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Influencing Elements Impacting the Participation in Cervical Cancer Screening Among Women of Childbearing Age at Jinja Regional Referral Hospital, Eastern Uganda

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ABSTRACT

This research aimed to gauge cervical cancer screening participation and its influencing factors among Women of Reproductive Age (WRA) at Jinja Regional Referral Hospital (JRRH) in Eastern Uganda. Conducted from January to April 2021, the study utilized a cross-sectional descriptive design, surveying 370 WRA through pretested semi-structured questionnaires. Analysis was performed using SPSS version 20, presenting outcomes through tables, frequencies, percentages, and logistic regression analyses. Among the 370 respondents, merely 24.3% (90 individuals) had undergone cervical cancer screening. Of these, 14.1% had one screening, 7.0% had two screenings, and 3.2% had been screened three or more times. The primary mode of screening (11%) occurred during medical camps. Regarding awareness, 89.7% had heard of cervical screening, predominantly through radio broadcasts (41.0%), with 41.4% recognizing its purpose and 52.4% acknowledging its role in early detection and treatment. Furthermore, 94.3% viewed cervical cancer screening as a beneficial practice, with 81.1% advocating for other women to undergo screening, while 90% believed in promoting this practice. Culturally and religiously, the acceptance of cervical cancer screening was widespread. Demographically, most respondents (66.5%) fell within the 15-30 age bracket, with the majority identifying as Anglicans (33.8%) and 88.9% being Ugandan nationals. Educational attainment was predominantly at the secondary (37.0%) and tertiary (39.2%) levels. Regression analysis indicated that being Anglican significantly influenced the uptake of cervical cancer screening [OR=2.219(1.039 – 3.899); 95% CI, P=0.038)]. Despite increased knowledge and awareness about cervical cancer screening's purpose, treatment, and associated complications, uptake remains below desired levels. Notably, a substantial number of women did not seek screening due to the absence of signs or symptoms and lack of advice from medical professionals, exposing a gap in primary healthcare significance. The study underscores the need for heightened health education across healthcare platforms to emphasize the critical importance of cervical cancer screening and encourage more women to partake in this essential preventive practice.

Keywords: Cancer, Women, Cervical cancer screening, Pap smear test.

INTRODUCTION

Cancer of the cervix is one of the most common cancers among women and the leading cause of gynecological cancer death in low to middle-income countries [1-3]. Cervical cancer screening is a systematic approach to identifying

cervical abnormalities in an asymptomatic population and cervical cancer screening uptake is when a woman accepts willingly to undergo the screening process for cervical cancer. Women targeted for screening may feel perfectly healthy and see no reason to visit health facilities [4, 5]. The Pap smear test is acknowledged worldwide as being the most successful cancer screening test, yet women continue to die of carcinoma of the cervix, a theoretically preventable disease. Expectations of the pap test however exceeded its potential [6, 7]. Organized screening programs are required to decrease further the incidence and mortality of carcinoma of the cervix [8]. Cervical cancer is diagnosed following an abnormal cytology result or after the development of clinical symptoms. Women who have an abnormal high-grade cytology result for example from pap smears or symptoms are usually referred for further analysis [9]. A colposcopy is a stereoscopic, magnified examination of the cervix using a colposcope. The aim is to examine the cervical transformation zone and identify abnormal areas. A biopsy of the abnormal area is often performed to histologically confirm the diagnosis [9]. Screening of cervical cytology (Pap smear) should begin at age 21 and women under the age of 21 should not be screened regardless of the age of initiation of sexual activity or the presence of other behavioral related risk factors. Adolescent cervical cancer prevention programs need to focus on universal HPV vaccinations [10]. Globally cervical cancer is the leading cause of death in women [11]. In Uganda, cervical cancer is the number one cause of cancer-related death in women. According to the World Health Organization, approximately 3,915 women were diagnosed with cervical cancer and 2,160 of them died from the disease in 2014. Nationally, the prevalence of HPV among women in Uganda rates at 33.6% (which is high), and this combined with the low screening uptake has resulted in the country having one of the highest incidence rates of cervical cancer in the world at 47.5 per 100,000 women per year [12]. The high prevalence of cervical cancer may also be linked to the high rate of HIV/AIDS in Uganda. HIV/AIDS is a risk factor for cervical cancer [13-15]. Despite efforts by the Ministry of Health-Uganda, to encourage cervical cancer screening as a preventive measure among Ugandan women, its uptake in the country is still very low and women in Uganda are among the highest risk group of developing cervical cancer and at the same time are the least likely to be screened [7]. Particularly in the Eastern region, findings from Bugiri and Mayuge revealed a 4.8% cervical cancer screening uptake rate among women [16]. Additionally, to reduce cervical cancer incidence, morbidity, and mortality, cervical screening is paramount. Thus, it is on this background that the study is intended to determine the cervical screening uptake and associated factors among women of reproductive age at Jinja Regional Referral Hospital to guide decision-making and appropriate interventions to combat the increasing incidence rates of cervical cancer among Ugandan women.

METHODOLOGY

Study design.

A descriptive cross-sectional study design was employed during the study gathering for both qualitative and quantitative data.

Area of Study

The study was conducted at Jinja Regional Referral Hospital (JRRH) located in Jinja Central Division, Jinja city, Jinja district, Busoga sub-region, eastern Uganda; approximately 81Km (50miles) by road, east of Kampala, the capital and largest city in the country. Its geographical coordinates are $00^{0}25'52"$ N; $33^{0}12'18"$ E. JRRH is the only government-owned referral hospital in the Busoga sub-region serving as the referral hospital for the districts in the Busoga region and part of Buikwe, Kayunga, Buvuma, and Mukono. It also serves as one of the internship centers in the country. It has various departments including Obstetrics and Gynecology, Internal Medicine, Pediatrics, Surgery, and other special clinics including a gynecology clinic where specialized procedures are done including cervical

cancer screening. It has a bed capacity of over 600 beds.

Study population

The study population was women of reproductive age attending health care services at Jinja Regional Referral Hospital.

Target population

All sexually active women in Uganda.

Accessible population

Women of reproductive age attending health care services at Jinja Regional Referral Hospital during the time of data collection.

Sample size determination

The sample size will be determined using the Kich and Leslie formula for cross-sectional studies [17].

$$S = \frac{Z^2 \times P(1-P)}{\delta^2}$$

Where;

S=the sample size

Z=1.96 at 95% confidence interval.

δ=5% Margin of error

P= 4.8% rate of Ca Cx screening uptake as per a study done in Bugiri and Mayuge [16].

Therefore, the sample size will be;

$S = \frac{(1.96)^2 X\ (0.048)(1-0.048)}{(0.05)^2}$ = 70 women

Multiplying by a factor of 6, the desired sample size was 420 WRA

However, because of time and other resource limitations, **370 (88.1% of sample size)** respondents were approached.

Sampling Technique

After meeting the inclusion criteria, a simple random sampling technique was employed among women of reproductive age at the hospital.

Quality control

The questionnaires were pretested to ensure that all the study objectives were captured and that the study was significant to the target population and relevant authorities. Meetings with supervisors were conducted to sort out data collection problems.

Data collection method.

Questionnaires were prepared in English and those women who couldn't read or write English were helped appropriately by the researcher.

Inclusion criteria

All females 15-49 Years old were present during the time of data collection and had consented to participate in the study.

Exclusion criteria

Females meeting the inclusion criteria but were critically or mentally ill, and those who didn't consent were excluded from the study.

Data analysis and presentation

Collected data was coded and entered in SPSS version 20 for analysis. Summaries were presented in the form of tables, central tendencies, frequencies, and levels of statistical significance.

Ethical considerations

An introductory letter for data collection was obtained from the KIU- western campus faculty of clinical medicine and dentistry and permission to carry out research at the hospital was sought from the Executive Director of the hospital and the In-charge at the various clinics and wards. Informed consent was obtained from the respondents after explaining to them the purpose of the study. It was emphasized that participation was voluntary and that participants could withdraw from the study at any time they could with no penalty. Data collection was done with the utmost professionalism and respect without asking questions that could stigmatize or cause biases among research participants. The information from the research participants was kept confidential.

RESULTS

Compliance and Uptake of cervical cancer among women of reproductive age at JRRH

Out of the 370 women sampled, 280 (75.7%) had never screened for cervical cancer while only 24.3% (90) had ever had the procedure; of which 2.7% had screened from a hospital, 11.0% from a medical camp, 6.8% from a clinic and 3.8% from other health care settings. More than half of those who had screened had done it once (14.1%) whereas 7.0% and 3.2% had screened twice, and thrice or more respectively. Of those who had not screened, 40.3% of them were because they had no signs of cervical cancer, 21.6% just

because they had never been advised by a doctor, 7.8% said that they didn't know about the screening service and 6.0% could mention other reasons as seen in *table 01* below.

Table 1: showing uptake of cervical cancer screening among WRA at JRRH

Variable	Frequency (n)	Percentage (%)
Have you ever screened		
Yes	90	24.3
No	280	75.7
If yes, from where did you screen		
Hospital	10	2.7
Clinic	25	6.8
Medical camp	41	11.0
Others	14	3.8
N/A	280	75.7
How many times have been screened		
Once	52	14.1
Twice	26	7.0
Thrice or more	12	3.2
N/A	280	75.7
If not, why didn't you		
Do not have any signs of cervical cancer	149	40.3
Have never been advised by a doctor	80	21.6
Do not know about screening services	29	7.8
Other reasons	22	6.0
N/A	90	24.3

Source: Field Data

Social Demographic factors associated with cervical cancer screening uptake

Considering age, more than half (66.5%) of the participants were in the age bracket 21-30 while the rest (33.5%) were in the age range 31-65. The majority (33.8%) were Anglicans, followed by those from other religious denominations (23.5%). While 21.6% were Catholics, the SDAs and Muslims had equal numbers (10.5%). Almost all (88.9%) of participants were Ugandans with only 11.1% being non-Ugandans. About the level of attained Education, the majority (39.2%) had acquired tertiary training, followed by those who had attained Secondary level education (37.0%). 19.7% had acquired primary education while 4.1% had never gone to school as shown in Table 2 below.

Knowledge about cervical cancer screening

Out of the 370 participants involved in the study, 332 (89.7%) had ever had cervical cancer screening whereas 38 (10.3%) of them had never. Out of the 89.7% who had ever heard about cervical cancer screening, 152 (41%) had heard it from a Radio station, 68 (18.4%) from a Television station, 35 (9.5%) from newspapers, 11 (3%) from Seminars whereas 66 (17.8%) from other sources. More than half (52.4%) of the participants knew that cervical screening benefits women by having an early detection and treatment of the disease, 41.4% knew that the practice helps women to know their status, 4.1% mentioned that the exercise had no benefit to women while 2.2% could mention other reasons as reflected in table 2 below.

Social cultural factors and perception of cervical cancer screening

Data concerning perception found that 81.1% of the respondents would wish to advise fellow women to go screen for the same while the rest (18.9%) said they wouldn't. The biggest percentage (94.5%) saw cervical cancer screening as a good practice but 5.7% saw it as a bad one. Concerning cultural stand on the practice, 46.8% said that their culture accepts, 50.5% mentioned that their culture says nothing while 2.7% narrated that it is not acceptable. Similar findings were obtained considering their religious stand concerning the same where 48.6% said that it is acceptable, 47.3% that nothing is

mentioned about it whereas 4.1% that their religion doesn't allow it. A big percentage (90%) of the women agreed that the practice should be encouraged in the area, as illustrated in Table 2 below.

Table 2: showing socio-demographic factors associated with cervical screening uptake Knowledge and perception about cervical cancer (Ca Cx) screening.

Variable	Frequency (n)	Percentage (%)
Socio-demographic characteristics		
Age		
21-30	**246**	**66.5**
31-65	**124**	**33.5**
Religion		
Catholic	**80**	**21.6**
Anglican	**125**	**33.8**
Muslim	**39**	**10.5**
SDA	**39**	**10.5**
Others	**87**	**23.5**
Nationality		
Ugandan	**329**	**88.9**
Non-Ugandan	**41**	**11.1**
Level of Education		
Primary	**73**	**19.7**
Secondary	**137**	**37.0**
Tertiary	**145**	**39.2**
Others	**15**	**4.1**
Knowledge about cervical cancer screening		
Ever heard about Ca Cx Screening		
Yes	**332**	**89.7**
No	**38**	**10.3**
From where did you hear about it		
Television	**68**	**18.4**
Radio	**152**	**41.0**
Newspaper	**35**	**9.5**
Seminar	**11**	**3.0**
Others	**66**	**17.8**
N/A	**38**	**10.3**
How does Ca Cx screening benefit women		
Knowing status	**153**	**41.4**
Early detection and treatment	**194**	**52.4**
Has no benefit	**15**	**4.1**
Others reasons	**8**	**2.2**
Social cultural factors and perception of Ca Cx screening		
Would you advise other women to screen		
Yes	**300**	**81.1**
No	**70**	**18.9**
What is your take about Ca Cx screening		
Good	**349**	**94.3**
Bad	**21**	**5.7**
What does your culture say about Ca Cx screening		
Nothing	**187**	**50.5**
Accepts	**173**	**46.8**
Does not accept	**10**	**2.7**
What does your religion say about Ca Cx screening		
Nothing	**175**	**47.3**
Accepts	**180**	**48.6**
Does not accept	**15**	**4.1**
Should Ca Cx screening be encouraged		
Yes	**333**	**90.0**
No	**37**	**10.0**

Source: Field Data

Relationship between socio-demographic factors, knowledge about Ca Cx screening, social-cultural factors, perception towards Ca Cx screening, and uptake of Ca Cx screening

From Table 3 below, most of the socio-demographic factors studied i.e. level of education, age, and nationality of the respondents had no statistically significant relationship with the uptake of cervical cancer screening services. However, Anglicans were more likely [2.012(1.039 – 3.899), 95% CI; P=0.038] to go for the screening services as compared to those of other religious denominations. Surprisingly, knowing the benefit and having ever heard about cervical cancer screening services regardless of the source had no statistically significant relationship with the tendency of the women in Jinja town to go for the practice. However, looking at the numbers, the majority (83) of those who had screened (90) had never heard about screening services before; and also knew some benefit [helps to know status (36); early detection and treatment (51)] of the practice to women as seen in table 3 below. As there was a relationship between perception and uptake of cervical screening services as seen in the numbers i.e. out of the 90 who had ever screened, 75 of them would advise a fellow woman to go for screening, 87 saw it as a good practice and 82 agreed that the practice should be encouraged; there was no statistically significant correlation ($P<0.05$) between perception and uptake of cervical cancer screening services. For the part of cultural beliefs, out of the 90 women who had ever been screened, 41 women reported that their cultural beliefs say nothing about participation in cervical cancer screening, 48 women reported it accepted and this makes it a total of 89 women of the 90 who had ever screened whose culture doesn't in any way discourage uptake of cervical cancer screening, only 1 woman of the 90 who had ever been screened reported that her culture beliefs do not accept uptake of cervical cancer screening. Reviewing religious beliefs, from the 90 women who had ever been screened, 40 women reported that their religion taught nothing about uptake of cervical cancer screening, 45 women reported it accepted making a total of 85 women who reported that their religion didn't in any way discourage uptake of cervical cancer screening however the remaining 5 women out of the 90 women who had ever been screened reported that their religion didn't accept participation in cervical cancer screening. Based on these findings it showed that there is no significant correlation between culture and religion with the uptake of cervical cancer screening shown in Table 3 below.

Table 3: showing relationship between the various associated factors and CaCx screening uptake

Independent variable	Ever screened for CaCx?			Uptake of CaCx screening services	
Socio-Demographics	Yes (n)	No (n)	Total (N)	Odds Ratio (OR) (95% CI)	P – Value
Age					0.579
15-30	62	184	246	1.116(0.755– 1.649)	
31-49	28	96	124	0.966(0.857 – 1.089)	
Religion					
Catholic	17	63	80	1.197(0.559 – 2.566)	0.643
Anglican	39	86	125	2.012(1.039 – 3.899)	0.038*
Muslim	5	34	39	0.653(0.221 – 1.930)	0.440
SDA	13	26	39	2.219(0.940 – 5.237)	0.069
Others	16	71	87	Ref.	
Nationality					0.251
Ugandan	83	246	329	1.478(0.734 – 2.975)	
Non-Uganda	7	34	41	0.902(0.774 – 1.050)	
Level of Education					
Primary	16	57	73	0.561(0.168 – 1.879)	0.349
Secondary	30	107	137	0.561(0.178 – 1.766)	0.323
Tertiary Institution	39	106	145	0.736(0.237 – 2.288)	0.596
Others	5	10	15	Ref.	
KNOWLEDGE ABOUT CACX SCREENING					
Ever heard about CaCx Screening					0.371
Yes	83	249	332	1.357(0.678 – 2.718)	
No	7	31	38	0.919 (0.781 – 1.082)	
If yes, from where					
Television	15	58	73	3.879(0.474 – 31.754)	0.206
Radio	40	118	158	5.085(0.651 – 39.726)	0.121
Newspaper	9	30	39	4.500(0.521 – 38.901)	0.172
Seminar	5	9	14	8.333(0.835 – 83.167)	0.071
Others	20	50	70	6.000(0.742 – 48.490)	0.093
N/A	1	15	16	Ref.	
How CaCx screening benefit women?					
Knowing status	36	117	153	1.231(0.329 – 4.603)	0.758
Early detection and treatment	51	143	194	1.427(0.387 – 5.260)	0.594
Has no benefit	3	12	15	Ref.	
Other reasons	0	8	8	-	0.374
CULTURAL FACTORS AND PERCEPTION					
Would you advise other women to screen					0.531
Yes	75	225	300	1.167(0.715 – 1.903)	
No	15	55	70	0.955(0.831 – 1.097)	
How do you see CaCx screening?					0.270
Good	87	262	349	1.745(0.603 – 5.054)	
Bad	3	18	21	0.876(0.728 – 1.054)	
Culture Opinion					
Nothing	41	146	187	0.731(0.452 – 1.182)	0.202

Accepts	48	125	173	Ref.	
Does not accept	1	9	10	0.289(0.036 – 2.346)	0.245
Religion Teaching					
Nothing	40	135	175	0.889(0.546 – 1.448)	0.636
Accepts	45	135	180	Ref.	
Does not accept	5	10	15	1.500(0.487 – 4.622)	0.480
Should CaCx screening be encouraged					0.686
Yes	82	251	333	1.139(0.600 – 2.163)	
No	8	29	37	0.962(0.803 – 1.151)	

DISCUSSIONS

Compliance and Uptake of cervical cancer among women of reproductive age at JRRH

With various literature proving that cervical cancer screening plays a huge role in the reduction of the incidence of cervical cancer worldwide the level of cervical cancer screening uptake varies both within countries and across the different regions [11]. In Patras West Greece for example, the uptake of cervical cancer screening among women was reported to be low whereby one in two women had not screened for cervical cancer in their previous three years [18]. Similarly, cervical cancer screening uptake rates among all the European Union member countries showed extensive variations with the highest screening uptake in the UK, Norway, and Sweden while the lowest uptake rates occurred in Hungary and the Slovak Republic [18]. Not like the above findings, this current research reveals that only 24.3% of the women in Jinja Town had ever screened for cervical cancer; with 14.1% having screened once, 7.0% twice, and 3.2% having ever screened three or more times. It has also been found out a vast number (11.0%) of these women had a chance to be screened from medical camps followed by those who accessed the service from the clinics. For those who hadn't screened, among other reasons mentioned 40.0% claimed that they didn't screen just because they had no signs of cervical cancer, 21.6% due to lack of advice from a doctor, and 7.8% simply because they didn't know about the screening services. These findings are similar to those obtained in West Iran where the overall uptake of cervical screening was about 32% which still was way lower than that in the developed countries. Unlike in this current study, the levels of uptake were observed to be higher in women who had health insurance but lower among postmenopausal and women over 60 years of age [19]. In Uganda (in 2015) where a series of barriers to cervical screening uptake were discovered, the level of uptake of the service was seen to be very low [20].

Social Demographic Factor associated with cervical cancer screening uptake

This study showed that the majority (66. %) of the women were within the age 21-30 years and 33.5% were within 31-65 years however considering a Bivariate analysis, there was no statistically significant correlation between age and uptake of cervical screening services. Almost equal proportions had achieved either secondary (37.0%) or tertiary (39.2%) training but still, there was no statistically significant ($P<0.05$) relationship between the level of education attained and the uptake or willingness to go for cervical cancer screening services. This was similar to an earlier discovery by Waiswa et al. [21] where the level of education had no significant correlation with the level of uptake of cervical screening services in some parts of Northern Uganda. Considering religion the majority (33.5%) of the women were Anglican and a multinominal regression analysis also revealed that Anglicans were 2.219 times more likely to attend cervical cancer screening services as compared to women of other religious denominations [(OR=2.219, 95% CI; 1.039-3.899) (P=0.038)]. These findings were contradictory to the discoveries from a

study done in greater Chicago in a diverse group of American Muslim women, where a relatively high percentage of women reported having received the Pap test in their lifetime. However, women who viewed health problems as a punishment from God had decreased odds of having undergone cervical cancer screening [22].

Knowledge, social-cultural factors, and perception about cervical cancer screening

This research has found that almost all (89.7%) of the women sample had ever heard about cervical screening services with the majority (41.4%) having heard it from a radio station. The majority of the women knew about the benefits of screening for cervical cancer whereby 52.4% knew that it helps in the early detection and treatment of the disease while 41.4% knew that it helps a woman to know her status. However, slightly above, these findings were similar to those discovered in Oyam district at various health center IIIs where 62.7% had ever heard about cervical cancer screening services [21]. This increased awareness could be partly due to the efforts by the Ministry of Health in partnership with reproductive health in which cervical cancer screening has been made free and sensitization and demystification of the varied misconceptions about the practice have been emphasized on various communication platforms including through the different media houses. Unfortunately, the level of turn-up (24.3%) for the service is still non-satisfactory despite this knowledge not only about the screening but also about its benefits to women. Similar findings have been seen in China where the screening attendance rate was far from satisfactory, especially in rural areas however is the case due to a lack of knowledge about the benefit of getting screened for cervical cancer [23]. Much as most women had never screened for cervical cancer, 81.1% agreed that they would advise a fellow woman to go for the service, and 94.3% affirmed that cervical screening is a good practice whereas 90% agreed that the practice should be encouraged among women in Jinja town. From a cultural perspective on the practice, only 2.7% whose culture didn't accept cervical screening services, and similarly only 4.1% whose religion didn't allow women to screen for the same. While cervical cancer screening was generally accepted both by religion and culture, there was no statistically significant correlation between these two independent variables and the uptake of cervical cancer screening services. These findings show that women are aware of the benefits of screening and have a generally positive attitude towards the practice.

CONCLUSION

Based on the findings of the study, uptake of cervical cancer among women of reproductive age is still non-satisfactory regardless of the increased knowledge and awareness about the purpose of screening, treatment, and complications associated with the disease in addition, this study has realized that a significant number of women didn't screen because of not having signs and symptoms and not being advised by medical professionals which has shown gap in the significance of primary healthcare. Therefore, more emphasis should be put on more research and via various bodies of healthcare delivery to encourage more women to take up cervical cancer screening elaborating on its utmost importance.

Recommendations

Considering the results of this research, the study recommends the following should be implemented and/or explored for a better outcome concerning the level of uptake of cervical cancer screening services. Further research about other factors related to the poor uptake which this study may have not captured including the cost of the service, occupation of the women as a limiting factor, and knowledge and attitude of their spouses towards screening. This will provide a broader pool of factors leading to a low uptake of the services and also help in administering interventions to appropriate persons and on time. More sensitization and campaigns towards the benefit of screening and also the adverse

effects of not screening; through engaging the mass leaders, especially religious leaders, political leaders, and other influential figures in the communities. Vaccination as a sure measure against the HPV virus should be instituted among the appropriate age groups to reduce the risk of developing the disease. Healthcare providers should always advise their clients on the benefits and how often they endeavor to go for cervical cancer screening services. Most importantly the Ministry of Health through its various levels of health care delivery should ensure that there is a reasonable funding gazette to outreaches especially involving sensitization and screening for cervical cancer.

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