

Knowledge and Perception of Women towards Cervical Cancer Screening in Meru County, Kenya.

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Abstract.

Globally, epidemiological transition from communicable to non-communicable diseases is on the increase. Cervical cancer associated with human papilloma virus which is sexually transmitted is among the leading causes of morbidity and mortality in women. Cervical cancer is a preventable disease but many especially in Africa seek healthcare late in advanced stages when treatment is more difficult and more expensive to obtain. Majority of women in Kenya have never been screened yet free services such as visual inspection are available in most health facilities. The coverage of cervical cancer screening for all women aged 18 to 69 years in Kenya is reported to be 3.2% as compared to the National Cervical Cancer Prevention program target of 70%. This is unacceptably low. The underutilization of screening services is cited to be as a result of lapses in service availability, negative perception among others. The study aimed at assessing knowledge and perception of women towards cervical cancer screening in Meru Teaching and Referral Hospital. A descriptive cross-sectional study design was used. Data was collected from three hundred and fifty two respondents (n=352) selected through purposive sampling technique using structured questionnaires. Data was cleaned, coded and entered using SPSS version 23. It was then analysed using descriptive and inferential statistical techniques. The data was presented using tables and charts. Results showed that 69% were aware of cervical cancer while 46.29% were not, 86.9% did not know the cause of cervical cancer. Additionally, 61.9% had heard about cervical cancer screening but 38.1% had not. 78.4% had never heard about human papilloma virus vaccine. The correlation between utilization of cancer screening services and knowledge of cervical cancer screening, was found to be statistically significant $r= 0.294, p < 0.001$, two tailed. An inverse relationship between screening and perceived pain, $r= -0.117, p=0.029$) and perceived embarrassment $r= -0.109, p=0.041$ was also established. This suggests that perception influences utilization of screening negatively. The results would be used by the county managers in decision making and planning for cervical cancer screening as a priority for strengthening service delivery. This study recommends sustained public health education to create positive social change that will include increase awareness, change of perception to cervical cancer and improved screening practices.

Key words. *Embarrassment, Fear, Pain, Public education, Perception, Utilization.*

Introduction.

Cervical cancer is recognized as one of the worst threats to women in Sub-Saharan African. (World Health Organization, 2014). Loss of lives due to cervical cancer is an pointer of health disparities as 86% of this deaths are in low and middle income countries (Sreedevi, Javed, & Dinesh, 2015). These deaths are attributed to lack of early diagnosis, and delayed or no access to treatment that could otherwise cure them or prolong their lives.

Without urgent attention, deaths due to cervical cancer are projected to rise by almost 25% over the next 10 years (World Health Organization [WHO], 2013). In the developed countries cervical cancer cases have been considerably reduced since the execution of effective vaccination and screening programmes. However, in low and middle income countries, the burden from cervical cancer remains because of the difficulty in executing cytology-based screening and vaccination programs.

It is estimated that less than 5% of women at risk have ever been screened, this is attributed to lack of resources and capacity (Catarino et al., 2015). Equally, Kenya experiences a high cervical cancer burden. Although it is preventable, many women have never been screened because many seek healthcare late in advanced stages when treatment is more difficult and more expensive to obtain (MoPHS, 2012). Majority of the women who succumb to cervical cancer are in the prime of their lives and are depended upon by their families.

The number of new cases of cancer and deaths worldwide is estimated to be 18.1 million and 9.6 million respectfully (Bray et al., 2018). Cervical cancer is ranked as the fourth frequent and the fourth common after

colorectal cancer but cited to be the leading cause of mortality among women especially in sub-Saharan Africa (Bray et al., 2018). The incidence of cervical cancer in developing countries was estimated to be 570,000 cases and 311,000 deaths in 2018 (Bray et al., 2018; World Health Organization, 2018). The rising cancer burden is cited to be due to demographic transition, ageing and social-economic growth particularly true in rapidly growing economies. The shift observed in low and middle socio economic countries is linked to lifestyle changes just like in developed nations (Bray et al., 2018).

Cervical cancer is associated with a sexually transmitted high-risk strain of Human papilloma Virus [HPV] especially type 16 and 18 (Wentzensen & Schiffman, 2018). The virus triggers changes in the cervical cells, which leads to the development of cervical intraepithelial neoplasia, resulting in uncontrolled division of the cells (WHO, 2013).

Predisposing factors to cervical cancer include: infrequent cervical screening; smoking; immune suppression as a result of HIV infection; prolonged use of oral family planning; multiple pregnancies; exposure before birth (while in the uterus) to Diethylstilbestrol [DES]; familial cervical cancer; early pregnancies especially below the age of seventeen years; multiple full-term pregnancies; obesity and Chlamydia infection (American Cancer Society, 2015).

Testing for HPV is suggested as the main screening approach where feasible as it has shown to decrease deaths in low resource settings. Where the cost of HPV testing is unaffordable, visual inspection with acetic acid [VIA] and Lugol's iodine [VILI] is recommended (Swanson et al., 2018). Cervical cancer screening programme must

include screening tests or strategies (sequence of tests) that can be linked to appropriate treatments and provision of referral mechanism to women on treatment with invasive cervical cancer (WHO, 2013).

Approaches to screening effectively can either be “screen-and-treat” or “screen, diagnose and treat”. In the former approach, no cytology diagnosis is done but the treatment decision is based on a screening test and treatment is initiated immediately if a positive the screening test is detected. This approach reduces loss to follow-up, and can reduce the time lag for women to receive treatment especially in the peripheral health facilities. Among women who test negative with VIA VILI or cytology, the interval for re-screening should be three to five years.

If cancer is suspected in women who attend screening, they should not be treated but should be referred to a facility for diagnosis and treatment of cancer (WHO, 2014). HPV vaccination can reduce the burden of cervical cancer in the coming decades. It is cited that vaccination against types HPV 16 and 18 would prevent approximately 70% of cervical cancer cases (Wentzensen & Schiffman, 2018)

In Kenya, information on cervical cancer is either lacking or fragmented. It was previously reported that by the year 2002, 4,802 women had been diagnosed with cervical cancer while 2,451 died annually (Abdikarim, Atieno, & Habtu, 2017). The magnitude of the problem in the uptake of cervical cancer screening is still extensive in Kenya despite government effort to scale up screening even to the rural areas. The cervical cancer screening coverage for all women 18 to 69 years of age is reported to be 3.2% compared to the 70 % target envisaged in the National Cervical Cancer Prevention program (MoPHS, 2012). Meru County is also experiencing a dearth of information on

cervical cancer screening due to lack or underreporting as a result of poor data management system. However, Meru County Referral Hospital records indicate that new cases of cervical cancer are 2 per 1000 women (Mutuma, 2016). Low utilization of cervical cancer screening service is also a challenge since out of 3,018 Women of Reproductive Age (WRA) seen in 2012, only 6.2% were screened, (Mutuma, 2016).

The underutilization of screening and vaccination services results from lapses in service availability by the health facilities, lack of demand creation for screening services , low level of knowledge about cervical cancer and screening and negative perception by women (Swanson et al., 2018). Perception influences health seeking behaviour. An individual belief about the chances of experiencing a risk or getting a condition or diseases will pressure one to seek health services.

Additionally, an individual’s belief about how serious a condition and its sequels are, influences the utilization of a certain health service. Similarly, the utilization of a service is largely influenced by an individual beliefs in usefulness of an advised action to reduce risk or seriousness of impact and the tangible and psychological cost of the advised action. Intrinsic factors such as poor knowledge, subjective health beliefs such as perceived health status, perceived need of screening, and cultural belief, embarrassment and negative perception such as pain during procedure) towards cervical screening are also reported barriers to screening uptake.

In Zimbabwe for example, many women had not been screened because of the belief that Pap smear test was frightening and painful (Mutambara et al., 2017). Another study among nursing graduates in Hong Kong on

how knowledge and perception affected cervical cancer screening, supported that the intention to attend screening and take prevention measures was influenced by the individual's health perception (Wong & Chikuan, 2011). Among Somali women in Kenya, more than half (55.8%) claimed that pap smear test was unpleasant and embarrassing. Fifty nine (59%) indicated that they could not undergo the test due to fear of results (Abdikarim et al., 2017).

Lack of knowledge on cervical cancer screening has evidently been demonstrated to cut across different education levels. This not limited to patients alone, health care workers who are supposed to be better informed do not have good knowledge of the disease either (Anorlu, 2008). A study done in Ghana by Kokuro found a significant relationship between knowledge and utilisation of cervical cancer screening respectively (Kokuro, 2017). In Botswana a study revealed that inadequate knowledge of cancer screening was an impediment to its utilization.. This evidence suggests that more information about the benefits of screening should be disseminated among women. (Abdikarim et al., 2017).

It is recognised that well-organised cervical screening programmes or widespread good quality cytology can reduce cervical cancer incidence and mortality. This study therefore, sought to assess knowledge and perception of women towards cervical cancer screening among women of reproductive age at Meru Teaching and Referral Hospital, Kenya.

Materials and Methods.

The study was conducted at Meru Teaching and Referral Hospital. A descriptive cross sectional research design was used, data was collected using structured questioners from

352 respondents sampled out using purposive sampling technique. All women who presented to the hospital in each of the following service delivery points; MCH/FP clinics, Comprehensive Care clinics (CCCs) and Gynecology wards/ clinics during the period of data collection (January to March 2018) were approached until the required sample size was achieved. Quantitative data was then cleaned, coded, keyed in using SPSS statistical software version 23. It was then analysed using descriptive and inferential statistical techniques.

Pearson correlation was done to establish relationships and statistical significance between variables. Qualitative data was summarized using content analysis which enabled identification of themes which was then followed by conceptual analysis. This involved establishing the existence and occurrence of concepts such as words or themes and developing meaningful conclusions.

Ethical clearance was obtained from Meru University of Science and Technology Research Ethics Committee (MIRERC) and also for Meru Teaching & Referral Hospital. Respondents signed written consent and participation was voluntary. Anonymity and confidentiality was ensured by assigning questionnaires unique identifiers/codes.

Results.

Demographic characteristics.

Three hundred and fifty two respondents were recruited into the study, majority were between 20-39 years (50.9%) ,while 29.8% were aged between 30-39, 9.4% aged 40-49, 6.8% less than 19 years and 2.8% aged 50-59 years. Additionally, 16.8% of women had university level of education, 38.6% secondary education, 36.4% primary education while 5.7% of women had no

formal education. Majority of the respondents were either peasant farmers or run small businesses and earned less than Kshs. 10,000 monthly.

Knowledge on Cervical Cancer Screening.

Among the 352 respondents, 69% were aware of cervical cancer while 46.29% were not, 86.9% did not know the cause of cervical cancer. Additionally, 38.1% had not heard of cervical screening. Those who knew about cervical cancer reported to have received the information from health care providers in hospitals they had visited and 78.4% had never heard about the human papilloma virus vaccine. A one sample t test indicated statistically significant difference between respondents who had knowledge on cervical

cancer and those who did not ($t=17.26, p=0.00$).

Pearson correlation (Table 1) was run to determine the correlation between and utilization of cancer screening services and; knowledge of cervical cancer, the cause, awareness of cervical cancer screening and knowledge on prevention of cervical cancer. The correlation analysis showed ($r=0.25, p < 0.001$; $r= 0.025, p =0.645, r= 0.294, p < 0.001$; $r= 0.109, p=0.042$). The findings depicted a statistically significant relationship between utilization of the service and knowledge of cervical cancer, and screening. To note is the positive correlation between utilization of the service and knowledge on cervical cancer, $r= 0.29$

Table 1: Correlation between knowledge and utilization of cervical cancer screening.

		Wr was screened	Wr know what is CC	Wr know cause of CC	Wr heard of CCS	Wr know prevention of CC
Wr was screened	Pearson Correlation	1	.250**	.025	.294**	.109*
	Sig. (2-tailed)		.000	.645	.000	.042
	N	352	352	352	352	352
Wr know what is CC	Pearson Correlation	.250**	1	.295**	.394**	.196**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	352	352	352	352	352
Wr know cause of CC	Pearson Correlation	.025	.295**	1	.165**	.110*
	Sig. (2-tailed)	.645	.000		.002	.039
	N	352	352	352	352	352
Wr heard of CCS	Pearson Correlation	.294**	.394**	.165**	1	.302**
	Sig. (2-tailed)	.000	.000	.002		.000
	N	352	352	352	352	352
Wr know prevention of CC	Pearson Correlation	.109*	.196**	.110*	.302**	1
	Sig. (2-tailed)	.042	.000	.039	.000	
	N	352	352	352	352	352

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Perception on cervical cancer screening.

Perception was measured on 5 point Likert scale. The questions were scored at a maximum of 5 points for positive statements, 1 point was used strongly disagreed, 2 for

disagreed , 3 for neutral,4 for agree scored and 5 for strongly. The table 2 below summarizes the descriptive statistics.

Table 2: Perception towards cervical cancer and screening.

Statements.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Do you think that cervical cancer is a serious disease?	82.85%	12.00%	3.43%	0%	1%
2. Do you believe that you can prevent yourself from getting cervical cancer?	33.52%	34.96%	20.63%	7.16%	3.73%
3. Do you believe that you are at a higher risk of getting cervical cancer than other women?	9.24%	16.80%	28.49%	22.27%	23.20%
4. Do you think what you eat determines if you will get cervical cancer or not?	16.84%	22.35%	27.57%	15.47%	18%
5. Do you fear knowing cervical cancer screening result?	25.93%	16.14%	10.09%	20.46%	27.38%
6. Getting checked for cervical Cancer is embarrassing.	20.00%	16.81%	11.88%	22.90%	28.41%
7. Do you think getting checked for cervical cancer is painful?	23.70%	23.99%	20.81%	14.74%	16.81%
8. Do you believe that cervical cancer can be treated by traditional herbalist?	4.30%	3.72%	24.93%	17.19%	49.28%

The respondents who reported to have been screened were asked to state if they would consider screening in the future. Some of them expressed lack of interest towards

screening citing various reasons. One of the respondents stated: *“It was a painful experience”*. This kind of feedback to other women may significantly impact negatively

on perception thus hindering utilization of cervical screening services.

Other major barriers to screening noted included: the lack of privacy during screening, fear of being screened, fear of the outcome from screening and embarrassment. A respondent stated “*I fear knowing the*

outcome”, another one said, “*I fear as it is embarrassing*”

A significant negative relationship between perceived pain experienced in screening and utilization of screening service was noted $r = -0.117, p = 0.029$. The results also explained a significant negative relationship between perceived embarrassments, with the actual screening ($r = -0.109, p = 0.041$). The relationships is shown in the table 3 below

Table 3: Correlation between pain, embarrassment and screening.

			CCS is painful	CCS is embarrassing	Wr was screened
Spearman's rho	CCS is painful	Correlation Coefficient	1.000	.220**	-.117*
		Sig. (2-tailed)	.	.000	.029
		N	350	350	350
	CCS is embarrassing	Correlation Coefficient	.220**	1.000	-.109*
		Sig. (2-tailed)	.000	.	.041
		N	350	351	351
	Wr was screened	Correlation Coefficient	-.117*	-.109*	1.000
		Sig. (2-tailed)	.029	.041	.
		N	350	351	352

Correlation is significant at the 0.05 level (2-tailed).

Discussion

This study findings demonstrated low knowledge and awareness of cervical cancer and screening. Though respondents had heard about cervical cancer, 86.89% of them never knew the cause of the disease. Inadequacy in knowledge significantly explained non-utilization of cervical cancer screening services, $p = 0.00$. It shows that as knowledge and awareness of cervical cancer

screening increases among women in Meru County, uptake of screening increases proportionately. This finding is congruent with that of Ndikom & Ofi, (2012) and Singh

& Badaya, (2012) where respondents in Nigeria (69.6%) did not know about prevention of cervical cancer.

Women in Nigeria had low awareness levels of cervical cancer and therefore did not utilize the services. Knowledge on screening

if given to women would enhance early detection and treatment. Wongwatcharanukul, Promthet, Bradshaw, & Tungsrithong (2014), found that majority of women were screened as a result of knowledge that they had received through cervical cancer screening campaign they had attended.

Information given by health providers to the patients about the accessibility of cervical cancer screening services significantly influenced women's decisions to get screened. This calls for further campaigns to create awareness and increase knowledge to influence screening. The important role of health care givers in influencing screening was reported by a previous study in Uganda (Ndejjo, Mukama, Musabyimana, & Musoke, 2016).

Perception on cervical cancer and screening is a major hindrance to screening. Women in Meru County never perceived themselves to be at risk of having cervical cancer, seen as a hindrance to screening uptake. Fear of results was probably due to perception that if the respondent tested positive after screening, they would be stigmatized by the society. Knowing an individual's screening results is a cause of fear to screen among the respondents.

This problem implies existence of perception and knowledge gap of cervical cancer. Mutambara et al., (2017) found out that women who were worried about being screened would seek health care services only when they experienced signs of cancer resulting to late detection. The fear of positive result therefore influences health seeking behavior.

Perception of embarrassment and pain during screening may create negative influence to other women who might have had intentions to screen in the future. Bessler, et al., (2007)

found an inverse association between embarrassment and yearly screening uptake. Women expressed that Pap tests was too embarrassing and were 76% less likely to have screened for cervical cancer as compared with women who stated non-embarrassment.

This finding presents the necessity for holistic training of women, purposed to impart knowledge on cervical cancer and screening. Health professionals play a vital role in imparting knowledge and creating opportunities for cervical cancer and screening at their respective service delivery points through access of information to women.

Conclusion

It is a fundamental responsibility of the county government to subscribe to the WHO tenet of ensuring the right to the highest attainable standard of health including reproductive healthcare.

Women have a right to appropriate, adequate and comprehensive information about cervical cancer and screening and also have right to access of reproductive health services including safe, effective, affordable and acceptable cervical cancer screening services.

The health System has the responsibility to ensure that this health function is equitably distributed. Increased knowledge on cervical cancer and screening is a key determinant to uptake of preventive actions against the disease. The study confirmed dearth of knowledge as an important factor in influencing utilization of cervical screening service.

Negative perception of women would be minimized if the health system strengthened service delivery strategies such as focused public education on cervical cancer and

screening targeted at increasing awareness, demystifying the negative perception which would necessitate an individual to seek services.

Recommendations

It is recommended that sustained public health education be provided by the County government on prevention and early detection of cervical cancer. This would create awareness and increase knowledge on cervical cancer.

In hard to reach areas, community health workers need be engaged in provision of community education on cervical screening cancer education. Stakeholder involvement needs to be instituted.

The coverage of cervical cancer screening should be increased by availing the screening services in all health facilities delivery points county- wide to create an opportunity for screening.

HPV vaccine should be rolled and administered to specific target groups. The Ministry of health needs to integrate it into the existing Kenya Expanded Programme of Immunization to make it part of the routine immunizations and perhaps collaborate with the Ministry of Education such that it is given to all primary school girls for free. Additionally, proper reporting systems and data management needs to be established to enable access to data for proper health planning.

Lastly, studies need to be done to determine the prevalence of cervical cancer in the country and also the Meru County.

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References

- Abdikarim, I. K., Carole Atieno, W. M., & Habtu, M. (2017). Prevalence and Associated Factors of Cervical Cancer Screening among Somali Women in an Urban Settlement in Kenya. *Journal of Community & Public Health Nursing*, 03(01), 1–6. <https://doi.org/10.4172/2471-9846.1000159>
- Anorlu, R. I. (2008). Cervical cancer: the sub-Saharan African perspective. *Reproductive Health Matters*, 16(32), 41–49. [https://doi.org/10.1016/S0968-8080\(08\)32415-X](https://doi.org/10.1016/S0968-8080(08)32415-X)
- Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., & Jemal, A. (2018). Global Cancer Statistics 2018: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA: A Cancer Journal for Clinicians*, 68(6), 394–424. doi: 10.3322/caac.21492.
- Kokuro, M. (2017). *Factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana* (Masters Thesis, University of Stellenbosch, South Africa.) Retrieved from <https://scholar.sun.ac.za>
- Ministry of Public health and Sanitation & Ministry of Medical Services. (2012). *National Cervical Cancer prevention program Strategic Plan 2012 -2015*. Retrieved from <https://www.k4health.org/toolkits/kenya-a-health/national-cervical-cancer-prevention-program-strategic-plan->

2012-2015

6/s12905-018-0586-0

- Ndejjo, R., Mukama, T., Musabyimana, A., & Musoke, D. (2016). Uptake of Cervical Cancer Screening and Associated Factors among Women in Rural Uganda: A Cross Sectional Study, *PLoS One*, 11(2):e0149696. doi: 10.1371/journal.pone.0149696
- Ndikom, C. M., & Ofi, B. A. (2012). Awareness , perception and factors affecting utilization of cervical cancer screening services among women in Ibadan , Nigeria : A qualitative study. *Reproductive Health*, 9(1), 1. Retrieved from <https://doi.org/10.1186/1742-4755-9-11>
- Sreedevi, A., Javed, R., & Dinesh, A. (2015). Epidemiology of cervical cancer with special focus on India. *International Journal of Women 's Health*, 7, 405–414. Retrieved from <https://doi.org/10.2147/IJWH.S50001>
- Swanson, M., Ibrahim, S., Blat, C., Oketch, S., Olwanda, E., Maloba, M., & Huchko, M. J. (2018). Evaluating a community-based cervical cancer screening strategy in Western Kenya: a descriptive study. *BMC Women 's Health*, 18(1), 116. <https://doi.org/https://dx.doi.org/10.1186/s12905-018-0586-0>
- Wentzensen, N., & Schiffman, M. (2018). Accelerating cervical cancer control and prevention. *The Lancet Public Health*, 3(1), e16–e23. [https://doi.org/10.1016/S2468-2667\(17\)30242-6](https://doi.org/10.1016/S2468-2667(17)30242-6)
- Wongwatcharanukul, L., Promthet, S., Bradshaw, P., & Tungsrithong, N. (2014). Factors Affecting Cervical Cancer Screening Uptake by Hmong Hilltribe Women in Thailand, *Asian Pacific Journal of cancer Prevention* 15(8),3753–3756.
- World Health Organization. (2013). *Guidelines for screening and treatment of precancerous lesions for cervical cancer prevention*. WHO. Retrieved from http://www.who.int/reproductivehealth/publications/cancers/screening_and_treatment_of_precancerous_lesions/en/index.html
- World Health Organization. (2014). *Comprehensive Cervical Cancer Control: A guide to essential practice*. (2nd ed.) WHO. Retrieved from <http://www.who.int/iris/handle/10665/144785>