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Challenges to Visual Cervical Cancer Screening Service Integration and Utilization in Imenti South Sub-County Reproductive Health Care System, Meru County – Kenya

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Abstract: *As the incidence of cervical cancer continues to rise, the solution lies in early screening of eligible women, with visual cervical cancer screening approach being the most feasible for low resource settings in developing countries. Kenya, in recognition of this fact has, for the last decade made efforts to integrate visual cervical screening in its reproductive health care system with an aim of raising screening coverage to over 70 per cent up from the current 3.6 per cent with no success. This cross-sectional study sought to identify visual cervical cancer screening challenges in Imenti South Sub- County, Kenya. Questionnaires, a checklist and key informant interviews were used to collect data in each of the six facilities sampled in the Sub-County. A total of 354 respondents visiting reproductive health clinics were interviewed. Chi-square and Fisher exact test were used to test significant associations with a $P \leq 0.05$ being considered significant while qualitative data was analyzed and discussed in key thematic areas. Only 20 per cent of the respondents had ever been screened for cervical cancer at the time of this study. Low level of awareness, inexistence of a functional referral system, poor reporting, monitoring and supervision on visual screening were key screening challenges among others. The study concluded that, establishing clinical services alone will not achieve the desired target of having over 70per cent screening coverage unless critical components are put in place to address the observed challenges in this study.*

Key Words : *Challenges, Visual, Cervical, Cancer, Screening, Integration, Utilization*

1. Background of the study

As the world strives to fight its main enemies; poverty, illiteracy, and diseases, the increasing rates of cancer incidence has put even more strain to the already outstretched health care systems in the world, and even more worse in the hard hit low and middle income countries [1]. Cancer has become the second leading cause of death worldwide [2].

Almost 13 million persons are diagnosed each year with cancer and 7.6 million die. Of all the cancers, cervical cancer has been identified as the second most common among women with an annual incidence of 529,000 cases. Among annual cancer mortality among women, cervical cancer is the leading cause with approximated 300,000 annual deaths from all the cases diagnosed. Evidence shows that, over 80 per cent of all these cases and mortality occur in low and middle income countries [2]. Unlike most cancers which have no known prevention or screening measures, scientific and public health advances have made cervical cancer the most preventable and treatable of all cancers [3]. Studies have pointed evidence of low incidence rate of cervical cancer in developed counties on successful cervical cancer screening programs that these countries have established in their health systems [4]. This is a contrast to the non-existent and poorly executed screening programs in developing countries accounting for the high incidence and mortality from cervical cancer [5], the prevalence of women screened in developed countries ranges between 50 per cent to 70 per cent, a contrast of less than 5 per cent in developing countries [5]. In response to this, the alliance for cervical cancer prevention (ACCP) and western Kenya cervical cancer prevention program (WKCCPP) embarked on studies to establish the most feasible and cost-effective screening approach appropriate for low resource settings [6]. Repeated studies have shown visual cervical cancer screening approaches (VIA/VILI) to be the most feasible and effective for integration in health care system in low resourced countries [3]. It is from this supporting evidence that governments in developing countries have embarked on integrating visual screening tests into existing reproductive health clinics where it targets the missed screening opportunity eligible for screening, with Kenya having made this effort without any tangible

success [7]. Despite the feasibility of visual screening approaches for over ten years now, the proportion of women screened still remain at less than 3.6% and very few facilities having integrated the visual screening test and where it is offered testing is not offered routinely to all eligible clients [8]. The inadequate integration of visual cervical cancer screening in all reproductive health (RH) clinics and the low prevalence of screened eligible women (3.6 per cent) despite the establishment of the Kenya cervical cancer prevention program strategic plan of 2002-2006 clearly demonstrates that there are challenges that impede facility integration
and client utilization of the visual screening service [7]. With yet the recent 2012-2015 cervical cancer prevention strategic plan being rolled out, its success is dependent on identifying and addressing the challenges to integration and utilization experienced in the previous programs.

2. Problem statement

Despite the existence of Kenya National Cervical Cancer Prevention Strategic Plan – NCCPSP for a decade now 2002-2015, implementation of the national screening program is still low and haphazard [8] Cervical cancer screening occurs, but only in a few selected sites and in disjointed projects rather than a fully-fledged national-level program [8]. The program has failed to integrate visual screening in all reproductive health clinics and the aim to raise screening coverage to over 70% is far from reach with only 3.2% of women at risk of developing cervical cancer screened [8].
Addressing the challenges that have hindered previous efforts will guarantee the success of the most recently rolled out NCCPSP 2012-2015

3. Specific objectives

To determine the influence of client's demographic and reproductive factors on utilization of visual cervical cancer screening service.

To determine the proportion of the study population that has utilized visual cervical cancer screening service.

To determine the facility based challenges that influence utilization of visual cervical cancer screening service from the existing reproductive health system in Imenti south sub-county.

To examine the reproductive health care system challenges that influence integration of visual cervical cancer screening service into the existing reproductive health care system in Imenti south sub-county.

4. Methods and materials

4.1 Study design

This was a descriptive cross-sectional study that employed both qualitative and quantitative approaches in data correction and analysis.

4.2 Study variables

The dependent variables for this study were visual cervical cancer screening integration and utilization. The independent variables were respondent demographic characteristics, respondent reproductive health factors, Proportion utilizing VCCS service, facility based factors, reproductive health care system Factors.

4.3 Study area

This study was carried out in Imenti south sub-county, Meru County, Kenya. Meru County falls in the former Eastern province, around 250 kilometres from the capital city Nairobi.

4.4 Study population

This consisted women of reproductive age eligible for screening according to the national guidelines (25-49 years) attending reproductive health clinics. The sub-county monthly reproductive health clinic attendance was an average of 7,563 clients.

4.5 Sampling procedures

This study employed probability sampling techniques. Stratified random sampling was used for the six administrative divisions within the sub-county. A total of six health facilities were sampled each from the six administrative divisions of the sub-county by simple random method. Systematic random sampling for respondents in each of the six health facility sampled was employed to recruit study respondents.

4.6 Sample size determination

The minimum sample size was determined using Watson formulae for sample size determination [18]. A sample size of 355 respondents was used.
Proportional sampling was used to collect data from the six sampled health facilities in the sub-county.

4.7 Data collection tools

Various methods of data collection were used due to the various type of data required in this study. These tools included respondent questionnaires that were used to collect data from clients attending reproductive health clinics. This was a semi structured researcher administered questionnaire. Key informant interview schedules were used for the sampled facility head of reproductive health clinics and checklist at the reproductive health clinics for checking available screening resources was used.

4.8 Data management and analysis

Cleaning and editing was done after every day of data collection. Storing and coding was done at the end of data collection from each facility. Data was collected from each facility at a time. At the end of data collection, all the data was first entered and verified in Microsoft excel spread sheet before being exported to SPSS for analysis. Chi-square (x^2) and Fisher Exact Test using 95% confidence level was calculated to test for statistical significance of associations. Bar charts, pie charts and tables were used in data presentation.

4.9 Ethical consideration

Permission to undertake this study was sought from Kenyatta University ethical review committee, Ministry of higher education through National Commission for Science, Technology and Innovation (NACOSTI), Imenti south deputy county commissioner's office, and Imenti south sub county health ethical committee. Informed consent was sought from respondents and only those willing to freely participate were interviewed. The tools for data collection also did not bear any respondents details for confidentiality purposes.

5. Results and discussion

5.1 Introduction

This data was collected between January 2015 and July 2015 in six health facilities sampled within Imenti south sub-county. 320 out of 355 questionnaires were sufficiently completed and data subsequently analysed while 35 out of 355 questionnaires could not be analysed due to either missing information or contradicting information making a response rate of 90.14%.

5.1.1 Respondents' socio-demographic characteristics

As shown in **table 1** below, Majority of women utilizing reproductive health services are aged below 30 years, are of secondary level of education and below, are married or have a sexual partner and have an average monthly income of less than KSH. 10,000. Observation consistent with observations from KDHS 2003, 2008/2009 & 2014 women demographics and RH service utilization [19].

Table1. Respondents' socio-demographic characteristics

Variable	Category	Frequency (N=320)	%
Age	≤29 yrs.	150	47
	30 -39 yrs.	123	38
	40 - 49 yrs.	47	15
Level of education	≤ Primary	121	38
	Secondary	132	41
	Post-Secondary	67	21
Marital status	Married	234	73
	Partner but not married	60	19
	Others	26	8
Source of income	Formal employment	60	19
	Self employed	182	57
	Others	78	24
Average monthly income	<5000	52	16
	5000 – 10000	158	49
	>10000	110	34

5.1.2. Proportion of study population utilizing visual cervical cancer screening service in Imenti South sub-county. As shown in figure **1** below, Women utilizing VCCS services was at 20 percent contrary to national estimates of 3.2percent [9-10]. Similar findings have shown screening prevalence higher than estimated (Kisumu estimated at 6percent [11], Eldoret 12.3percent [1] and Embu 25percent [12], all in Kenya. Screening however is way below the expected (>70%) - NCCPSP 2012-2015

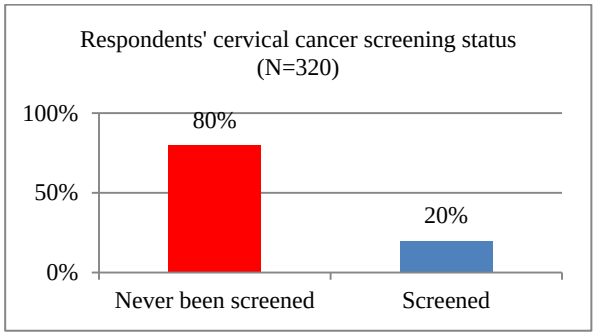

Figure1. Proportion of study population utilizing visual cervical cancer screening service

5.1.3. Association of Respondents' demographic characteristics and utilization of cervical cancer visual screening service. Table 2 below shows that, Respondents' age, level of education, marital status and income levels were all significantly associated with VCCS service utilization. Similar observation made in a study in Moi Teaching and Referral Hospital (MTRH) Eldoret, Kenya [1].

Table2. Respondents' demographic characteristics and utilization of cervical cancer visual screening service

		Frequency Screened or not screened (N=320)				
Variable	**Category**	**yes (n=65)**	**no (n=255)**	**chi2**	**Pvalue**	**Df**
Age of respondent in years						
	≤29 years	16	134	59.61	<0.001	2
	30 -39 yrs	20	103			
	40 - 49yrs	29	18			
Level of education						
	≤Primary	17	105	27.77	<0.001	2
	Secondary	19	112			
	Post-secondary	29	38			
Marital status						
	Married	44	190	10.70	0.005	2
	Partner but not married	10	50			
	Others	11	15			
Source of income						
	formal employment	25	35	21.70	<0.001	2
	Self employed	31	151			
	Others	10	68			
Average monthly income						
	< 5000	9	43	16.48	<0.001	2
	5000 – 10000	20	138			
	>10000	36	74			

5.1.4. Respondents' reproductive health factors influence on utilization of cervical cancer visual screening service

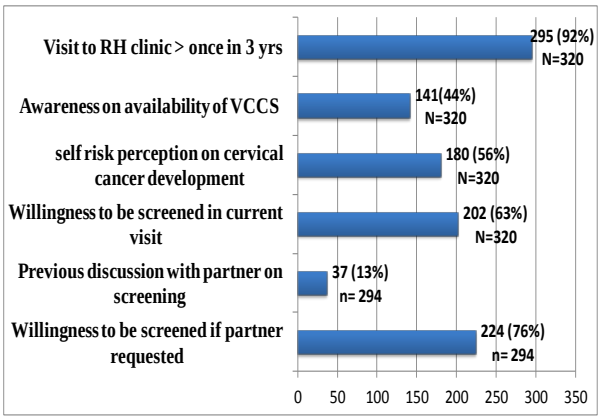

Figure2. Respondents RH factors on utilization of VCCS service

Figure 2 above shows that, Majority of women are unaware of existence of VCCS service in RH clinics. A significant proportion also perceives no self-risk for cervical cancer. Low partner participation. All resulting to high level of missed opportunity for screening. Similar observations have been made in Kenya Kenya [11,12,13,14,15,16,17].

5.1.4. Influence of Respondents' partner on visual cervical cancer screening service utilization

As shown in **Figure 2**, 92% of the respondents who were either married or had a partner, when asked whether they had ever discussed about cervical cancer screening with their partners, overall, 87% had never discussed cervical cancer screening with their partners. When asked for reactions if partner requested them to have a cervical cancer screening test, overall, 76% felt they would seriously consider the screening test if their partners requested while 22% felt it wouldn't change anything.

5.1.5. Influence of reproductive health care system factors on utilization of visual cervical cancer screening service As shown of **table 3** below, the reproductive health care system factors were explored for their association on women decision to take the screening.

All factors were significantly associated with cervical cancer screening except the number of health workers in the room. Respondents reported to be satisfied with the privacy offered in the

clinics with 72% of the respondents reporting to be satisfied.

Table3. Influence of RH care system factors on utilization of VCCS service

		Frequency Screened or not screened (N=320)				
Variable		**yes (n=65)**	**no (n=255)**	**chi2**	**Pvalue**	**Df**
Comfortable with privacy in the clinic	No	10	80	6.63	0.010	1
	Yes	55	174			
HCW Gender influence	No	44	122	8.02	0.005	1
	Yes	21	132			
Preferred gender of HCW	Male	7	21	10.70	0.005	2
	Female	14	111			
	Any can do	44	122			
Number of HCW's in room influence	No	6	8	0.61	0.436	1
	Yes	61	244			
Whether Cost influence decision	No	11	87	8.71	0.003	1
	Yes	54	167			

The gender of the health care provider providing the screening service was reported to influence the decision of a woman to take the cervical cancer screening with 39% preferring female provider while 52% however was comfortable with either gender.

Over 94% of the respondents reported that, the number of providers in the screening room would influence the decision to screen with majority (65%) preferring at most two providers at any given time. Respondents also felt that, the cost of screening service would influence their decision to take up the screening with 69% reporting that, screening decision would depend on whether it is free or charged.

5.1.6. Influence of reproductive health care system factors on Integration of visual cervical cancer screening service. All the six RH clinics had at least a screening room, an examination couch, a functional examination lamp, a sterilization machine, a sterilizing drum, a roll of cotton wool, the two screening reagents, clean gloves, decontamination buckets, decontamination detergents, screening register, Reusable speculums and referral forms. 3/6 RH clinics did not have couch screens, all the six RH clinics did not have disposable speculum, 5/6 did not have sterile gloves at the time of data collection while 3/6 did not have any screening posters at the clinic In the six health facilities in the sub-county, all their RH clinics were offering visual cervical cancer screening (VIA/VILI). However, none of the six was offering any other cervical screening method. There was also no treatment method offered in the

5.1.7. Proportion of health care providers skilled to provide VCCS service. The ratio of the total number of health care providers eligible to be trained on visual cervical cancer screening (nurses, clinical officers and doctors) and those who had actually been trained on the same was in the ratio of 1:2 or more with two of the six facilities having all trained.

6. Conclusion

Majority of clients seeking reproductive health services eligible for visual cervical cancer screening are the youngest in that category (below thirty years) while those above forty years are the minority. Despite the low proportion of the most at risk women for cervical cancer (above forty years) being the minority group seeking reproductive health services, they contribute the largest proportion of clients utilizing cervical cancer screening. Cervical cancer screening is still suboptimal (at 20%), way below the Kenya cervical cancer prevention strategic plan target of over 70% though it appears to be higher than the national estimates of 3.2% of prevalence of women already screened (20%). Utilization of cervical cancer screening is higher in more economically able individuals in formal or self employment and those with an average monthly income of more than five thousand shillings.

Majority of women had never had of visual cervical cancer screening test and expressed willingness to take up the test once explained to what it entailed. Fear of the procedure was among the main reasons women who had never been screened before gave but were however generally willing to be screened after the procedure was explained to them. Clients are generally satisfied with the level of privacy offered in the reproductive health clinics.

Gender of health care provider providing the screening and the number of providers in the screening room is significant in a woman decision to get screened with majority preferring a female provider and at most two providers in the room. Cost of screening significantly influence a

woman's decision will take up the screening test or not. Partner influence is a significant factor in a woman's decision to take up the test with majority saying they would seriously consider screening if their partner requested they get tested. Unfortunately majority had never discussed with their partner about screening. Of all sampled RH clinics, none was offering routine visual screening to all eligible clients. Screening was more opportunistic and on request basis with no specified mechanism for creating awareness on visual cervical cancer screening to eligible clients visiting the clinics and community outreaches. The human resource capacity for screening in all the sampled facilities was sufficient for screening majority of eligible women visiting the RH clinics than it was the case in previous studies. The sampled RH clinics had the basic screening resources required for a fully fledged screening program and only required a few additional disposable speculums and sterile gloves which is attainable considering their market prices. The referral and follow-up mechanism in the sub-county was inexistent with no facility capable of managing referrals in the sub-county. Clients requiring referral were referred outside the sub-county and no further follow-up on outcome made. The monitoring and evaluation system for visual cervical cancer screening was poor with other RH services being given more attention than visual cervical cancer screening. No records were available at the sub-county headquarters on visual cervical cancer screening despite the program having been rolled out in 2012.

Therefore, Kenya cervical cancer prevention strategy is appropriate for the resources and infrastructure currently available within the facilities.

However, establishing clinical services alone will not achieve the desired target of having over 70% of eligible women screened for cervical cancer unless critical components are put in place to address the existing challenges.

7. Recommendations

Based on observed challenges to facility integration and client utilization of visual cervical screening tests, this study therefore recommends the following:-

- Addressing the low level of awareness and demand on visual cervical cancer screening.
- Partner involvement in decision making in reproductive health.
- Establishing functional referral and follow-up mechanism within the sub-county
- Strengthening supervision, reporting, monitoring and evaluation
- Policy makers need to take into account the existing recommendations from the various studies on cervical cancer screening before developing and rolling out any cervical cancer screening program.

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