



Successes and Challenges of Establishing Visual Inspection with Acetic-acid and Cryotherapy Programme for Cervical Cancer Screening in the Gambia

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Abstract: Introduction: Cervical cancer is one of the leading female cancers with slow progression but still remains a major public health problem in developing countries. Each year about 528, 000 new cases of cervical cancer are diagnosed worldwide, with a mortality of about 266 000 and 85% of these deaths occur in developing countries. The aim of the study was to evaluate the successes and challenges of establishing a cervical screening and treatment programme using visual inspection with acetic-acid and cryotherapy in The Gambia. Material and Methods: A qualitative (phenomenological) study designs was used and a total of 6 midwives conducting cervical cancer screening were purposively selected and interviewed on the successes and challenges of establishing cervical cancer screening services in The Gambia. A key informant interview was conducted with the use of an interview guide. The interviews were recorded and transcribed verbatim. The data was analyzed using thematic analysis. This study is part of my PhD thesis which is a mixed study method. Results: Midwives interviewed stated that cervical cancer is the leading gynaecological cancer among women in The Gambia and it is on the increase. According to midwives the main successes of the programme is that many women have been screened for cervical cancer and those found positive were offered treatment. Some of the challenges mentioned include shortage of supplies like cotton wool, orange stick, vinegar, and nitrogen gas for cryotherapy as well as inadequate supervision from relevant authorities. Conclusion: The use of VIA and cryotherapy is a viable screening and treatment programme in The Gambia if given the necessary support.

Keywords: Cervical Cancer, Challenges, Successes, Visual-inspection and Gambia

1. Introduction

Cervical cancer is one of the commonest female malignancies with a slow progression. It has a well-defined natural history and different screening methods but still remains a major public health problem in developing including The Gambia. Several studies have been conducted on cervical cancer and there are numerous screening methods used which have resulted into a sharp decline in the morbidity and mortality of the disease developed countries [1]. However, cervical cancer remains a huge public health problem in developing countries because of factors such as

inequity, poverty, inadequate information on reproductive health and poor health care delivery system, to name a few [1].

It is estimated that, more than 2 million women are diagnosed with breast or cervical cancer each year worldwide [2]. A woman's chances of developing breast or cervical cancer is influenced by factors such as her place of residence, access to screening services, socioeconomic status as well as access to diagnostic and treatment services [2].

Each year about 528, 000 new cases of cervical cancer are diagnosed worldwide, with a mortality of about 266 000 and 85% of these deaths occur in developing countries [1]. Furthermore, 85% of these deaths occur in developing

countries with an estimate of 9 out of 10 of these deaths occurring in developing countries [1]. Lack of effective prevention, early detection and treatment programmes and access to such programmes are associated the disparities in cervical cases between the developed and developing countries [1].

About 85% of cervical cancer cases diagnosed globally occur in developing countries mainly because of lack of proper prevention programmes [3]. Furthermore, cervical cancer is leading gynaecological related deaths among women in Sub-Saharan Africa [3]. Preventive measures of cervical cancer are widely studied in order to reduce its burden and negative impact on women [4].

In Sub-Saharan Africa (SSA) cervical cancer is the most common cause of cancer deaths among women with a mortality of about 50,000 deaths annually [5]. The use of Pap smear as a screening method for cervical cancer has not been successful in Sub-Saharan Africa due to poor health care delivery system [5]. Furthermore, estimates indicate that less than 5% of women at-risk of developing cervical cancer are screened in SSA [5]. However, other screening tools such as VIA and Visual Inspection with Lugol's Iodine (VILI) have been found to be effective alternative screening tools to the use of Pap smear for cervical cancer screening in developing countries [5]. The advantages of these two screening tools (VIA and VILI) are they require less resources, are easily accessible and feasible for screening for precancerous lesion [5]. Therefore, countries like The Gambia who are faced with inadequate human, financial and material resources as well as ill equipped laboratory services can greatly benefit from the use of VIA and VILI as cervical cancer screening methods.

It is estimated that the incidence of cervical cancer in The Gambia is about 98 per 100,000 women with a death record of 57 per 100,000 women [6]. This is high considering the population of the country which is less than 2 million. Approximately 30% of all female cancer cases diagnosed cancer in The Gambia is cervical cancer cases [7]. The Gambia introduced the quadrivalent human Papilloma virus (HPV) vaccine in 2014 which offers protection against HPV genotypes 6, 11, 16 and 18 [7]. This vaccination was concentrated around west coast region of The Gambia targeting children between the ages of 9-13 years. In their study Bah Camara et al, [7] found that there was an ethnicity-associated difference in HPV prevalence among participants, the Fulani ethnic group had a higher prevalence of HR-HPV infection (31.3%) as compared to the Mandingo ethnic group with (18.8%) and Wolof (12.5%).

In The Gambia routine cervical cancer screening started seven years ago and is limited to the urban areas of the country. VIA is performed by midwives in some public and non-Governmental organization (NGO) clinics. Cervical cancer screening services offered in The Gambia have never been evaluated before this study. The aim of this study was to evaluate the successes and challenges of establishing a cervical cancer screening programme using visual inspection with acetic-acid and cryotherapy in The Gambia.

1.1. Study setting

This study was conducted in The Gambia, which is one of the smallest countries in West Africa with a land size of about 10,689 square kilometers and a population of about 2 million people [8]. The country is bound to the north, south, and east by the Republic of Senegal and to the west by the Atlantic Ocean [8]. The River Gambia which runs the entire length of the country from the Futa Jallon highlands in the Republic of Guinea (Conakry) to the Atlantic Ocean divides the country almost equally into two halves, the South Bank and North Bank [9]. The climate of The Gambia is characterized with a long dry season from November to May and a short rainy season from June to October [9].

Most of The Gambian people depend on agriculture which is the backbone economy [8]. The Gambia is one of the poorest countries in world with poverty level of 48.65% of the population living below the poverty line [10]. "The Gambia has a Crude Birth Rate (CBR) of 40.5 per 1000 population (Gambia Demographic and Health Survey [11] and the Crude Death Rate (CDR) is estimated at 9.24 per 1000 population" [8]. The Infant Mortality Rate (IMR) is 34 per 1000 live births and a Maternal Mortality Ratio (MMR) of 433 per 100,000 live births with a total fertility rate of 5.6 births per woman [11]. The total population that lives in the rural area is about 60% while women constitute about 51% of the total population [11].

1.2. Burden of Cervical Cancer

Cervical cancer is the commonest cancer with a morbidity of 34.8 new cases diagnosed per 100,000 women and a mortality of 22.5 per 100,000 women annually in Sub-Sahara Africa [12]. Globally, cervical cancer is the second commonest cancer among women with about 529,409 new cases and 274,883 deaths every year [13]. "About 11.4% of women in the general population are estimated to harbour cervical Human Papilloma Virus (HPV) infection at a given time, and 70.9% of invasive cervical cancers in the world are attributed to HPV types 16 and/or 18" of this virus [13]. World Health Organization reported that out of the 266 000 women who died of cervical cancer worldwide 231,000 live in developing countries compared to 35,000 women who died of cervical cancer that lived in developed countries [1]. The reasons for these difference in cervical cancer mortality between developed and developing countries is the relative lack of effective prevention, early detection and treatment programmes, as well as lack of equal access to such programmes [1].

Human Papillomavirus infections (notably HPV16 and HPV18) are a risk factor for developing the disease and are present in 80% of cervical cancers and high-grade in situ lesions [14]. HPV infection prevalence is about 21.3% in Africa, with some variations from one region to the other: 33.6% in East Africa, 21.5% in West Africa and 21% in Southern Africa [12].

1.3. Risk Factors for Cervical Cancer

Bah Camara *et al.*, in their study found out that Female genital mutilation, low annual income, less than 12 years of education and multiple sexual partners were not associated significantly with HPV infection ($P > 0.05$) [7]. However, the same study found that using hormonal contraceptive for > 5 years was associated significantly with HPV infection (AOR 4.2, $P = 0.03$) [7]. The study further found that participants who had their first sexual debut at the age of 18 years were twice as likely to be infected with HPV (AOR 2.2, $P = 0.17$) [7].

About 18% of cervical adenocarcinomas and 43% of squamous carcinomas are found in smokers (22% of the control cases) [14]. The toxic compounds released by smoking could reduce the immunity of the uterine lining and contribute to infection from human Papillomavirus and the ensuing neoplasia [14]. Tobacco use and lack of screening are a major risk factor for developing cervical cancer [12].

HIV positive women are more likely to develop cervical cancer [14]. Human Immunodeficient Virus (HIV) impairs the immune system thereby making cervical pre-cancer develop faster into an invasive cancer than it normally would do [14].

Cervical cancer screening is a preventive method offered to apparently healthy populations to identify people with risk of having either the disease itself or a precursor of the disease [1]. There are different screening methods for cervical cancer among them is the famous Pap smear. A Pap smear test is intended to identify changes in cervical cells caused by HPV infection [15]. It is a health challenge for developing countries to establish an effective cervical cancer screening programme based on cytology using Pap smear [16]. However, an easier and cheaper screening methods, such as VIA and HPV DNA testing are good alternative to Pap smear [17]. VIA screening involves examination of the cervix with the naked eye by using a bright light after application of 3-5% diluted Acetic-acid using a cotton swab or a spray [18]. Visualization of aceto-white areas at the squamo-columnar junction of the cervix indicates a positive test [18]. The main advantages of this screening method are that it yields an immediate result and it can be carried out using modest equipment [18].

In developing countries where there are inadequate human, financial and material resources, using Pap smear screening for cervical cancer at a large scale is difficult to maintain [19]. VIA and VILI are two screening methods that can detect cervical cancer precursors and are affordable and easy to use [20]. They are suitable for LMIC like The Gambia where health care system is constrained with inadequate staff and equipment. VIA and VILI are two tests that studies suggest that they closely match Pap smear test for cervical cancer screening [19].

2. Methods and Materials

Research design: A qualitative (phenomenological) study

design was used to evaluate the successes and challenges of establishing VIA and cryotherapy program in The Gambia. A purposive sampling method was used to select a sample of 6 midwives who were interviewed using key informant interview method with an interview guide. The midwives came from health facilities conducting the VIA screening in the selected study sites. The study population comprised of all the midwives conducting cervical cancer screening in the selected health facilities.

Inclusion criteria: Any midwife trained on VIA and providing services in the selected health facilities.

Exclusion criteria: Any midwife trained on VIA and providing services in the selected health facilities but on annual leave, maternity leave or study leave.

Data Collection: An in-depth interview was conducted on the successes and challenges of establishing a visual inspection screening service. Midwives who provide the service were interviewed using interview guide. The in-depth interview of midwives was conducted by the researcher at the clinics they work. All the interviews were conducted in English and recorded. The average of length of an interview was about 30 minutes. Respondents were between the ages of 35-61 years with a length of service of 12- 30 years. Majority of the midwives interviewed were Enroll Midwives and few were Registered Midwives. Enroll Midwives are second level nurses who had two years general nursing training and after working for a period of at least year received a one year training on midwifery. Registered Nurses receive three years of general nursing training and upon working for at least two years further received eighteen months training on midwifery. All the midwives had a training on VIA and cryotherapy and have been performing it for more than two years before the study.

Data Analysis: Data was analyzed using thematic analysis. The recorded interviews were transcribed verbatim and themes developed and presented with quotes. No software package for qualitative data analysis was used because the sample size was small.

Ethical Issues: All the ethical issues that may arise from this research such as harm to respondents, anonymity, voluntary participation, informed consent, and confidentiality was adequately addressed. The research received ethical approval from three Institutional Review Boards (IRB); Research Ethics Committee of the School of Basic Medical Sciences, College of Medicine, University of Benin, Nigeria, University of the Gambia Research and Scientific Committee and Medical Research Council & Gambia Government Ethics Committee.

3. Results

A key informant interviews were conducted to establish the successes and challenges of implementing a cervical cancer screening and treatment programme in The Gambia. A total of 6 midwives were purposively selected and interviewed using an interview guide. They were within the age range of 35 to 61 years old with work experience range of

13 to 30years. All midwives interviewed have been conducting cervical cancer screening and treatment for more than two years. They were all trained on VIA and cryotherapy. The data was recorded and later transcribed verbatim and analyzed using thematic analysis. The data is presented in themes and supported with quotes from respondents.

Burden of cervical cancer among women in The Gambia

All the midwives interviewed said that cervical cancer is one of the leading causes of gynaecological cancers among women in The Gambia and it is increasing daily. Despite the screening and treatment being rendered by midwives it is still a challenge for most women to access cervical cancer screening and treatment in The Gambia.

One of the midwife interviewed said this *"It is serious because even one patient is a problem much more if you have many women who are positive who are not taking treatment they can become cancer patients. You know that cervical cancer is among the number one cause of death among women of reproductive age and if you are not treated you lose your life within five years"* said by IDI 02 age 45years.

Similar things was said by another midwife *"Well cervical cancer is a problem in The Gambia like it is in other West African countries because lots of women are coming to us at an advanced stage which is a very big problem for us because we cannot treat them at that stage. If they come at the early stage of the disease it will be easier to treat"* said by a midwife with over 30years work experience.

"Thank you very much for that important question. I know that cervical cancer is the second leading cause of death among women of reproductive age and Gambia is not exceptional. The situation of cervical cancer in The Gambia is on the increase but interventions have been done through diagnosing and prompt treatment through the use of VIA and this is available in all the health facilities and is done by midwives free of charge" said by a midwife age 43years.

Husband's influence on women's reproductive health

Some of the respondents (midwives) explained that women need their husband's approval to go for cervical cancer screening or receive treatment after being tested positive. This affects how women access reproductive health service because they need their husband's approval first before even taking the treatment and they should not have sexual intercourse for a about one month. When diagnosed with sexually transmission infection women are required to inform their husband or partner go for treatment, this is always a problem because most men refuse the treatment saying that they are not sick.

"Ammh, the challenges we are encountering are our expectations are not met due to the ignorance of women; some women are not empowered when it comes to the decision about their health, like if you screen a woman and is positive, she will tell you I cannot take the treatment unless I discuss it with my husband. That is a very big challenge for us because the principle or policy of the treatment is one month abstinence, so that one month abstinence is a very big challenge to us because the woman have to go to the husband to obtain permission and come back unless that is not done

you cannot give her the treatment" said by a midwife with over 25years experience.

Another midwife age 45years said *"Some women feel shy and some will tell you I cannot do the screening because I didn't tell my husband but when they are positive if you give treatment they will say my husband will not take the treatment and if you ask them (husbands) to come they will not come. They will tell you that am not sick, I don't have any disease, is my wife who has the disease, and this is partner management"*.

"In The Gambia we have two religions, Islam and Christianity and in Islam women need to take permission from their husbands before they even make decision on their own health. This is be a barrier because some men don't know about the disease don't allow their wives to come for screening" said by FGD respondent 4.

The successes of cervical cancer screening using VIA

The cervical cancer screening and treatment programme in The Gambia have registered lot of successes according to midwives interviewed. Many women were screened and positive cases were treated, those with negatives results were counseled and given a one year appointment for rescreening. Midwives have been conducting sensitization campaigns at community level and at clinics.

"The successes registered cannot be over emphasized, we have save a lot of women from becoming cervical cancer patients. And again, the successes, we have registered is we are able to save women whose status were at risk because some of them their mothers died of cervical cancer and we monitor them on yearly basis. Every year we call them for them to do the screening and we are also working with a gynaecology consultant who reviews all the women we think if we leave them, they may develop cervical cancer. That is with the introduction of LEEP, we are doing LEEP and electro cauterization, we are doing cone biopsy, we are also doing Pap smear although the investigation of the smear test is not done here but the samples are collected here and sent to another level for investigation" Said by a 52year old midwife. Another midwife said *"I cannot recall the number screened but I know every year we do have more than 200 women screened"* FGD respondent 2.

Challenges of establishing cervical cancer prevention services in The Gambia

Midwives conducting cervical cancer screening and treatment in The Gambia face many challenges at their various health facilities. Some of the challenges mentioned include shortage of supplies like cotton wool, orange stick, vinegar, and nitrogen gas for the cryotherapy. Lack of adequate supervision from relevant authorities as well as financial motivation was seen as major challenges affecting the implementation of cervical cancer screening and treatment services in The Gambia.

"The challenges we face is transport to go out for out-reach screening. When we sensitize a community The SOS vehicle comes late and before we reach the community most women have waited long and decide to go on their business. Another challenge is the unavailability of materials like

acetic acid, cotton wool, orange sticks and even the cryo-machine because for almost one year the gas is finished and it have not been refilled. I do sacrifice and buy materials like cotton wool, orange sticks and vinegar for continuity of the service. For those who are positive you know you cannot leave them like that, now what we do is refer them to SOS but I think SOS also have a challenge, unless the gas issues is addressed it will be difficult for us" said by a midwife aged 45years.

Midwives' opinion about incorporating cervical cancer prevention and treatment into Midwives' training curricula

Midwives recognized the need to incorporate cervical cancer prevention and treatment into nurses and midwives' training curricular in The Gambia. Presently trainings on cervical cancer prevention in The Gambia is conducted by SOS Mother and Child Clinic in collaboration with the Reproductive, maternal, neonatal, child and adolescent health unit. It is more cost effective to train student midwives than to be doing in-service training every time.

"Yes because the midwife should know the anatomy of the female reproductive system. All midwives should be train on VIA screening and cryotherapy. Students do come here to do their research on cervical cancer" said by a midwife age 62years.

"It is very good because Nurses and Midwives are doing their best at their health facilities and it also helps them like if we can have more training on cervical cancer so that we can always update ourselves with the new technology but obviously we are doing our best" said by a 47year old midwife.

4. Discussion

A key informant interview was conducted to establish the successes and challenges of implementing cervical cancer screening and treatment services in The Gambia. A total of five midwives were interviewed representing one midwife from each VIA center. They were within the age range of 35 to 61years old and their work experience ranges from 13 to 30years.

Burden of cervical cancer in The Gambia

All the midwives interviewed said that cervical cancer is one of the leading causes of gynaecological cancers among women in The Gambia and it is increasing daily. Despite the screening and treatment being rendered by midwives it is still a challenge for most women to access this service in The Gambia.

A midwife said this *"It is serious because even one patient is a problem much more if you have many women who are positive who are not taking treatment they can become cancer patients. You know that cervical cancer is among the number one cause of death among women of reproductive age and if you are not treated you lose your life within five years"* said by FGD participant 2, age 45years. A similar thing was said by another midwife *"Well cervical cancer is a problem in The Gambia like it is in other West African countries because lots of women are coming to us at an*

advanced stage which is a very big problem for us because we cannot treat them at that stage. If they come at the early stage of the disease it will be easier to treat" said by a midwife with over 30years work experience. This is in line with this statement, in Sub-Sahara Africa cervical cancer is the commonest cancer with a morbidity of 34.8 new cases per 100,000 women and mortality of 22.5 per 100,000 women annually [12]. It is estimated that the incidence of cervical cancer in The Gambia is about 98 per 100,000 women with a death record of 57 per 100,000 women [6]. This is high considering the population of the country which about 2 million

Husband's influence on women's reproductive health

Some of the respondents (midwives) explained that women need their husband's approval to go for cervical cancer screening or receive treatment after being tested positive. This affects how women access reproductive health service because they need their husband's approval first before even taking the treatment as they should not have sexual intercourse for a about one month. When diagnosed with sexually transmission infection women are required to inform their husband or partner go for treatment, this is always a problem because most men refuse the treatment saying that they are not sick.

"Ammh, the challenges we are encountering are our expectations are not met due to the ignorance of women; some women are not empowered when it comes to the decision about their health, like if you screen a woman and is positive, she will tell you I cannot take the treatment unless I discuss it with my husband. That is a very big challenge for us because the principle or policy of the treatment is one month abstinence, so that one month abstinence is a very big challenge to us because the woman have to go to the husband to obtain permission and come back unless that is not done you cannot give her the treatment" said by a midwife with over 25years experience. This show there is need for male involvement in reproductive health services including supporting their wives to go for screening and treatment services. Men are decision makers regarding reproductive and child health service in the household therefore, their involvement in services that deals with reproductive and child health is very important.

Onyango et al in their study found that existing gender norms among cultures in western Kenya influence and determine the extent of male involvement in reproductive health [21]. Furthermore, the study revealed that participants mentioned four factors that illustrate how men exhibit these cultural norms: negative cultural practices, parenting practices in relation to reproductive health, prevention and treatment of sexually transmitted infections (STIs), and going or not going with female partners to the health facilities [21]. The findings of Onyango et al, and Cham [21, 22] are in line with the findings of this study, men don't involve in reproductive health service mainly due to cultural and service related issues. Unless such issues are addressed adequately women will continue to bear the burden of reproductive

health challenges.

The successes gained from establishing cervical cancer screening services in The Gambia

The screening and treatment services in The Gambia have registered lot of successes according to midwives interviewed. Many women were screened and those found positive were offered treatment while those with negatives test results were counseled and given a one year appointment for rescreening. Midwives have been conducting sensitization campaigns at community level and at clinics.

“The successes registered cannot be over emphasized we have saved a lot of women from becoming cervical cancer patients. And again, the successes, we have registered is we are able to save women whose status were at risk because some of them their mothers died of cervical cancer and we monitor them on yearly basis. Every year we call them for them to do the screening and we are also working with a gynaecology consultant who reviews all the women we think if we leave them they may develop cervical cancer. With the introduction of LEEP, we are doing LEEP and electro cauterization, we are doing cone biopsy, we are also doing Pap smear although the investigation of the smear test is not done here but the samples are collected here and sent to another level for investigation” Said by a 52year old midwife FGD. Another midwife said *“I cannot recall the number screened but I know every year we do have more than 200 women screened”* FGD respondent 2.

Challenges of establishing cervical cancer screening programme in The Gambia

Midwives implementing the programme are faced with many challenges at their various health facilities. Some of the challenges mentioned include shortage of supplies like cotton wool, orange stick, vinegar, and nitrogen gas for the cryotherapy. Lack of adequate supervision from relevant authorities as well as financial motivation was seen as major challenges affecting the implementation of screening services in The Gambia.

“The challenges we face is transport to go out for outreach screening. When we sensitize a community The SOS vehicle comes late and before we reach the community most women have waited long and decide to go on their business. Another challenge is the unavailability of materials like acetic acid, cotton wool, orange sticks and even the cryo-machine because for almost one year the gas is finished and it have not been refilled. I do sacrifice and buy materials like cotton wool, orange sticks and vinegar for continuity of the service. For those who are positive you know you cannot leave them like that, now what we do is refer them to SOS but I think SOS also have a challenge, unless the gas issues is addressed it will be difficult for us” said by a midwife aged 45years.

5. Conclusion

According to the research findings the main successes of the programme is that many women were screened for cervical cancer and those found positive were treated. Some

of the challenges mentioned include shortage of supplies like cotton wool, orange stick, vinegar, and nitrogen gas for cryotherapy as well as inadequate supervision from relevant authorities. The use of VIA and cryotherapy is a viable screening and treatment programme in The Gambia if given the necessary support.

6. Recommendation

The Reproductive Health Unit of the Ministry of Health should be the coordinating body responsible for all the services on cervical and breast cancer prevention and treatment.

There should be proper mechanism for monitoring and evaluation of services on breast and cervical cancer in the country.

There should be funding for research on cervical and breast cancers hence these two diseases are the leading gynaecological cancers in the country and do claim many lives every year.

Our law makers and other politicians should be sensitized on cervical and breast cancer so that they will be aware of the magnitude of the problem in the country.

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