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UPTAKE OF CERVICAL CANCER SCREENING SERVICES AMONG NURSES WORKING AT THIKA LEVEL 5 HOSPITAL

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ABSTRACT

Background: Cervical cancer is the second commonest type of cancer among women globally, an estimated 270000 women die annually due to cervical cancer with 85% of this deaths occurring in Sub-Saharan African countries. Nurses are largely involved in screening and treatment of cervical cancer. Studies done in some countries have indicated low utilization of cervical cancer screening services by nurses. According to the National guidelines for prevention and management of reproductive system cancers, the situation of cervical cancer is worse in Kenya with a rate of 2454 new cases and mortality of 1676 annually¹

Objective: To determine the proportion of nurses screened for cervical cancer at Thika Level 5 hospital

Design: A descriptive cross sectional study design; A systematic sampling technique was used where every 2nd nurse was selected from the sampling frame; data were collected using a semi structured questionnaire. The study was conducted at the Thika Level 5 hospital. Ethical clearance was obtained from Mount Kenya University and Thika Level 5 Hospital. Data was analyzed using SPSS version 22.

Population: The study targeted all nurses working at Thika Level 5 Hospital.

Outcome Measures: The percentage of nurses screened as per the National guidelines was low.

Results: There was a positive correlation factor of (0.33) between knowledge and screening status showing a positive upwards relationship

Conclusions: There was low uptake (41%) of cervical cancer screening services mainly due to inadequate knowledge on prevention strategies.

Recommendations; Nurses should be encouraged to take the initiative and be screened for cervical cancer.

INTRODUCTION

Cervical cancer is the second commonest type of cancer among women globally. Every year a total of 530,000 new cases of cervical cancer are diagnosed requiring treatment, an estimated number of 270000 women die annually due to cervical cancer with 85% of this deaths occurring in Sub-Saharan countries.¹ In USA, incidence of cervical cancer is on the decline owing to high screening rate.²

A study done in Japan revealed that only 13.7% of nurses interviewed had been screened for cervical cancer within two year period.³ Another study done in Nigeria has shown that only 10% of nurses interviewed had ever been screened for cervical cancer. Cervical cancer is the second most common type of cancer affecting women in Kenya. The rate of cervical cancer screening in Kenya is 3.2% which is way below the average of 6% in developing countries, nurses, are among the health professionals largely involved in screening and treatment of positive cervical cancer precancerous lesions yet studies done in some countries have indicated low utilization of cervical cancer screening services by nurses.⁴ Approximately 35.8% of all women in East Africa harbor HPV virus, cervical cancer prevention programs are usually done by healthcare workers who are mainly nurses, doctors and clinical officers and screening is part of secondary prevention which aims at early detection of cervical pre-cancerous lesions through screening by various methods i.e visual inspection with acetic acid (VIA), visual inspection with Lugo's iodine (VILI), and Papanicolaousmear (Pap smear).⁵

Reasons cited by nurses for not being screened for cervical cancer include: fear of cervical cancer screening test result, not at risk of cervical cancer perception where nurses view

themselves as low risk for cervical cancer, and fear of pain during cervical cancer screening procedure.⁶ It was therefore necessary to assess the proportion of nurses screened for cervical cancer at Thika Level 5 hospital, Kiambu County, in Kenya.

MATERIALS AND METHODS

Research design: A descriptive cross-sectional study design was used.

Study area: The study was conducted in Thika level 5 hospital, a public hospital in the County government of Kiambu, Kenya. Thika sub-county covers an area of 1,960.2 sq Km² and has a population of 700,912 people. The hospital serves as a referral hospital for many government, faith based, non-governmental organizations and private health facilities within and outside Thika Sub-county. The hospital has a capacity of 300 beds and a total of 460 staffs: 264 nurses, 12 consultant doctors, and 15 medical officers among other cadres.

Study population: The study targeted all female nurses working at Thika Level 5 Hospital.

Inclusion criteria Nurses working Thika Level 5 Hospital *Sample size determination.* The sample size was calculated using Fisher et al formula⁷

The number of female nurses at Thika level 5 hospital by December 2013 was 240 nurses. The sample size will be determined using the following formula: $n = \frac{Z^2 pq}{d^2}$

Where: n = the desired sample size

Z = the standard normal deviation at the required confidence level

P = the proportion in the target population estimated to have the characteristics being measured

q = 1-p

d = the level of statistical significance set

Since there were no estimates available of the proportion in the target population with the characteristics of interest, 50% was used as recommended by Fisher et al (as cited in Mugenda & Mugenda. 2003, p.42-44).

$$n = \frac{(1.96)^2(0.5)(1-0.5)}{(0.05)^2}$$

$$= \frac{3.8416(0.25)}{0.0025} = \frac{0.9604}{0.0025} = 384.16 \approx 384$$

subjects

Since the population size is less than 10000, the final sample estimate (n_f) was calculated using the formula:

$$n_f = \frac{n}{1 + (n/N)}$$

Where: n_f = The desired sample size (when population is less than 10000)

n = the desired sample size (when population is more than 10000)

N = the estimate of the population size (240)

$$N_f = \frac{384}{1 + (384/240)}$$

$$= \frac{384}{2.6} = 152.69 \text{ respondents.}$$

$$153 + 10\% \text{ none respondents} = 153 + (10\% \text{ of } 153) = 153 + 15.3 = 168 \text{ participants}$$

Sampling technique: Systematic random sampling technique was utilized to select a sample of 168 participants from the sampling frame of 240 female nurses of Thika Level 5 Hospital. The researcher got the list of female nurses working at Thika level 5 hospital from the nursing officer in-charge, the sampling interval was calculated by dividing the total population by the sample size to get the n th

name: $240/168 = 1.47$ therefore every 2nd name was sampled. A random number was picked using table of random numbers and this formed the starting point from list of names of eligible nurses where every second name was sampled until the desired sample size of 168 was achieved then sampled nurses were traced and included in the study after consenting to participate

Study variables

Independent variables

Demographical factors: age, marital status, education level, years of job experience

Dependent variable

Proportion of nurses screened for cervical cancer

Data collection Instruments

A Semi-structured questionnaire was used to collect quantitative and qualitative data.

Validity and Reliability

To ensure validity and reliability of the data collection tool, a pre-test was done at Mathari hospital in Nairobi. A total of 12 participants (7.4%) were used. The choice of Mathare hospital was critical because the population in both institutions share similar characteristics. The 2 institutions (Mathare teaching and referral hospital and Thika level 5 hospital), are high density hospitals, with almost same number of nurses and are located in relatively same geographical area; both hospitals operate 2 cervical cancer screening centers and therefore the pre-test findings were expected to show little or no variations. Research assistants were also trained.

After the pre-test, questions which were ambiguous were restructured, unnecessary questions eliminated, an amended questionnaire was then prepared read for data collection.

Data collection process

The questionnaires were self-administered, the respondents were allowed adequate time

to fill them before collection within the same day. Selection bias was minimized by using probability sampling (systemic random sampling) the questionnaire was short and the researcher followed up on non-responders.

Data management and analysis

Data was cleaned and entered into the computer, tabulated: arranged into concise and logical order, descriptive and inferential statistics were calculated. Analyses of variance were used to find out the statistical significant differences between variables and associative correlations used to show strength of relationship between variables. Quantitative data was presented in frequency distribution tables, and percentages. Qualitative data was organized and categorized, then themes and patterns established, analyzed quantitatively then presented in tables and pie charts.

Ethical considerations

Mt. Kenya University Ethics Review Committee (ERC) reviewed the proposal for ethical consideration and approval to conduct this study was given. The proposal was also reviewed and study approved by the Research and Ethics Committee of Thika Level 5 Hospital. Permission to access the wards was granted by the respective ward in-charges. The respondents were explained about the study in detail, participants who agreed to participate gave a written consent. The obtained data was treated with confidentiality

RESULTS

To find out the uptake of cancer screening services by nurses, five questions were presented to the respondents: these were to find out their cervical cancer screening status, site where cervical cancer screening took place (for yes responses), reasons not being screened for cervical cancer (for no responses), when

cervical cancer screening was done, and whether the respondents had ever recommended other women for cervical cancer screening.

The study recorded a response rate of 97%, On the uptake of cervical cancer screening services, the findings indicate screening rate of below average (Out of 163 respondents only 41% had ever been screened) and 53% of the unscreened respondents didn't feel susceptible to cervical cancer.

Social demographical characteristics

Age of the respondents (N=163)

Respondents were asked about their ages: 10% (16) of the respondents were between 20 and 29 years, 33% (54) were between 30 and 39 years, 37% (60) were between 40 and 49 years while 20% (33) were between 50 and 59 years.

Level of training (N=163)

At the time of the study, 10% (17) of the respondents were enrolled nurses, 81% (132) were diploma holders, and 7% (12) had a Bachelor of science in Nursing, while masters accounted for 2% (2), this has implication on the knowledge of cervical cancer hence the uptake of screening services. 23% of nurses were screened for cervical cancer in the job experience bracket of 1-10 years, 58% of the nurses within job experience bracket of 21-30 years were screened and 71% of those with 30 years of job experience and above were screened respectively.

Respondents' years of job experience

Years of nursing practice varied among the respondents, at the time of the study; 24% (39) had 1-10years of experience, 52% (84) had 11-20 years of working experience, 20% (33) had 21-30 years of working experience and those with work experience of more than 30 years were 4% (7).

Respondents' marital status (N=163)

Respondents were asked to indicate their marital status: 24% (39) were single, 71% (115) were married, 1% (2) was divorced, 2% (4) were separated, while 2% (3) were widowed.

Religion of respondents (N=163)

Respondents were asked to indicate their religion: 31% (50) were Catholics, 67% (109) Protestants and 2% (4) were Muslims, figure 1.3.

Proportion of nurses screened for cervical cancer

Respondents were asked if they have ever been screened for cervical cancer, (59%) of the respondents had never been screened for cervical cancer, the screened proportion was 41% (67). (Table 1)

Table 1

Ratio of respondent's ever screened for cervical cancer and those who have never been screened for cervical cancer

Ever screened for cervical cancer	Frequency	Percentage (%)
Yes	67	41
No	96	59
Total	163	100

Statistical significance test between the respondents screened for cervical cancer and respondents who have never been screened for the same

There was a significant statistical difference between those who knew their cervical cancer status and those who had never been screened for cervical cancer a p-value of 0.0005 was

obtained (table 2), however there was no major statistical difference across various levels of training and knowing one's status (p-value=0.217) (table 3). There seems to be a statistical significant difference of knowing ones status across various years of job experience (p-value=0.008) as shown in table 4.

Table 2

Statistical significance test between the respondents screened for cervical cancer and respondents who have never been screened for the same

Test of significance	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Cervical cancer screening status	-1252.324	163	0.0005	-48.4110	-48.487	-48.335

Table 3

Statistical significance test of respondents screened for cervical cancer and those who had never been screened for the same across levels of training (ANOVA)

ANOVA					
Test of significance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.085	3	.362	1.499	.217
Within Groups	38.375	160	.241		
Total	39.460	163			

Table 4

Statistical significance test of the screened respondents and those who have never been screened for cervical cancer across levels of job experience

Test of significance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.810	3	.937	4.063	.008
Within Groups	36.650	160	.231		
Total	39.460	163			

Site where respondents went to be screened for cervical cancer (N=67)

Respondents were asked to indicate the site where they went for screening for cervical cancer; 3% (2) were screened at Thika Level 5 MCH clinic, 15% (10) Thika Level 5 hospital reproductive clinic, while 79% (53) of the nurses were screened for cervical cancer from a private clinic, and 3% (2) other sites.

Reasons for not being screened for cervical cancer. (N=96). The respondents who were not screened were asked to give reasons why they had never been screened for cervical cancer, more than half (64%) of them had no specific reason for not been screened for cervical cancer, 2% (2) indicated fear of pain, 25% (24)

did not feel susceptible for cervical cancer, 8% (8) were afraid of test results, while 1% (1) gave other reasons for not been screened for cervical cancer.

Current status of respondents on cervical cancer screening (N=96). The screened respondents were asked to indicate when they were screened for cervical cancer currently, the findings show that all the screened respondents were screened within the last four years: 15% (10) of the respondents were screened in less than a year, 27% (18) a year ago, 33% (22) 2 years ago, 13% (9) 3 years ago, while 12% (8) were screened 4 years ago (Table 5).

Table 5*Current status of respondents on cervical cancer screening (N=96)*

Time screened last	frequency	Percentage (%)
Less than a year	10	15
A year ago	18	27
2 years ago	22	33
3 years ago	9	13
4 years ago	8	12
Total	67	100

Proportion of respondents who ever recommended a woman for cervical cancer screening. Respondents were asked if they had ever recommended a woman for cervical cancer screening; most (93%) of the

respondents had recommended a woman for cervical cancer screening, and only 7% (7) of the respondent had never recommended any woman for cervical cancer screening. (Table 6)

Table 6*Proportion of respondents who ever recommended a woman for cervical cancer screening*

Whether or not respondents ever recommended a woman for cervical cancer screening	Frequency	Percentage (%)
Yes	151	93
No	12	7
Total	163	100

Cross tabulation of respondents' knowledge of causes of cervical cancer and having been screened for cervical cancer.

Findings indicate a positive correlation factor of 0.133 exists between knowledge and

screening status implying knowledge on cervical cancer has a positive upwards relationship with screening for the same as shown in (Table 7)

Table 7*Cross tabulation of respondents' knowledge of causes of cervical cancer and having been screened for cervical cancer*

Correlations		Causes of cervical cancer	Cervical cancer screening status
Knowledge of causes of cervical cancer	Pearson Correlation	1	.133
	Sig. (2-tailed)		.092
	N	163	163
Cervical cancer screening status	Pearson Correlation	.133	1
	Sig. (2-tailed)	.092	
	N	163	163

DISCUSSION

This was a study to investigate uptake of cervical cancer screening services by nurses working at Thika Level 5 Hospital;

Social -demographic characteristics of respondents. Majority (70%) of the respondents were aged between 30 and 50 years, this indicates that in Thika Level 5 Hospital, nursing care service provision is dominated by nurses who are in their middle age. This shows that majority of nurses were within the target population of cervical cancer screening as per the Kenya cervical cancer screening guidelines which recommends that women over the age of 25 years be screened every 3years up to the age of 49years then every 5 years up to the age of 64. This is mainly because cervical cancers develop mainly in women aged 25 years and above and the risk decreases significantly in menopause.

Most (81%) of the respondents were diploma holders and this may be attributed to the nurses upgrading from enrolled to registered level, a program which was initiated in the country few years ago. Findings from this study indicate a positive correlation factor of 0.133 existed between knowledge and screening status implying knowledge on cervical cancer has a positive upwards relationship with screening.

With regard to job experience, 85% of the respondents have a job experience of between 11 and 30 years, this indicates that nursing care in Thika Level 5 Hospital is provided by highly experienced nursing staff; however there was no major statistical difference across various level of training and knowing one's status (p -value=0.217). There was a statistical significant difference of knowing ones status across various years of job experience (p -value=0.008).

Findings of this study also show that nurses with fewer years of job experience are less likely to be tested for cervical cancer, this is demonstrated by low (23%) rate of nurses screened for cervical cancer in the job experience bracket of 1-10 years compared to 58% of the nurses with a job experience of 21-30 years, and 71% of those with above 30 years of job experience respectively. The results in this study can be explained by the fact that younger women tend to be healthier and therefore may not see the need to screen for cervical cancer however, according to WHO, all women aged 25 years and above are eligible for cervical cancer screening, younger women of less than 25 years of age who are HIV positive, and those who are sexually active regardless of the age¹. The study has shown that screening rate increases (p -value 0.008) with increase in years of job experience, the

screening rate was lowest among nurses with a job experience of 1-20 years and highest among those with more than 30 years' experience. The study indicates that, most (80%) of the screened respondents chose to be screened from private clinics as opposed to Thika Level 5 hospital MCH and reproductive health clinics. Among this group, all the respondents who knew their status had been screened within the past four years.

Proportion of nurses screened for cervical cancer

The study showed that despite respondents' eligibility for screening, 59% of them had never been screened for cervical cancer with no specific reason. Other reasons given for having not been screened include: perception of non-vulnerability to the disease (25%), and fear of positive results (8%). In this study 41% of the respondents were screened, this is contrary to the 3.2 screening rate of 3.2%, this could be because of the targeted population of nurses who know the risks of cervical cancer; however, the 41% is still way below the 100% cervical cancer screening coverage recommended by WHO¹. Low rate of cervical cancer screening among nurses as shown in this study, seems to be a problem among nurses in many countries; a study done in Japan⁶ revealed that 96.3% of the respondents had never been screened. Other studies done in Nigeria^{5,8}, reported a similar trend of 67.4% and 90% of unscreened proportion of nurses respectively; in these studies, nurses considered themselves at low risk for cervical cancer, were afraid of positive cervical cancer test results, or were afraid of pain during the cervical cancer screening procedure.

This study has also established that knowledge on cervical cancer and preventive strategy has some bearing on screening behavior of nurses; this is evidenced by a positive correlation factor of 0.33 that existed between knowledge

and screening status showing a positive upwards relationship. This finding is similar to other studies done in India⁹ and in Malawi¹⁰ which indicated that knowledge is a significant predictor of uptake of cervical cancer screening among nurses. However another study found out that uptake of cervical cancer screening is not affected by knowledge of the subject but is greatly influenced by individual attitudes towards screening and perceived barriers.¹¹

CONCLUSION

Cervical cancer continues to be a major public health problem in Kenya. The study indicated low uptake of cervical cancer screening services as more than half (59%) of the respondents had never been screened for cervical cancer, nurses felt susceptible for cervical cancer and believed that cervical cancer screening is beneficial and have recommended other women to go for cervical cancer screening, this attitude is not reflected on the proportion of nurses screened for cervical cancer.

RECOMMENDATIONS

The county government, department of health to prepare screening programs for cervical cancer for nurses and other health workers separate from other patients to increase uptake of the services.

Nurse managers to identify champions among nurses to encourage nurses to take responsibility for their own health by actively participating in the cervical cancer screening programs, this can be achieved through the hospital nursing management organizing for a cervical cancer screening day in the hospital to motivate nurses to take a cervical cancer screening test.

RECOMMENDATION

The study also recommends other similar studies to establish uptake of cervical cancer screening services by nurses in other Counties in Kenya.

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