

**PREVALENCE AND ACCEPTABILITY OF CERVICAL CANCER SCREENING
AMONGST WOMEN ATTENDING RECEP TAYYIPERDOGAN HOSPITAL IN
MOGADISHU. A CROSS SECTIONAL STUDY**

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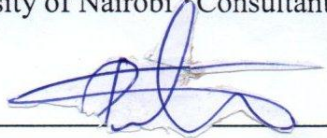
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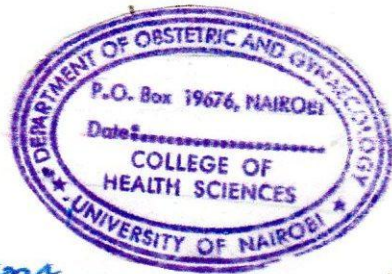
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DEDICATION

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LIST OF ABBREVIATIONS

HPV:HUMAN PAPILLOMA VERUS

LEEP: LOOP ELECTRICAL EXCISION PROCEDUR

LMIC: LOW AND MIDDLE INCOME CONTRIES

RT: RECEPTAYYIP

SCC: SQUAMOUS CELL CARCINOMA

WHO:WORLD HEALTH ORGANIZATION

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ABSTRACT

Background: Cancer of the cervix is the fourth commonest cancer in the world among women. Africa has a total population of 268 million women aged 15 years and over who are at risk of having cervical cancer. Out of this population, approximately 80,000 of women are diagnosed with cervical cancer every year with over 60,000 dying from the disease. It has been reported that in Somalia, over 967 new cervical cancer cases are diagnosed annually, and it's the second leading cause of cancer for women of 15-44 years of age.

Objectives: To determine the prevalence and acceptability cervical cancer screening among women attending the Gynaecological Outpatient Clinic (GOPC) in Recep Tayyip (RT) Erdogan Hospital, Mogadishu, Somalia.

Methodology: This study was a cross-sectional descriptive study that was conducted to assess the acceptability of cervical cancer screening among women attending GOPC in RT Erdogan Hospital, Mogadishu, Somalia. A Sample size of 384 participants was required for the study. Sampling was done by taking a random sample of all women attending GOPC. Data was coded and analyzed using SPSS version 23. Categorical data was analyzed and presented as frequencies and proportions, while the continuous data was summarized and presented as means and standard deviations, where applicable median and inter quartile range was reported.

Results: A total of 423 eligible women participated in the study, whose mean age was 29 (SD=9.8) years, while the median age was 27.0 (IQR=11) years. Majority of the women were from the age group 18 to 25 and 26 to 35 years with 164 (38.8%) each, and 403 (95.3%) women were residents of Mogadishu. The study found that only 20 (5.3%) of them had been screened, and only 76 (18.0%) of all the women having heard of cervical smear test. The study found that only 26 (6.1%) had heard of the vaccine of which only 2 (8.7%) had been given with HPV vaccine. The study found that only 48 (11.1%) had heard it. Only 21 (50.0%) heard it. from a health facility. The study found that the top most barrier for not going for cervical cancer screening were that it was costly being mentioned by 78 (45.1%) of the respondents, and that they were healthy mentioned by 54 (31.2%) respondents, and not knowing where to get screening which was mentioned by 27 (15.6%) of the respondents.

Conclusion: There is low prevalence of cervical cancer screening, low awareness about cervical cancer and acceptability of HPV vaccination among women attending GOPC at RT Erdogan hospital.

CHAPTER ONE

INTRODUCTION

Cancer of the cervix is one of the leading cancers in women. From the 2008 global estimates, it has been revealed that roughly 530,000 new cases are reported with 275,000 deaths every year (1). The National Cancer Institute of the United States 2016 estimated that close to 12,990 of its women would be diagnosed with cervical cancer with 4,120 dying (2). It has been reported that in Africa, 34 out of every 100,000 women are diagnosed with cervical cancer while 23 out of every 100,000 women die annually. According to the WHO data, Cervical Cancer Deaths in Somalia hit 564 or 0.45% of the deaths (23). The Age Adjusted Death Rate is 21.7 per 100,000 of population, this puts Somalia at number 26 globally (24). About 967 new cervical cancer cases are diagnosed annually, ranking second leading and comm

onest cause of cancer for women aged 15 to 44 years (3). However, the highest incidence rates greater than 40 per 100,000 are found in Eastern and Southern Africa. There are also marked variations in various regions such as Southern Africa, where the highest frequency is found in Lesotho and Swaziland. The two countries have neither screening nor anti-cancer therapy with 1 and 2 doctors per 10,000 populations, respectively.

Cervical cancer is a public health challenge especially in developing countries. It is reported that after breast cancer, it is the second most commonly diagnosed cancer and third leading cause of cancer death. Close to 90% of cervical deaths globally are reported in developing countries, with India alone accounting for over 25% of the overall cases in the world. Cervical cancer incidence and mortality rates are highest in sub-Saharan Africa, Central and South America, South-eastern Asia, and Central and Eastern Europe respectively (18). Geographic variation in cervical cancer is as a result of deviations in the accessibility of screening that prevents the development of cancer by detecting and removing precancerous lesions and generality of human papilloma virus (HPV) infection (19).

Cervical cancer deaths are preventable by screening, vaccination, and treatment. In the year 2012, approximately 527,000 new cases of cervical cancer and 265,700 cervical cancer deaths were reported in the whole world. If these estimates are anything, the number of deaths is expected to increase to 443,000 every year by 2030; this presents a 67% increase. In low-and-

middle-income countries (LMICs) cervical cancer is the most common cancer in the world among women (27), it still remains the commonest cancer in women in Eastern and Central parts of Africa.

In developed countries that carry out regular screening, cervical cancer rates have gone down by 80% over the last 4 decades (20). The rates have also declined in some low-income countries (LMICs) like Colombia, the Philippines, and India as a result of regular screening activities and developed socioeconomic situations (21). However, the strength of cancer screening is less clear with various studies showing relative and absolute incidence of receding (11). Many primary and secondary prevention strategies have been formulated to prevent HPV (29). Developed countries have managed to reduce the cervical cancer load by over 70% by use of cytological pap smears. Various preventive approaches are presently being used in high-income countries like the use of novel prophylactic vaccines and many secondary preventive approaches. Many of these interventions are presently not practical in developing countries due to inadequate health care infrastructure (30). Majority of women in less developed countries presented with advanced diseases only suitable for palliation. In Sudan for instance, 197 women were diagnosed with cervical cancer in the year 2007 out of which 141 (71%) had advanced stage disease (25), while in Kampala, Uganda, the population-based registry presented 5-year survival rates between 1993 and 1997 for cancer patients and compared these rates to African-American cancer patients diagnosed during the same time period in the United States. The Kampala Registry had a grand total population of 1.2 million people. The absolute and relative 5-year survival of women in Kampala was 15.9% and 18.2%, respectively about 60% in African-American women in the United States. According to Gondoset *al.* the 5-year absolute and relative 5-year survival was 26.5% and 30.5%, respectively in Harare, Zimbabwe, compared with around 60% for African-American women during the same time period. These low rates were a result of advanced presentation of the disease (26). Many countries with well-developed cervical screening programs have shown significant in their incidence and death rates (10) due to increased detection and effective treatment of precursors of squamous cell carcinoma (SCC) which is the commonest histological discrepancy of cervical Cancer. It has however, been reported that the rates of cervical cancer has gone high in Zimbabwe, Uganda and some countries of Eastern and Central Europe. It has also increased in Europe, Japan, and China as a result of increased HPV ratios linked to changing sexual practices and lack of screening (22).

Several causes may contribute to the high burden of the disease which may include presentation at an advanced stage, lack of information about the disease and the absence of screening among people. It is also imperative that women of reproductive age in developing countries like Somalia must have an understanding of early cervical cancer screening. This study therefore, aimed at determining the prevalence and acceptance of cervical cancer screening among women attending GOPC.

CHAPTER 2: LITERATURE REVIEW

Human papillomavirus (HPV) is a virus that causes cervical cancer. It is a viral infection of the reproductive tract believed to have a causative role in all cases of cervical cancer (4). This disease affects young aged groups due to early sexual activity, multiple sexual partners, and exposure to other sexually transmitted infections like HIV. Sexual intercourse is the main route of acquiring cervical HPV infections, with close to 80-90% of infections exonerated by the body within a few years. It is believed that sexuality active women are at higher risk of cervical cancer (7). Study findings indicates that close to 291 million women (10.4%) globally at any given time have cervical HPV infection. The proportion of infected women is higher and in the more sexually active age groups (8).

There are over 100 types of reported HPV out of which 13 or more are causing cancer. It is also reported that two types of HPV are responsible for 70% of all cervical cancer cases (28). Several HPV types have been identified but only a few of HPV types have shown to cause cervical cancer. HPV are definitively carcinogenic to humans including HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 (5). HPV 16 and 18 are the most common sub-types identified in cervical cancer and together they are responsible for 70% of cervical cancers worldwide (6). The estimated ratio of cervical HPV 16 and / or 18 infections in cervical cancer is approximately 3.9% globally and it varies across populations; there is little difference in overall prevalence between more and less developed regions. The prevalence of HPV in cervical tumours and precancerous lesions is substantially higher. For example, prevalence of HPV 16 and / or 18 globally is 25.5% in low-grade cervical lesions, 51.5% in high-grade lesions, and 70.0% in cervical cancer (9).

According to the World Health Organization (WHO), understanding and detecting the symptoms of cervical cancer can be seen with early diagnosis, but it is often difficult to achieve required results (12). The organization further recommends a comprehensive approach to prevention and control that includes multidisciplinary interventions such as community education, social mobilization, vaccinations, screening, treatment and palliative care across the life course.

There are many tests available that can effectively detect with low-cost treatment options. HPV vaccines are helpful; they can prevent many cervical cancer cases in the world. The understanding of the anatomy of the female pelvic structures could help health-care givers involved in cervical cancer management to carry out screening, community education, diagnosis and pre-cancer treatment. They can also refer to women who have the highest levels of responsibility.

2.1 Pathophysiology of Cervical Cancer

The cervix is the lower third of the uterus measuring about 3 cm in length and 2.5 cm in diameter in a fertile age woman who is not pregnant. The ectocervix is the lower part of the cervix that lies above the vagina that is seeable with a speculum, while the endocervix is 2/3 of the cervix which is not visible. Many cervical cancers evolve between the ectocervix and the endocervix in an area commonly referred to as transformation zone (16). The cells and location of this area are different just like the hormonal levels at different ages throughout a woman's life. Pre-cancerous abnormalities start in extremely metaplastic cells of the cervical cancer. In its developed stages, cervical cancer may spread to other parts. Two types of cervical cancer develop in two different parts of the female genital tract. The first is known as squamous cell carcinoma, which develops in the cervix while the second is adenocarcinoma that originates from the endocervical columnar cells located in the cervix to the uterus passage. The majority (80%) of invasive cervical cancer are squamous cell carcinomas while adenocarcinomas are diagnosed more often (20%) (16).

The International Federation of Obstetrics and Gynecology (FIGO) for Prognosis and Plan of Treatment (17) describes the stage I of cervical cancer as carcinoma and the diagnosis of microscopic cancer, examination of removed tissue, preferably a cone that includes the total lesion; Stage II extends beyond the cervix but does not widen into the pelvic wall. The carcinoma includes the vagina but not beyond the lower third; Stage III is carcinoma that extends into the pelvic sidewall. On rectal investigation, there is no cancer-free space that comes in between the tumor and the pelvic sidewall. The tumors includes the lower third of the vagina. All cases with hydronephrosis or non-functioning kidney are Stage III cancers. Stage IV is finally carcinoma that extends beyond the true pelvis and it involves the mucosa of the bladder and / or rectum. The Tumor spreads by direct extension of the cervical epithelium to the stroma and then

to the parametrium. Lymphatics tumor cells are lymphanodes, they are also spread hematogeneusly. The most frequent site of these metastatic is the liver, lung, brain and bones.

2.2 Clinical Features of Cervical Cancer

The primary phase of cervical cancer can be present without vaginal bleeding while vaginal mass could be an indication of the existence of malignancy. Moderate pain during sexual intercourse, heavy, watery bloody vaginal discharge with foul odor could be symptoms of cervical cancer. In a progressive disease, metastases can be seen in the abdomen or lungs. Other symptoms of cervical cancer may include: back pain, leakage of urine or feces from the vagina, loss of appetite, fatigue, weight loss, pelvic pain, leg pain, swollen legs, heavy vaginal bleeding, and bone fractures. Bleeding after douching or after pelvic examination is also an ordinary symptom of cervical cancer.

2.3 Prevalence of human papilloma virus and cervical cancer screening

The American Cancer Society report by Smith R. et al. estimated that 13,240 women will be diagnosed with invasive cervical cancer while 4,170 women will die from the disease in the year 2018. Other reports indicate that cervical cancer incidence and mortality rates have declined with the use of the Papanicolaou (Pap) test in the mid-20th century. From the years 2006-2014, cervical cancer incidence rate decreased by 0.3% per year between 2003-2014, cervical cancer mortality rates decreased by 0.8% (74).

A study by Lixin T. (2004) of 728,704 women who were screened of cervical cancer revealed that the ratio of intraepithelial cervical neoplasia (CIN) I, II, III was 50.2, 34.0, and 36.4 per 100,000 respectively. The prevalence of cervical cancer was at 12.2 per 100,000 (75).

Ranjit (2016) conducted a study in Nepal on screening of women for cancer with a total of 829 women taking part. There were 816 women who answered relevant survey questions in which, 710 (87.0%) knew nothing about cervical smear tests. It is only 39 (4.7%) of the 829 women had undertaken cervical smear. The analysis indicated that cervical smear was closely linked to literacy (adjusted odds ratio [aOR] 3.26, 95% confidence interval [CI] 1.25-8.51, $P = 0.016$) and living in rural areas (aOR 0.48, 95% CI 0.24-0.96 $P = 0.038$). The report showed that Nepali women rarely undergo cervical smear screening (76).

According to Khadija et al, who had conducted a cancer screening study among Somali women in a Kenyan Urban settlement (2017), found that 32.7% of the women had Pap smear test. The study significant factors for screening were Pap smear test (AOR = 4.48, 95% CI: 1.16-17.29, p

= 0.03), perceived susceptibility to cervical cancer (AOR = 18.41; 95% CI: 4.88-69.43, $p < 0.001$) and no apparent shame of pap smear test (AOR = 12.02, 95% CI: 2.75-52.48, $p = 0.001$) (77).

HPV vaccines are prepared from empty protein shells called virus-like particles (VLPs) produced by recombinant technology. They do not contain any live biological product or DNA, so they are non-infectious. Current HPV vaccines are designed to protect against HPV 16 and 18; Vaccine Trials have been conducted predominantly in North America, and Latin America and Europe (78). One month after, the third dose of HPV vaccines was close to 100% of 15-26 years of age in vaccine trials with a noticeable HPV genotype, the levels were 10-104 times higher than in natural infections (79) (80) (81). The antibody levels obtained after vaccination were reciprocally related to age. The antibodies to the hepatitis B vaccine (recombinant) and the quadrivalent HPV vaccines were similar if they were used at the same time (82), relentless HPV infection accounts for all cervical cancer cases; 90% of anal cancers; 70% of oropharyngeal cancers; and 60% - 70% of vaginal, vulvar, and penile cancers. Although 3 HPV vaccines have been authorized by the FDA, the 9-valent HPV vaccine is currently available in the USA. An estimated 29,100 HPV-connected cancer cases could be avoided every year with the HPV-9 vaccine (74). A school-based HPV vaccination was implemented in Alberta, Canada in which Kim *et al* (2008) assessed the influence of vaccination on Pap test cytology results using databases that connected vaccination and cervical cancer screening results. HPV vaccination indicated that the detection of high-grade cervical abnormalities and high-grade cytology were strongly associated with high-grade cervical cancer. The ACS recommends the immunization of all children at the age of 11-12 years in order to protect against HPV infections. The vaccination series can be started at age 9 years. In October 2016 after FDA approved a new dosing schedule for HPV vaccination, the Advisory Committee on Immunization Practices recommended a new 2-dose schedule for girls and boys who initiate immunization series at the age of 9-14 years while late vaccination for one-dose vaccinated children at recommended ages must be accomplished as soon as possible. Three doses remain recommended for those initiating the vaccination series at ages 15-26 years and for immuno-compromised persons (74).

2.4 Knowledge on Cervical Cancer Screening

In Pakistan, it was reported that only 5% of women were aware of cancer screening and 2.6% of them took Pap smear once (31), moreover screening is not quite available in many parts of the country as it was not routinely done in gynecological practice. Of all the interviews done, only 1.8% of respondents didn't know cervical cancer as a disease, and only 23.3% were aware that it was a common cause of gynecological cancers. It was also reported that 78% of respondents were aware that infection was the most common cause of cervical cancer, with 62% of the respondents that it is caused by a virus, while 61% of the respondents knew that the virus was Human Papilloma Virus (HPV). Majority recognized that it is sexually transmitted but only a minority (41%) knew that it can be detected by PCR. Only 26% of the study population was aware of one or more risk factors. Thirty seven percent recognized Pap smear as a screening test. In total only 37 out of 400 respondents were aware of the HPV vaccine (32).

In South Eastern Nigeria, a study of 220 patients found 134 (60.9%) with cervical cancer awareness and 118 (53.6%) were sexually active with average age at sexual debut at 21.2 years. The mean age of students was 23.8 years and the age range was 17-39 years with 175 (80.0%) in the age range of 20-29 years. Close to 2/3 of the students were unaware of Pap smear and none of them had undergone a Pap screening test before. This low involvement in screening for cervical cancer was as a result of the non-existence of a test, lack of awareness on centres where such services are offered, ignorance on the value of screening and the risk factors that leads to development of cervical cancer (33).

In Gabon, a study was done on awareness of cervical cancer and it was established that of the 452 participating women, 91.6% (414/452) were aware of cervical cancer, of which 62.3% (258/414) felt moderately / extremely concerned about cervical cancer. Only 22.7% (94/414) of women reported knowing the causes of cervical cancer. The most frequently cited causes of cervical cancer were abortion and sexually transmitted infection (including HPV) respectively in 29.8% (28/94) and 28.7% (27/94). The less frequently cited causes of cervical cancer were early pregnancy and high parity (2.1%, 2/94 each). When asked about the possibility of developing cervical cancer one day, 40.4% (38/94) of women believed they had no risk. Participating women acquired information about cervical cancer mostly from either foreign media or medical workers: 28.5% (118/414) and 27.1% (112/414) respectively. The awareness, knowledge and

attitude toward Pap smear testing only 27.9% (126/452) of the study participants had heard about cervical cancer prevention through screening. Among these, 65.1% (82/126) had had a Pap smear previously. The principal motivation to undergo Pap smear testing as cited by these women was “the demand of their doctor” (68.3%, 56/82). Some women reported being embarrassed about the test (61%, 50/82) and had experienced pain during screening (34.1%, 28/82). The main reason given by women who had never been screened for cervical cancer but had heard about it was neglect (50%, 22/44) (34).

A cross-sectional study for the medical workers of Mulago Hospital, Uganda recorded a response rate of 92% (285). From the respondents, 93% knew about cancer of the cervix, while public awareness of Pap smear was 83% among them. It was also reported that less than 40% knew of the risk factors for cervical cancer. Of the female respondents, 65% did not feel susceptible to cervical cancer and 81% had never been screened. Of the male respondents, only 26% had partners who had been screened. Only 14% of the final year medical students had vaginal speculum and 87% never performed a pap smear. (35).

A cross-sectional study by Abdikarimet *et al.*, in 2017, showed that 53.8% of respondents had no knowledge of Pap smear test. However, 69.2% of the participants reported they would seek cervical cancer services if given chance. Surprisingly, some of the participants (62.5%) were not aware of their perceived susceptibility to cervical cancer. More than half (55.8%) claim that doing Pap smear is unpleasant and embarrassing. Similarly, over half (53.8%) of the tests indicates that the test can interfere with virginity. Fifty nine (56.7%) of the participants also indicated that they could not do the test. When asked about preference, 86.5% preferred to be examined by female health providers (36).

A community-based cross-sectional study in Hossana Town, Hadiya zone, Southern Ethiopia found 270 (46.3%) of the respondents had poor comprehensive knowledge. Only 58 (9.9%) of participants had been screened for the cervical cancer before the survey. Two hundred three (34.8%) of participants had negative attitude towards selected proxy variables. Not having health seeking behavior for cervical cancer [AOR: 5.45, 95% CI: (1.18, 30.58), $P < 0.031$], had not ever received information about cervical cancer and its prevention [AOR: 2.63, 95% CI: (1.78, 8.84), $P < 0.018$] and not actively seeking health information about cervical cancer [AOR: 6.25, (95% CI: (1.26, 31.06) $P < 0.025$)] were significantly associated factors with poor knowledge.

Poor knowledge score was associated with poor attitude [AOR: 56.51, 95%CI: (23.76, 134.37), P <0.001]. Had not ever received information about the disease from any source [AOR: 45.24, (95%CI: (11.47, 178.54), P <0.001] was significantly associated factor with not to be screened for the disease. (37)

2.5 Acceptability of Human Papilloma Virus Vaccine and Cervical Cancer Screening.

Majority of women find it difficult to participate in cervical cancer screening services due to factors such as non-availability of screening services, fear of being diagnosed with cancer, difficulties of coping with cancer and lack of knowledge and awareness of cervical cancer and screening services. Likewise, the Somali women are afraid of losing their virginity during screening. A quantitative cross sectional hospital-based study of 2013 in Argentina on Acceptance of HPV vaccination reported that 95% of participants would be willing to be vaccinated against HPV: others were not willing to be vaccinated even if vaccination was free. Among those willing to pay for HPV vaccination, the 10-90th percentile ranges for the acceptable price was 3.20-49.17 Euro per dose, with a median of 11.50 Euro. In a study conducted in Singapore by Seow (1995), many women who were aware of Pap smear did not perceive themselves to be at risk and therefore did not indicate the future intention to have a smear (67). The study further revealed that it had increased the importance of screening for cervical cancer for women who had a smear.

A study conducted by Yu (1998), at Guy's Hospital in London to gain an insight into women's attitudes towards awareness of cervical cancer screening showed that embarrassment and discomfort played a great role in women's decision (73). In another study conducted by Dzuba and colleagues (2002) to explore the acceptability of self-collection of samples for human Papilloma Virus (HPV) testing in comparison with that of Pap test in Mexico, 98% of women reported privacy and comfort self-sampling procedure as a test that proved more discomfort, pain, and embarrassment than self-sampling (69). It was concluded that the incorporation of self-collected samples to detect HPV encouraged participation in screening. From the above studies, it is evident that there are many factors that affect women's acceptability of cervical cancer screening and such factors must enhance uptake of screening. Accepting issues of cervical cancer screening affects many countries; it is of importance in developing countries where screening services are not well developed.

A cross-sectional survey in 2009 in Botswana indicated that although only 9% (32/376) of respondents had heard of HPV vaccine prior to the survey, 88% (329/376) said they will definitely have their adolescent daughters receive HPV vaccine. Most respondents would get the vaccine for their daughters at a public or community clinic (42%) or a gynecological or obstetrician's offices (39%), and 74% would get it for their daughters if it was available at their schools. Respondents were more likely to say that they would definitely get HPV vaccine for their daughters if they had less education (OR = 0.20, 95% CI = 0.07-0.58) or lived more than 30 kilometers from the capital, Gaborone (OR = 2.29, 95% CI = 1.06-4.93). Other correlates of acceptability were expecting to be involved in the decision to get HPV vaccine, thinking the vaccine would be hard to obtain, and perceiving greater severity of HPV-related diseases.

Studies were conducted in Kenya and South Africa, whereby women were reported to have powerful frightening images of cancer. These fears may have contributed to women's reluctance to get screened. Images were associated with words such as "devour or eating", "putridity", or "plague". For instance, women in Kenya described the inevitability of cervical cancer and the belief that, (at a minimum), their womb will be "cut out", resulting in the loss of womanhood and sexuality (70). In South Africa, the pelvic examination is referred to as "hanging the legs" and women refer to the experience as "surrendering oneself." In this setting, a cervical examination is especially problematic, dirty "or promiscuous" (70).

According to Aniebue&Aniebue (2010) on knowledge and practices of cervical cancer screening among female undergraduates in a Nigerian University, it was revealed that the practice of cervical cancer screening was still very low among female university students (71). The commonest reasons for not being screened include; ignorance of the existence of screening services, lack of doctor's recommendation and absence of symptoms. From this study it can be concluded that knowledge influences practice, for women using health services, they need to be empowered with adequate information on cervical cancer screening so that they can have a clear understanding of the services and its benefits so that they can freely use the service without waiting for the doctor's recommendation. In addition, screening services should be integrated into the existing university medical services so that female students can easily access them.

In Zambia, Mkumba (2006) conducted a study to assess the safety, acceptability, feasibility of implementation of cervical cancer screening program using Visual Inspection with Acetic acid. It

was established that it was feasible to implement the cervical cancer screening program in Zambia (72).

2.6 Sources of Information for Cervical Cancer Screening

Cervical cancer is the third most common cancer worldwide, however accurate information about cervical cancer to general public can lower the burden of disease and its mortality. The main objective of any screening program is to reduce mortality rates. Developing communication strategies for advocacy and participation can equally have a positive influence on acceptability (56).

Among women in the US, health care providers and the Internet were the most frequently cited sources of information about breast and cervical cancer screening. Other sources were family, friends, and other media. Over half of the participants indicated that nothing would prevent them from seeking information about these topics. These findings suggest that health care providers and the Internet can be important sources of information about breast and cervical cancer screening for women (57).

A cross-sectional study was conducted in Karnataka, India, on the chief sources of information for cervical cancer, where 18% from television, 19% from radio, 9.5% from elders , 14% from friends, 18.5% from doctors, and 12.5% from posters (58). The students also mentioned that the most popular source of information was the Radio (59).

A study of 17 online videos using the keyword "Cervical cancer" on November 12, 2015, found that there were videos describing the personal stories, risk factors, and the importance of screening. However, videos discussing all aspects of cancers were adequate. Likewise, videos from reputed organization were also lacking. The study concluded that cervical cancer was one of the leading causes of cancer as reported by the American Cancer Society and the World Health Organization (WHO). Researchers also strongly believed that quality videos via YouTube could help to lower the burden of the disease (60).

A study on knowledge and screening for cervical cancer among women attending outpatient department of teaching hospitals attached to Kasturba Medical College in Mangalore, India, found that the source of information about cervical cancer were, magazine (31.3%), television (16.9%), newspaper (16.9%), medical practitioner (15.7%), friends (7.2%), and the internet (6.0%) (61). Banda and Malata in their study on cervical cancer screening programs in the Blantyre district of Malawi found that the main barriers to cervical cancer screening were lack of

cervical knowledge and information cancer and lack of publicity about cervical cancer screening services (67). Another study by Abochie and Shokar (2009) revealed that lack of information about where to obtain screening services was one of the most prevalent barriers (63).

In a study done in Nigeria, cervical cancer awareness and information were estimated at 22.6% and 17.9%, respectively, with less effort reported from the media. About 5.7% believed that they may be at risk with only 1.6% having been screened. The study concludes that the level of awareness of cervical cancer and screening is low among the respondents, and that it is urgently needed (64).

A study done on the knowledge, attitude and practice for cervical cancer prevention and control among women in Hossana Town, Hadiya area, Southern Ethiopia found that 16.3% of the respondents had received information about cervical cancer from the health workers. Government health facilities (11.5%), private health institutions (3.4%) and other sources (1.4%) were the commonest sources of information about cervical cancer. Among participants who sought information about cervical cancer, television (11.5%) health professionals (4.1%), radio (3.9%), internet (3.6%), magazine (3.3%), and newspaper (1.5) were the main sources of information (65).

In a Kenyan study, cervical cancer patients reported that the Internet had an important role in the management of the disease in health education (17.6%). This was followed by online consultation (14.6%), booking of patients (13.6%), referrals (8.5%) and collecting data (7%), the use of Short Message Service (SMS) and mobile phone penetration in Africa (66).

2.7 Barriers to Cervical Cancer Screening

Because of the HPV vaccine and the potential of screening for and preventing precancerous lesions, cervical cancer is thought to be completely preventable. However, achieving optimal vaccination and screening remains a challenge in both high-income countries and LMICs. Although immunization against HPV can prevent cervical cancer, the vaccination coverage is not optimal in most populations worldwide. Moreover, even with a good coverage among adolescent girls, there are still two generations of women who have acquired the infection (38).

Screening will be the main preventive measure to reduce the burden of cervical cancer in these women. The main target of cervical cancer screening is to identify early-stage invasive cancer,

and more importantly, cervical intraepithelial neoplasia (CIN), a premalignant lesion that can progress to cervical cancer if left untreated (39).

Abdullahi *et al* (13) in their study found the Somali women residing in London lacking knowledge of the subject of screening, and other barriers to screening such as language difficulties, embarrassment associated with female circumcision, and the fear of the test Cervical cancer screening in Somalia. According to Johnson *et al* (2009) (14) who reported that of all African immigrants in the United States, Somali refugees and immigrants were less likely to have received Pap smear. Furthermore, there is a strong belief that these screening would not be necessary (15).

A systematic review of Sub Sahara Africa by Lin J. (2017) (40) in which eight studies exploring reasons women did not utilize cervical cancer screening reveals that women in SSA reported similar barriers despite cultural and language diversity in the region. Women reported fear of screening procedure and negative outcome, low level of awareness of services, embarrassment and possible violation of privacy, lack of spousal support, societal stigmatization, cost of accessing services and health service factors like proximity to facility, facility navigation, waiting time and health care personnel attitude. Facilities that lack comfort and privacy, high costs, and courtesy of providers, contribute to poor service delivery.

A qualitative study of community groups in ethnically diverse London by Marlow L (2015) found that there was a lack of awareness about cervical cancer in their community, and several did not recognize the terms ‘cervical screening’ or ‘smear test’. Barriers to cervical screening raised by all women were emotional (fear, embarrassment, shame), practical (lack of time) and cognitive (low perceived risk, absence of symptoms). Emotional barriers seemed to be more prominent among Asian women. Low perceived risk of cervical cancer was influenced by beliefs about having sex outside of marriage and some women felt a diagnosis of cervical cancer might be considered shameful (41).

A qualitative study in Mulanje, Malawi found that the primary cue to action for cervical cancer screening was symptoms of cervical cancer. (42). A qualitative study with a focus group among Muslim and Christian women in Nigeria (43) found that most participants in the focus group had heard about cervical cancer. Participants believed that wizardry, multiple sexual partners, and inserting herbs into the vagina cause cervical cancer. Only one participant knew about the human

papillomavirus. Among the Christian women, the majority of cervical cancer screening and cervical cancer screening was believed to prevent cervical cancer. Participants mentioned religious and cultural modesty, gender of healthcare providers, fear of disclosure of results, fear of nosocomial infections, lack of awareness, discrimination at hospitals, and need for spousal approval as barriers to uptake of screening. These barriers varied by religion across the geographical regions.

A qualitative study among Somali women in Oslo Norway revealed a lack of familiarity with cervical cancer and perceived irrelevance of screening, emotional barriers such as fear and embarrassment, practical challenges related to childcare, and language, cultural and religious concerns related to modesty and sexuality, and mistrust. Participant suggestions for reducing these barriers and facilitating screening participation included awareness creation, translated materials, and female practitioners (44). There is a paucity of data and studies on cervical cancer screening among women in Somalia, as they are considered to be infrequently screened for cervical cancer.

2.8 Screening Programs for Cervical screening

The main objective of a screening program is to reduce the rate of mortality. Cervix is amenable to screening by a number of methods which include visual inspection with acetic acid (VIA), magnified VIA (VIAM) visual inspection with Lugol's iodine (VILI), the Papanicolaou test, and HPV DNA testing (45). Screening can remove precancerous lesions or detect cancer at an early stage when there are more treatment options. Screening also aims to detect precancerous changes, which, if not treated, may lead to cancer. Women who are found to have abnormalities on screening need follow-up, diagnosis and treatment, in order to prevent the development of cancer or to treat cancer at an early stage.

WHO has reviewed the evidence regarding the possible modalities to screen for cervical cancer and has concluded that screening should be performed at least once for every woman in the target age group (30-49 years) when it is most beneficial; HPV testing, cytology and visual inspection with acetic acid (VIA) are all recommended screening tests; cryotherapy or loop electrosurgical excision procedure (LEEP) can provide effective and appropriate treatment for the majority of women who screen positive for cervical pre-cancer; "screen-and-treat" and "screen, diagnose and treat" are both valid approaches. Regardless of the approach used, the key

to an effective program is to reach to the largest proportion of women at risk and conduct quality screening, organized screening programs are designed to be more effective (46).

Papanicolaou (Pap) test is the cervical cytology test. A positive Pap test is followed by colposcopy, a procedure to examine the cervix for signs of disease (with or without biopsy), and then treatment, if necessary. Using the Pap test in population-based screening programs has helped reduce the incidence of cervical cancer by up to 80% in several countries over the last five decades (47).

Cervical cancer prevention and control program from the HPV infection, interventions include: vaccinations for girls aged 9-13 years before they initiate sexual activity; HPV transmission (along with other sexually transmitted infections, including HIV) - essential messages for the prevention of sexual transmission high-risk sexual behaviors; condoms promotion for those who are sexually active (16).

The second objective is screening for and pre-cancer treatment, and is intended to decrease the incidence and prevalence of cervical cancer and associated mortality, by intercepting the progress of pre-cancer to invasive cancer. Interventions include: counseling and information sharing; screening for all women aged 30-49 years to identify precancerous lesions, which are usually asymptomatic; Treatment of identified precancerous lesions before they progress to invasive cancer. Even for women who have received an HPV vaccination, it is important to continue screening and treatment when they reach the target age. The third objective is to treat cervical cancer, and to reduce the risk of cervical cancer. Interventions include: a referral mechanism of primary care providers; accurate and timely cancer diagnosis, by exploring the extent of invasion; If the cancer is limited to the cervix and areas around it (the pelvic / area), treatment can result in cure; provide the most appropriate treatment and offer assistance with symptoms associated with cancer or its treatment; advanced cancer: If the cancer involves tissues beyond the cervix and pelvic area and / or metastases, treatment can improve quality of life, control symptoms and a suffering; providing the most effective treatment and palliative care in tertiary institutions and at the community level, including access to opioids; palliative care to relieve pain and suffering (16).

2.9 Justification

Cancer carries an economic burden which includes direct costs of treatment and also indirect costs associated with the loss of productivity or due to the illness or premature death, and this has been a challenge in both the high and low resource settings (55). Cervical cancer trends in a given country mainly depend on the existence of effective screening program. Almost all of cervical cancer deaths could be avoided if known effective interventions were available to all women, including immunizing adolescent girls against human papilloma virus (HPV) and cervical screening and treatment of pre-cancerous lesions. There is a real need to increase the public awareness of the benefits of cervical cancer screening and HPV vaccination in order to prevent cervical cancer which could be averting causes and deaths. There is a likelihood that screening is low, with the most likely reason for this being that these women do not perceive themselves to be susceptible to cancer in the lesser likelihood of engaging in preventive behaviors.

Cervical cancer is a preventable disease and mortality can be reduced by cytological screening with early detection and treatment. However, women in Africa still present with advanced disease and mortality is high(83). This emphasizes the need for education on the disease and the need for screening so that the target population is able to cooperate in prevention of mortality from the disease. Countries with successful programs for cervical cancer awareness, prevention and screening modalities start the process in later teen-hood and early adulthood(84). Hospital patients raise awareness of the necessity of cervical cancer screening or provide cervical smear tests or HPV vaccinations. The findings of this study will provide information on the need for communitybased cancer education programs on cervical cancer screening, benefits and then incorporating these campaigns into the existing mass screening to increase uptake of the screening programs. This study is aimed at evaluating the prevalence and acceptability towards cervical cancer screening among women attending GOPC at RT Erdogan Mogadishu hospital.

2.10 Research Question

What is the prevalence and acceptability of cervical cancer screening among women attending GOPC at RT Erdogan Hospital Mogadishu?

2.11 Broad Objectives

To determine the prevalence and acceptability of the cervical cancer screening amongst women attending GOPC at RT Erdogan hospital Mogadishu

Specific Objectives

1. To determine the prevalence of cervical cancer screening among women attending at GOPC at RT Erdogan hospital Mogadishu.
2. To determine the acceptability of human papilloma virus among women attending at GOPC at RT Erdogan hospital Mogadishu.
3. To determine the sources of cervical cancer screening information among women attending at GOPC at RT Erdogan hospital Mogadishu.
4. To determine the barriers to preventive activities of cervical cancer among women attending at GOPC at RT Erdogan hospital Mogadishu.

2.12 Conceptual Framework

The conceptual framework shows the linkage between the independent and dependent variables, where the level of awareness and screening is determined by the accessibility of primary health care facilities and services, while attitude towards screening is determined by level of interest which may be negative or positive which will have a direct influence towards screening, and finally barriers towards screening is influenced by their choice to attend these screening facilities provided through primary healthcare services.

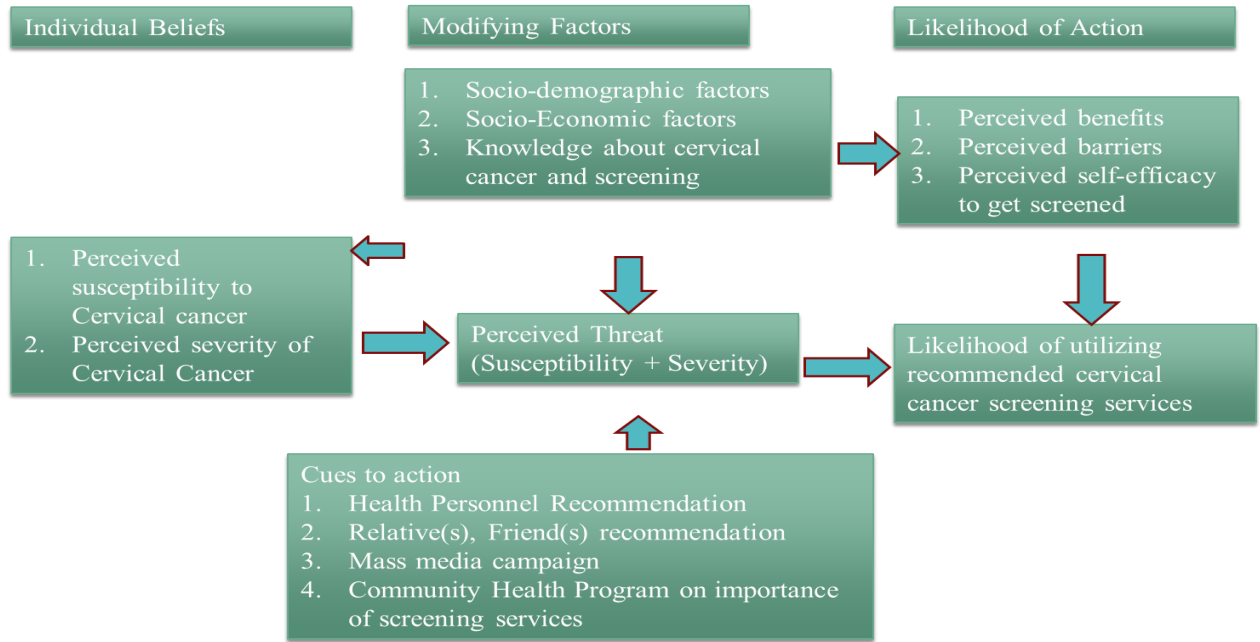


Figure 1: Conceptual Framework

CHAPTER THREE: METHODOLOGY

3.0 Study Design

This was a cross-sectional study was chosen because the disease and potentially factor are studies at specific time, also to assess the prevalence of condition in population. This study was to investigate the prevalence and acceptability of cervical cancer screening done among women attending the GOPC at RT Erdogan hospital.

3.1 Study Area

The study was conducted at RT Erdoğan Hospital, also known as the Digfer Hospital and the Somalia-Turkey Training and Research Hospital. It is a national hospital located at Hodan district in Mogadishu, Somalia. The hospital has 20 neonatal incubators, 14 newborn intensive care beds, 12 intensive care beds, 4 operating rooms, 10 dialysis machines, pediatrics unit, labour ward and maternity ward in-patient wards and out-patient wards of gynecological department and laboratory and radiology units.

3.2 Study Population

The study population consisted of women of reproductive age who were attending the GOPC and who were willing to participate by giving informed consent. The choice of this study population was based on the reasons that cervical cancer screening is advised to be started when a woman is above 14 years of age and sexually active because this is the age at which precancerous lesions can be detected.

3.3 Inclusion Criteria

Women attending GOPC and who are sexually active

3.4 Exclusion Criteria

Virgins and those reported ill during the time of the interview

3.5 Study Variables

The dependent variable was acceptability of cervical cancer screening while the independent variables were the demographic factors, knowledge, sources of information and individual beliefs.

3.6 Sample Size Determination

Sample size was calculated using the formula;

$$n = \frac{Z^2 \times P(1 - P)}{d^2}$$

Where,

n = Desired sample size

Z = value from standard normal distribution corresponding to desired confidence level (Z=1.96 for 95% CI)

P = expected true proportion (estimated at 50.0% for those accepting to be vaccinated against HPV, as there are no studies that have been done in Somalia or similar setting.)

d = desired precision (0.05)

$$n_0 = \frac{1.96^2 \times 0.50(1 - 0.50)}{0.05^2} = 384$$

A Sample size of 384 participants were required for the study.

3.7 Sampling Procedure

A random sample of all women attending GOPC were identified and selected for the study by the Principal Investigator. The participants were selected by simple random sampling. A total sample of 384 eligible women who were attending GOPC were enrolled to the study until the desired sample size was achieved.

3.8 Recruitment and Consent

Participants for the study were recruited from the RT Erdogan Hospital. Informed consent was obtained from the participants by the Principal Investigator prior to recruitment.

3.9 Data Collection

Data was collected via a printed questionnaire after obtaining informed consent from the participant. The questionnaires were self-administered and the information obtained

included socio-demographic characteristics, acceptability of cervical cancer screening and barriers. Any challenge experienced by participants, trained research assistants and the Principal Investigator were available.

3.10 Study Procedure

Due to the sensitive nature of issue under consideration, patients were taken to a private room where the study was explained and given privacy to fill the questionnaires. The research assistant was at hand in case the patients needed clarification.

3.11 Data Management and Statistical Analysis

Prior to data collection ethical approval was sought, thereafter recruitment of research assistants was done to assist in data collection. To maintain confidentiality, all questionnaires did not have identifying features such as names of the participants but a preassigned serial number. The questionnaires were checked for completeness prior to storing them in a secure lockable cabinet only accessible to the PI and the research assistants.

Data was entered and analyzed by the use of SPSS version 21. Categorical data was analyzed and presented as frequencies and proportions; continuous data was summarized and presented as means and standard deviations, where applicable median and interquartile range was reported.

3.12 Ethical Consideration

Ethical approval: This was sought from the Kenyatta National Hospital and University of Nairobi Ethical Review committee prior to commencement of the study. Institutional approval was sought from the KNH Scientific and Research department and the Department of Obstetrics and Gynecology. Permission and approval to undertake the study at the selected RT Erdogan hospital was also sought.

Informed consent: Informed consent was administered to all participants. The informed consent form was administered by the principal investigator and study assistants who had undergone training in ethical conduct of research. Persons who declined to provide informed consent were not allowed to participate in the study. Persons who chose to withdraw from the study were not coerced to do so.

Benefits of the study: This study sought to find the prevalence and acceptability of cervical cancer screening amongst women attending GOPC at RT Erdogan in Mogadishu, Somalia. This will benefit policy makers and health providers of concerned ministries and government departments on reproductive health services to closely monitor the standards of practice and also help design or improve those services dealing with screening for better outcomes so as to be of beneficial to women of reproductive age.

There were no potential risks to the participants during the course of the study, as no invasive procedures were performed on them. Confidentiality was maintained throughout by storing all data in a secure cabinet that remained locked during the study period.

3.13 Study Limitations

Patients who declined to participate in the study after recruitment, were replaced by recruiting anew participants to take their place. The possibility of recall bias, mostly from participants who were required to recall information from medical history and social history in regards to cervical cancer screening while filling the questionnaire was overcome by ensuring effective interviewing techniques that assured participants of their privacy due to the sensitive nature of some of the questions that require honest answers from past events.

CHAPTER FOUR: RESEARCH FINDINGS

A. Socio-demographic characteristics

Table 1: Socio-demographic characteristics of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency n (%)
Age	
<18	16 (3.8)
18-25	164 (38.8)
26-35	164 (38.8)
36-45	58 (13.7)
46-55	9 (2.1)
Above 55	12 (2.8)
Residence	
Mogadishu	403 (95.3)
Other (Outside Mogadishu)	20 (4.7)
Marital status	
Single	73 (17.3)
Married	329 (77.8)
Divorced	15 (3.5)
Separated	5 (1.2)
Widowed	1 (0.2)
Years in marriage	
1-5	129 (37.0)
6-10	96 (27.5)
11-20	82 (23.5)
>20	42 (12.0)
Number of births/deliveries	
1	72 (20.6)
2-4 children	156 (44.7)
5 and above children	121 (28.6)

As shown in table 1, the mean age of the women was 29 (SD=9.8) years, while the median age was 27.0 (IQR=11) years. Majority of the women were from the age group 18 to 25 and 26 to 35 years with 164(38.8%) each, and where 403 (95.3%) were residents of Mogadishu. The marital status of the women indicated that 329 (77.8%) were married.

B. Prevalence of Cervical Cancer screening.

Table 2: Prevalence of cervical cancer screening among women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

Ever been screened for cervical cancer (n=375)	
Yes	20 (5.3)
No	355 (94.7)

Out of 375 study participants, only about 20 (5.3) % have ever been screened for cervical cancer screening (table 2).

C. Knowledge and its sources of cervical cancer.

Table 3: Knowledge on cervical cancer of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency n (%)
Ever heard of cervical cancer	
Yes	137 (32.4)
No	286 (67.6)

On the knowledge of cervical cancer (table 3) 286 (67.6%) of them had never had of cervical cancer, while 137 (32.4%) had heard about it.

Table 4: Sources of Cervical Cancer Information (n=137) of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency	Percent of respondents
Television/Radio	17	12.4
Printed materials Brochures, posters and other	8	5.8
Health facility	47	34.3
Family, friends, neighbors and colleagues	57	41.6
Community Health Workers	8	5.8

Out of the 137 women who had ever heard of cervical cancer, 57 (41.6%) got the information from family, friends, neighbors and colleagues, 47 (34.3%) from health facility, 17 (12.4%) from television/radio, 8 (5.8%) from community health workers, and 8 (5.8%) from printed media (table 4).

Table 5: Knowledge on those affected by cervical cancer (132)of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency n (%)
Know someone with cervical cancer	
Yes	36(27.3)
No	96 (72.7)
How they came to know	
Through screening in hospital	17 (47.2)
They had symptoms suggestive	15 (41.7)
Don't Know	4 (11.1)

The respondents were asked if they knew someone with cervical cancer. Table 5 shows that only 36(27.3%) knew of someone, of which 17 (47.2%) said the person got to know through screening in hospital, 15 (41.7%) mentioned that the person had symptoms suggestive of cervical cancer, while 4 (11.1%) didn't know.

Table 6: Signs and Symptoms of Cervical Cancer (n=129) of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency	Percent of respondents
Vaginal bleeding between periods	7	5.4
Vaginal bleeding after the menopause	19	14.7
Persistent vaginal discharge	8	6.2
Menstrual periods that are heavier or longer than usual	1	.8
Discomfort or pain during sex	5	3.9
Persistent lower back pain	1	.8
Do not know	88	68.2

On the signs and symptoms of cervical cancer, Table 6 shows that 88 (68.2%) of the 129 respondents didn't know, 19 (14.7%) mentioned vaginal bleeding after menopause, 8 (6.2%) mentioned persistent vaginal discharge, 7 (5.4%) mentioned vaginal bleeding between periods, 5 (3.9%) said there is discomfort or pain during sex, 10(.8%) said persistent lower back pain, and lastly, 1 (0.8%) of them mentioning menstrual periods that are heavier or longer than usual (table 6).

Table 7: Knowledge of Risk factors for Cervical Cancer (n=112) of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency	Percent
Having multiple sexual partners	9	8.0

Early sexual intercourse	1	0.9
Cigarette smoking	9	8.0
Long-term use of contraceptive pill	7	6.3
Not going for regular screening	1	0.9
Do not know	84	75.0
Other virus, previous tumors	1	0.9

Table7 shows there were only 112 respondents who answered this question, of which 84 (75%) didn't know, while 9 (8%) said cigarette smoking, 9 (8%) mentioned having multiple sexual partners, 7 (6.3%) mentioned long-term use of contraceptive pill, 1 (.9%) said early sexual intercourse, and 1 (0.9%) who said not going for regular screening.

Table 8: Transmission of cervical cancer (n=405) of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency	Percent
Cancer of the cervix can be transmitted		
Yes	57	14.1
No	201	49.6
Do not know	147	36.3
How it is transmitted from person to person		
Sexually transmitted	45	75.0
Through contact with the sick	5	8.3
Through air	2	3.3
Don't know	4	6.7
Other	4	6.7

The respondents results as shown on table8 were asked if cancer of the cervix can be transmitted, 201 (49.6%) mentioned that it can't be transmitted, 147 (36.3%) did not know, while only 57 (14.1%) said it can be transmitted. Of those who said it can be transmitted, 45 (75%) mentioned that it can be sexually transmitted.

D. Knowledge and sources of HPV vaccine.

Table 9: Knowledge of HPV Vaccine of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency n (%)
Ever heard of HPV vaccine	
Yes	25(5.9)
No	398(94.1)
Sources of HPV vaccine information	
Television/Radio	5 (20.8)
Health facility	11 (45.8)
Family, friends, neighbors and colleagues	5 (20.8)
Religious leaders	1 (4.2)
Other	2 (8.03)
Disease HPV vaccine protects against	
Cervical Cancer	14(58.3)
Vulval Cancer	2 (8.3)
Anal Cancer	1 (4.2)
HIV/AIDS	5 (20.8)
Warts	2 (8.3)
Gutted HPV vaccine	
Yes	2 (9.1)
No	20 (90.9)
Allow daughter to get HPV vaccine	
Yes	6 (26.1)
No	17 (73.9)
Reason for not allowing daughter	
I am against all vaccination	1 (5.9)
The vaccine is not safe	6 (35.3)
My religion does not allow vaccination	3 (17.6)
The vaccine is not necessary	4 (23.5)
The vaccine will make young girls start sexual activity early	2 (11.8)
Others	1 (5.9)

On the knowledge of HPV vaccine as shown on table 9 above, 398 (94.1%) had never heard of the vaccine, while only 25(5.9%) had heard of the vaccine. From the 25 respondents who had heard about it, 11 (45.8%) mentioned that their source of HPV vaccine information was obtained from a health facility. They were also asked what the vaccine protects against, only 14 (58.3%) mentioned that it protects from cervical cancer. On being asked if they have been gutted with HPV vaccine only 2 (9.1%) had been gutted. There were also 17 (73.9%) respondents who

would not allow their daughter to get the HPV vaccine. The reasons were varied with the top most reason being the vaccine not being safe mentioned by 6 (35.3%) of them.

E. Sources of cervical cancer screening services.

Table 10: Sources of Cancer Screening Services of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency n (%)
Heard about cervical cancer screening/test	
Yes	47 (11.1)
No	376 (88.9)
Source of cervical cancer screening info	
Television/Radio	6 (14.3)
Printed materials Brochures, posters and other	4 (9.5)
Health facility	21 (50.0)
Family, friends, neighbors and colleagues	10 (23.8)
Community Health Workers	1 (2.4)
Possible to detect cervical cancer through screening	
Yes	33 (73.3)
No	6 (13.3)
Don't know	6 (13.3)
Cancer of cervix treatable if detected early	
Yes	36 (83.7)
No	5 (11.6)
Don't know	2 (4.7)
Facility in Mogadishu that offers screening	
Do not know	28 (82.4)
Digfeer Hospital	6 (17.6)
Recommended cervical cancer checkup frequency	
Yearly	15 (35.7)
Every 3 years	10 (23.8)
Every 5 years	3 (7.1)
I don't know	14 (33.3)

Respondents were asked if they have heard about cervical cancer screening test, table10 shows that 376 (88.9%) have never heard, and only 47 (11.1%) had heard about it. From those that heard about it, only 21 (50.0%) heard it from a health facility, and on being asked if it's possible to detect cervical cancer through screening, 33 (73.3%) said it's possible. They were then asked if cancer of cervix is treatable if detected early, 36 (83.7%) said its treatable. On the knowledge of a facility that offers screening, only 6 (17.6%) knew of a facility in which they mentioned

Digfeer Hospital, while on the frequency of checkup for cervical cancer, 15 (35.7%) said it should be yearly

Table 11: Place to reach women with cervical cancer screening messages (n=41) of the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency	Percent of responses
In women's groups	5	12.2
Places of worship (church/mosque)	2	4.8
Health facilities	27	65.9
At home	5	12.2
Others	2	4.8

On the place likely to reach women with cervical cancer screening messages, table 11 results show that only 41 responded, of which 27 (65.9%) mentioning health facilities, 5 (12.2%) who mentioned women's group, 5 (12.2%) mentioned at home, and 2 (4.8%) places of worship.

Table 12: Knowledge on Pap Smear among the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency n (%)
Ever heard of Pap Smear	
Yes	76 (18.0)
No	347 (82.0)
Pap Smear test is used for	
Testing sexually transmitted disease (STDs)	33 (48.5)
Treating Cervical Cancer	8 (11.8)
Cervical Cancer Screening	27(39.7)
No Pap Smear after HPV vaccination	
True	10 (16.4)
False	14 (23.0)
Don't know	37 (60.7)

The respondents were asked if they have ever heard of Pap Smear test, and the results are as shown on table 12. There were 347 (82.0%) who had never heard, while only 76 (18.0%) had heard of it. From the 76 of those who had heard about it, 33 (48.5%) said Pap Smear test is used for testing sexually transmitted disease (STDs), 27 (39.7%) said its used for Cervical Cancer

Screening, and only 8 (11.8%) said its used for treating cervical cancer. On the statement if ‘*No Pap Smear after HPV vaccination*’, 37 (60.7%) of the respondents didn’t know, 14 (23.0%) mentioned the statement to be false, while 10 (16.4%) said the statement was true.

F. Acceptance of cervical cancer screening.

Table 13: Acceptance of cervical cancer screening and HPV vaccine among the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019.

	Frequency n (%)
Willing to consult HCP for screening	
Yes	289 (69.1)
No	129 (30.9)
Who to be screened	
All women of child bearing age	163 (43.4)
Only women with symptoms suggestive of cancerous cervix	43 (11.4)
Only women with promiscuous life style	5 (1.3)
Don’t know	165 (43.9)
Last time screened for cervical cancer	
Less than 1 month ago	7 (33.3)
3 months ago	1 (4.8)
6 months ago	10 (47.6)
1 year ago	2 (9.5)
3 years ago	1 (4.8)
Who suggested screening	
Friend/family encouraged me	3 (13)
Health care providers suggested	16 (69.6)
Community health workers encouraged me	3 (13)
The services were free of charge	1 (4.3)
Are there reasons for not screening	
Yes	188 (47.7)
No	206 (52.3)

The results on table13 for the acceptance of HPV vaccine indicate that 289 (69.1%) of the respondents were willing to consult HCP for screening. On being asked who should be screened for cervical cancer, 165 (43.9%) respondents didn’t know, while 163 (43.4%) said all women of child bearing age, 43 (11.4%) said only women with symptoms suggestive of cancerous cervix,

and 5 (1.3%) said only women with promiscuous life style. They were also asked the last time they were screened for cervical cancer, 10 (47.6%) said they were last screened 6 months ago, 7 (33.3%) less than a month ago, 2 (9.5%) said 1 year ago, 1 (4.8%) 3 years ago and 1 (4.8%) 3 months ago. Sixteen (69.6%) of those had been screened mentioned that the suggestion to be screened came from health care providers. The respondents were asked if there were reasons for not screening, 206(52.3%) said there were reasons as shown in Table 14.

G. Barriers to preventive activities of cervical cancer screening

Table 14: Reasons for not going for Cervical Cancer Screening among the women attending GOPC at RT Erdogan Hospital at Mogadishu Somalia between April to June 2019

	Frequency	Percent of responses
It is costly	77	44.8%
Do not know where to get screening	24	14.0%
Do not have time	8	4.7%
I am healthy	54	32.4%
Fear of a positive outcome	8	4.7%
Lack of female screeners at the health facility	1	0.6%

Out of 172 study participants who provided answers on reasons for not going for cervical cancer screening (table 14), the top most reasons were that it was costly from 77 (44.8%) respondents, 54 (32.4%) who said they were healthy, and not knowing where to get screening which was mentioned by 24 (14.0%) of the respondents.

DISCUSSION

The purpose of this study was to determine the prevalence and acceptability of cervical cancer screening among women attending GOPC at RT Erdogan Hospital Mogadishu. The study was led by the following objectives: to determine the prevalence of cervical cancer screening, acceptability of human papilloma virus vaccine, the sources of cervical cancer, the barriers to preventive activities of cervical cancer screening among women attending at GOPC.

On the prevalence and awareness of cervical cancer screening, the study found that only 20 (5.3%) of them had been screened, with 76 (18.0%) having heard of cervical smear test, and 347 (82.0%) never having heard of the test. This finding is similar to the study conducted by Ranjit (2016) in Nepal in which only 39 (4.7%) of the 829 women had undertaken cervical smear and only 710 (87.0%) had no knowledge of cervical smear tests (76). On the acceptability of human papilloma virus vaccine, the study found that only 26 (6.1%) had heard of the vaccine of which only 2 (8.7%) had been given with HPV vaccine. A similar study of HPV Vaccine Acceptability in Gaborone, Botswana by Yumi Taylor et al (2009) with 376 participants, only 9% had heard of HPV vaccine prior to the survey, where also 88% mentioning that they will have their adolescent daughters receive HPV vaccine. In our study only 48 (11.1%) had heard of cervical cancer screening, From those that heard about it, only 21 (50.0%) heard it from a health facility. This is in concurrence with a study where similar findings were observed in Pakistan, where it was reported that only 5% of women were aware of cancer screening and 2.6% of them took Pap smear once (31), and the researchers observed that this was due to screening which was not quite available in many parts of the country, also in Uganda, A study carried at the Mulago Hospital for the medical workers found that of the 81% of the female respondents had never been screened. Habtu Aweke et. al. in a study done at Ethiopia (2017) found that 16.3% of the respondents had received information about cervical cancer from the health workers, Government health facilities (11.5%), private health institutions (3.4%) (65).

On the barriers to preventive activities of cervical cancer screening, the study found that the top most barrier for not going for cervical cancer screening was that it was costly being mentioned by 78 (45.1%) of the respondents, and that they were healthy mentioned by 54 (31.2%)

respondents, and not knowing where to get screening which was mentioned by 27 (15.6%) of the respondents. In a study done in Nigeria attributed the lack for screening services due to the non-existence of a test, lack of awareness on health facilities where such services are offered, ignorance on the value of screening and the risk factors that leads to development of cervical cancer (33). A similar study of systemic review of Sub-Sahara Africa by Lin J et al (2017), women reported the fear of screening and negative outcome, the lack of support, the societal stigmatization, facilities lacking comfort and privacy, and high costs contributing to poor service delivery (40).

CONCLUSION

The prevalence of cervical cancer screening among the study respondents was very low and only a view of them had ever heard of cervical cancer. From those who had heard about the vaccine the study noted that only a very small number of the respondents had received HPV vaccine.

Majority of the women in this study had never heard about cervical cancer screening test, along with lack of awareness of cervical cancer screening. These contributed to a very low prevalence of cervical cancer screening. At the same time, barriers to preventive activities toward cervical cancer screening included the assumption that screening services were costly, some considered themselves healthy with no need, therefore to seek cervical cancer screening services, while a significant number did not know where to get the services.

RECOMMENDATION

The study recommends that there should be activities aimed at increasing public awareness on the screening of the women for cervical cancer, and this initiative can be started by the government and non-government agencies.

These activities can be aided by mass media campaigns, brochures, health facilities, and also through women's group and places of worship, as this would prevent deaths from cervical cancer with the approach like early diagnosis, prevention, treatment programs and effective screening.

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APPENDIX 1: CONSENT EXAMPLANATION FORM

Study Title: PREVALENCE AND ACCEPTABILTY OF CERVICAL CANCER SCREENING AMONGST WOMEN ATTENDING ERDOGAN HOSPITAL IN MOGADISHU. A CROSS SECTIONAL STUDY

Principal Investigator: Dr. Muna Mohamud Omar, a postgraduate student in the department of Obstetrics and Gynecology at the University of Nairobi. Registration no: H58/75565/2014. This research project is done as a part of the requirements for the award of the masters degree.

Supervisors; Prof. O. B. Ojwang University of Nairobi, Prof. NdaviMuia P University of Nairobi; Dr Anne Naipanoi Pulei, University of Nairobi.

Introduction:

I would like to invite you to participate in a study that I am conducting on prevalence and acceptability of cervical cancer screening amongst women attending Erdogan Hospital in Mogadishu. The aim of this study is to determine the prevalence and acceptability of the cervical cancer screening amongst women attending GOPC at RT Erdogan hospital Mogadishu. The information will be collected using a structured questionnaire that will be administered by the principal investigator (Dr Muna) or research assitant to the study participant.

The data will then be analysed to determine the objectives of the study.

Study approval has been given by the Kenyatta National Hospital/University of Nairobi ethics committee {KNH/UON-ERC}.

I would like to bring to your attention the following ethical considerations which will guide your participation.

1. Participation in this study is purely voluntary.
2. This study carries no extra risk or cost to you.
3. You may withdraw at any point of the questionnaire filling and there won't be any consequences for your decision to withdraw.
4. Any information you provide including details on your demographic characteristics will be treated as confidential.
5. There is no compensation or benefits for participating in this study; you will receive the same standard of care as any other person attending this hospital. .

If you have understood the information I have given you and you are willing to participate in this study, I will require you to sign a form indicating your willingness to participate.

Should you require any further details about this study, do not hesitate to contact me on 0719773978, dr.muna913@gmail.com.

In case of any ethical concerns kindly contact The Secretary, KNH/UON Ethics and review committee, Tel No. 2726300 Ext 44102. Thank you.

APPENDIX 2: CONSENT FORM

I _____ do confirm that I have read/ been explained to the above study, understood the information presented to me and have had the opportunity to ask questions.

I understand that my participation is voluntary and that I am free to withdraw from this study at any time without giving reason.

I agree to take part out of my own free will and no coercion or incentive has been offered.

Signature of participant _____ Date: _____

Signature of investigator _____ Date: _____

LIFAAQA 2: FOOMKA QIIMEYNTA

Anigu ah _____ waxaanxaqiijinayaa in aanakhriyey / la ii sharxaydaraasaddakorkuxusan, aanfahmaymacluumaadka la ii soobandhigeyooaanhelayfursadaankuwaydiiyosu'aalo. Waxaanfahamsanahay in kaqaybgalkaygauuyahay mid ikhtiyaari ah iyo in aanxor u ahay in aankanododaraasaddanwakhtikastaoonbixinsabab.

Waxaanoggolahayinaankaqaybqaatoxoru ahxorna ah, lagumaqasbikaroamadhiirigelinlahayn.

Saxeexakaqaybgalaha _____ Taariikhda: _____

Saxeexabaaraha _____ Taariikhda: _____

Time Frame

Activity	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	April June 2019	July- Aug 2019	Sep 2019	Oct 2019
Proposal development									
Ethical approval									
Data collection									
Data analysis									
Final write up of results									
Presentation of results									

Budget

Item	Total cost (Kshs.)
Proposal writing, review and internet	7,000
Photocopy and printing services and binding services	30,000
Stationery	8,000
Date entry and analysis	40,000
Communication	25,000
Research assistant	30,000
Transport	80,000
Grand Total	235,000

APPENDIX 3: STUDY QUESTIONNAIRE

Interviewer: circle the selected answer(s). Do not read responses.

Interview date ____/____/____ Interviewer code:_____	Questionnaire Number:_____
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A: Individual Factors

1. Age of respondent (Must be 14 and above)	
2. Area of residence	<input type="checkbox"/> 1. Mogadishu <input type="checkbox"/> 2. Other (Outside Mogadishu)
3. Marital status	<input type="checkbox"/> 1. Single <input type="checkbox"/> 2. Married <input type="checkbox"/> 3. Divorced <input type="checkbox"/> 4. Separated <input type="checkbox"/> 5. Widowed
4. Years in Marriage *(only ask the married)	<input type="checkbox"/> 1. 1–5 <input type="checkbox"/> 2. 6–10 <input type="checkbox"/> 3. 11–20 <input type="checkbox"/> 4. > 20
5. Number of births/deliveries	<input type="checkbox"/> 1. 1 <input type="checkbox"/> 2. 2– 4 children <input type="checkbox"/> 3. 5 and above children

B. Knowledge on Cervical Cancer

<p>6. Have you ever heard about cervical cancer?</p>	<p><input type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No , Skip to Section C</p>
<p>7. How did you come to learn about it? (Check all that aforementioned.)</p>	<p><input type="checkbox"/> 1. Television/Radio</p> <p><input type="checkbox"/> 2. printed materials Brochures, posters and other</p> <p><input type="checkbox"/> 4. Health facility</p> <p><input type="checkbox"/> 5. Family, friends, neighbors and colleagues</p> <p><input type="checkbox"/> 6. Religious leaders</p> <p><input type="checkbox"/> 7. Community Health Workers</p> <p><input type="checkbox"/> 8. Other (please explain):</p>
<p>8. In your close circle of acquaintances, do you know someone who has had cervical cancer?</p>	<p><input type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No</p> <p><input type="checkbox"/> 3. Don't Know</p>
<p>9. How did they come to know they had it?</p>	<p><input type="checkbox"/> 1. Through screening in hospital</p> <p><input type="checkbox"/> 2. They had symptoms suggestive</p> <p><input type="checkbox"/> 3. Don't Know</p> <p><input type="checkbox"/> 4. Other specify.</p>

<p>10. What are the signs and symptoms of cervical cancer?</p>	<p><input type="checkbox"/> 1. Vaginal bleeding between periods</p> <p><input type="checkbox"/> 2. Vaginal bleeding after the menopause</p> <p><input type="checkbox"/> 3. Persistent vaginal discharge</p> <p><input type="checkbox"/> 4. Menstrual periods that are heavier or longer than usual</p> <p><input type="checkbox"/> 5. Discomfort or pain during sex</p> <p><input type="checkbox"/> 6. Persistent lower back pain</p> <p><input type="checkbox"/> 7. Do not know</p> <p><input type="checkbox"/> 8. Others</p>
<p>11. What are the causes of cervical cancer (risk factors)?</p>	<p><input type="checkbox"/> 1. Having multiple sexual partners</p> <p><input type="checkbox"/> 2. Early sexual intercourse</p> <p><input type="checkbox"/> 3. Cigarette smoking</p> <p><input type="checkbox"/> 4. Long-term use of contraceptive pill</p> <p><input type="checkbox"/> 5. Not going for regular screening</p> <p><input type="checkbox"/> 6. Do not know</p>

C.HPV Vaccine

12. Have you ever heard about HPV vaccine	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No, Skip to question 18
13. How did you come to learn about it? (Check all that aforementioned.)	<input type="checkbox"/> 1. Television/Radio <input type="checkbox"/> 2. printed materials Brochures, posters and other <input type="checkbox"/> 4. Health facility <input type="checkbox"/> 5. Family, friends, neighbors and colleagues <input type="checkbox"/> 6. Religious leaders <input type="checkbox"/> 7. Community Health Workers <input type="checkbox"/> 8. Other (please explain):
14. what disease does HPV vaccine protect against	<input type="checkbox"/> 1. Cervical Cancer <input type="checkbox"/> 2. Vulval Cancer <input type="checkbox"/> 3 Anal Cancer <input type="checkbox"/> 4. HIV/AIDS <input type="checkbox"/> 5. Warts <input type="checkbox"/> 6. Breast Cancer
15. Have you ever been given HPV vaccine?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No.
16. Would you allow you or your daughter to get HPV vaccine?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No

17. if your answer No, indicate why	<input type="checkbox"/> 1. I am against all vaccination <input type="checkbox"/> 2. The vaccine is not safe <input type="checkbox"/> 3. My religion does not allow vaccination <input type="checkbox"/> 4. The vaccine is not necessary <input type="checkbox"/> 5. The vaccine will make young girls start sexual activity early <input type="checkbox"/> 6. Others
18. Have you heard about Pap smear test?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No
19. What is a Pap smear test used for?	<input type="checkbox"/> 1. Testing sexually transmitted disease(STDs) <input type="checkbox"/> 2. Treating Cervical Cancer <input type="checkbox"/> 3. Cervical Cancer Screening
20. There are not pap smear screening after receiving HPV vaccination.	<input type="checkbox"/> 1. True <input type="checkbox"/> 2. False <input type="checkbox"/> 3. Don't know

D. Sources of Cancer Screening Services

<p>21. Have you ever heard about cervical cancer screening/test?</p>	<p><input type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No, Skip to Section E</p>
<p>22. If yes for 14 above, where did you come to learn from it?</p>	<p><input type="checkbox"/> 1. Television/Radio</p> <p><input type="checkbox"/> 2. printed materials Brochures, posters and other</p> <p><input type="checkbox"/> 4. Health facility</p> <p><input type="checkbox"/> 5. Family, friends, neighbors and colleagues</p> <p><input type="checkbox"/> 6. Religious leaders</p> <p><input type="checkbox"/> 7. Community Health Workers</p> <p><input type="checkbox"/> 8. Other (please explain):</p>
<p>23. Is it possible to detect cervical cancer through screening/routine checkup before symptoms appear?</p>	<p><input type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No</p> <p><input type="checkbox"/> 3. Don't Know</p>
<p>24. Is cancer of cervix treatable if detected early?</p>	<p><input type="checkbox"/> 1. Yes</p> <p><input type="checkbox"/> 2. No</p> <p><input type="checkbox"/> 3. Don't Know</p>
<p>25. Name a health facility in Mogadishu that does offer screening and treatment service for cervical cancer? Y/N</p>	<p>_____</p> <p><input type="checkbox"/> Do not know</p>

26. Do you know how often it is recommended for adult women to do checkup for Cervical cancer.	<input type="checkbox"/> 1. Yearly <input type="checkbox"/> 2. Every three years <input type="checkbox"/> 3. Every 5 years <input type="checkbox"/> 4. I don't know
27. What would be the best place to reach women with cervical cancer screening messages?	<input type="checkbox"/> 1. In women's groups <input type="checkbox"/> 2. Places of worship (church/mosque) <input type="checkbox"/> 3. Health facilities <input type="checkbox"/> 4. At home <input type="checkbox"/> 5. Markets <input type="checkbox"/> 6. Others (Specify)

E. Acceptance

28. Are you willing to regularly consult a health care provider for screening of cervical cancer?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No
29. In your opinion, who should be screened?	<input type="checkbox"/> 1. All women of child bearing age <input type="checkbox"/> 2. Only women with symptoms suggestive of cancerous cervix <input type="checkbox"/> 3. Only women with promiscuous life style <input type="checkbox"/> 4. Don't know
30. Have you ever been screened for cervical cancer?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No
31. If yes to question 18 above, when was the last time screening was done?	<input type="checkbox"/> 1. Less than 1 month ago <input type="checkbox"/> 2. 3 months ago <input type="checkbox"/> 3. Six months ago <input type="checkbox"/> 4. 1 year ago- <input type="checkbox"/> 5. 3 years ago <input type="checkbox"/> 6. Over 5 years ago

32. What made you go for the screening?	<input type="checkbox"/> 1. Friend/family encouraged me <input type="checkbox"/> 2. Health care providers suggested <input type="checkbox"/> 3. Community health workers encouraged me <input type="checkbox"/> 4. The services were free of charge <input type="checkbox"/> 5. Need to clear doubt <input type="checkbox"/> 6. Had symptoms that made me want to screen <input type="checkbox"/> 7. Age factor <input type="checkbox"/> 8. Awareness that if found early it is treatable Others:
33. Are there reasons as to why women don't go for screening/check up for cancer of cervix?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No
34 If Yes, for above, what are these?	Check all that apply <input type="checkbox"/> 1. It is costly <input type="checkbox"/> 2. Do not know where to get screening <input type="checkbox"/> 3. Do not have time <input type="checkbox"/> 4. I am healthy <input type="checkbox"/> 5. Cervical cancer screening is painful <input type="checkbox"/> 6. Fear of a positive outcome <input type="checkbox"/> 7. Fear of the process of exam <input type="checkbox"/> 8. Lack of husband/partner approval <input type="checkbox"/> 8. Not allowed by religion/culture
	<input type="checkbox"/> 9. Not suggested by the health care workers <input type="checkbox"/> 10. Lack of female screeners at the health facility <input type="checkbox"/> 11. Attitude of health care worker <input type="checkbox"/> 12. Lack of convenient clinic time <input type="checkbox"/> 13. It is embarrassing
35. Do you think Cancer of the cervix can be transmitted from one person to another?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No <input type="checkbox"/> 3. Do not Know
36. If yes, above, how is it transmitted?	<input type="checkbox"/> 1. Sexually transmitted <input type="checkbox"/> 2. Through contact with the sick <input type="checkbox"/> 3. Through air <input type="checkbox"/> 4. Don't know <input type="checkbox"/> 5. Other specify.....

WE HAVE COME TO THE END OF THE DISCUSSION. THANK YOU FOR YOUR PARTICIPATION.

DUMMY TABLES

A: Demographic Characteristics

	Frequency n (%)
Age (years)	
<18	
18-25	
26-30	
31-35	
36-40	
41 and above	
Residence	
Mogadishu	
Other	
Marital status	
Single	
Married	
Divorced	
Separated	
Widowed	
Years in Marriage	
1-5	
6-10	

11–20	
> 20	
Number of births/deliveries	
1	
2– 4 children	
5 and above children	

B: Knowledge on Cervical Cancer

	Frequency n (%)
Heard about cervical cancer	
Yes	
No	
Learnt about cervical cancer from	
Television/Radio	
Printed materials Brochures, posters and other	
Health facility	
Family, friends, neighbors and colleagues	
Religious leaders	
Community Health Workers	
Other	
Know someone who has had cervical cancer	
Yes	

No	
How they come to know they had it	
Through screening in hospital	
They had symptoms suggestive	
Don't Know	
Signs and symptoms of cervical cancer	
Vaginal bleeding between periods	
Vaginal bleeding after the menopause	
Persistent vaginal discharge	
Menstrual periods that are heavier or longer than usual	
Discomfort or pain during sex	
Persistent lower back pain	
Do not know	
Causes of cervical cancer	
Having multiple sexual partners	
Early sexual intercourse	
Cigarette smoking	
Long-term use of contraceptive pill	
Not going for regular screening	
Do not know	

C: HPV Vaccine

	Frequency n (%)
Heard about HPV vaccine	
Yes	
No	
How they came to learn about it	
Television/Radio	
Printed materials Brochures, posters and other	
Health facility	
Family, friends, neighbors and colleagues	
Religious leaders	
Community Health Workers	
Other	
HPV vaccine protect against	
Cervical Cancer	
Vulval Cancer	
Anal Cancer	
HIV/AIDS	
Warts	
Breast Cancer	
Been gutted HPV vaccine	
Yes	
No	
Allow you or your daughter to get HPV vaccine	
Yes	
No	
Reasons for not allowing daughter to get HPV vaccine	

I am against all vaccination	
The vaccine is not safe	
My religion does not allow vaccination	
The vaccine is not necessary	
The vaccine will make young girls start sexual activity early	
Heard about Pap smear test	
Yes	
No	
Pap smear test used for	
Testing sexually transmitted disease(STDs)	
Treating Cervical Cancer	
Cervical Cancer Screening	
No pap smear screening after receiving HPV vaccination	
True	
False	
Don't know	

D:Sources of Cancer Screening Services

	Frequency n (%)
Heard about cervical cancer screening/test	
Yes	
No	
Where they came to learn from	
Television/Radio	

Printed materials Brochures, posters and other	
Health facility	
Family, friends, neighbors and colleagues	
Religious leaders	
Community Health Workers	
Other	
Possible to detect cervical cancer through screening/routine checkup before symptoms appear	
Yes	
No	
Don't know	
Cancer of cervix treatable if detected early	
Yes	
No	
Don't know	
Health facility in Mogadishu that does offer screening	
Recommended for adult women to do checkup for	

Cervical cancer	
Yearly	
Every three years	
Every 5 years	
I don't know	
Best place to reach women with cervical cancer screening messages	
In women's groups	
Places of worship (church/mosque)	
Health facilities	
At home	
Markets	

E: Acceptance

	Frequency n (%)
Willing to regularly consult a health care provider for screening of cervical cancer	
Yes	
No	
Those to be screened	
All women of child bearing age	
Only women with symptoms suggestive of	

cancerous cervix	
Only women with promiscuous life style	
Don't know	
Been screened for cervical cancer	
Yes	
No	
Last time screening was done	
Less than 1 month ago	
3 months ago	
6 months ago	
1 year ago	
3 years ago	
Over 5 years ago	
Reasons for screening	
Friend/family encouraged me	
Health care providers suggested	
Community health workers encouraged me	
The services were free of charge	
Need to clear doubt	
Had symptoms that made me want to screen	
Age factor	
Awareness that if found early it is treatable	

Women don't go for screening/check-up for cancer of cervix	
Yes	
No	
Reasons women don't go for screening/check up for cancer of cervix	
It is costly	
Do not know where to get screening	
Do not have time	
I am healthy	
Cervical cancer screening is painful	
Fear of a positive outcome	
Fear of the process of exam	
Lack of husband/partner approval	
Not allowed by religion/culture	
Not suggested by the health care workers	
Lack of female screeners at the healthfacility	
Attitude of health care worker	
Lack of convenient clinic time	
It is embarrassing	
Cancer of the cervix can be transmitted from one person to another	
Yes	

No	
Don't know	
How it is transmitted	
Sexually transmitted	
Through contact with the sick	
Through air	
Don't know	