed (81 per cent) had the highest proportion of perceived risk of cervical cancer. The odds of perceiving self-risk of cervical cancer was 5.05 times more in 35-39 age group compared to those less than 24 years and this difference was statistically significant (p-value = 0.040). These results are better than those from the study done in Laos, among rural women where approximately one third (38%) considered themselves to be at risk of cervical cancer [29]and in South Africa where more than half (60.8 per cent) of the respondents considered themselves at risk for cervical cancer. Women with HIV infection are recommended to have more frequent screening with cervical cytology: twice in the first year after diagnosis of HIV and, if normal, annually thereafter[30]. Unlike screening programs in developed countries which target the risk groups, in Zimbabwe there is no mass screening policy, hence, women in this study gave varying opinions on how often they should get screened for cancer. A recent study estimated that 63.0% of women in developed countries receive cervical cancer screening with the highest ranging from 80.0% to 90.0% whilst in developing countries screening is estimated at 19.0%, ranging from 1.0% in Bangladesh, Ethiopia and Myanmar to 73.0% in Brazil (Denny et al 2010). Only 8.7% of the participants had screened for cervical cancer. This shows that there are inadequate cervical screening practices among HIV infected women though the results cannot be generalized to represent the whole country since the study was done in a rural area. The results from this study supports evidence from earlier studies done in Zimbabwe for example a study done by Mupepi et.al [32] revealed that 91% of the 514 participants had never had cervical screening. Another study done by Gundani and Chipfuwa [33]to establish the extent to which HIV positive women at Bindura hospital, an urban setting, access cervical cancer services showed that most of the women (88.6%) did not get a Pap smear and only (11.4%) had a Pap smear. Thus, there is poor cervical cancer screening in both rural and urban areas. The results show the need to make cervical screening services readily available to the community and mostly the high risk group like HIV infected women. There is need to have educational campaigns on cervical cancer and screening to clear the knowledge gap and misconceptions as well as to motivate them as was echoed by some women. For example one woman said "*Hatina kumbonzwa zvichikurudzirwa*," literally meaning "we never heard it being encouraged."

V. **Conclusion**

The results showed that the majority of HIV infected women were not knowledgeable; 21.6% knew about cervical cancer. On the other hand, 92.8% did not know of any screening tests. Only 3.0% knew about VIA. The attitude of women aged 35-39 years was associated with cervical cancer screening (OR=5.05; 95% CI=1.08; 23.66). Finally, 95% who perceived being at risk of cancer, wanted to be screened in future. Cervical cancer screening needs to be integrated in routine HIV care as many women do not know about its availability and significance.

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