CERVICAL CANCER SCREENING AMONG CERTIFIED NURSES IN ENUGU:

KNOWLEDGE, ATTITUDE AND UPTAKE OF PAP SMEAR TEST

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SUMMARY

Cervical cancer is to a large extent preventable by effective screening. The effectiveness of such screening depends on the knowledge and attitude of the women.

Objectives: To ascertain the knowledge of the certified nurses in a teaching hospital in Nigeria to cervical cancer, their attitude to cervical cancer screening and factors hindering their uptake of available screening services (pap smear test).

Methods: Structured questionnaires were self administered to the consenting certified nurses working at University of Nigeria Teaching Hospital Enugu, in South Eastern Nigeria.

Results: Showed that 92.2% of the nurses were aware of cervical cancer screening. Fifty three percent of the respondents attributed the cause of cancer of the cervix to sexually transmitted infection and 2.2% of them identified human papilloma virus as a factor. Only 28 (12.2%) of the respondents have ever done pap smear test. The commonest reason given by the nurses who had never been screened was that they did not have any complaint and hence not at risk of having cervical cancer. Years of practice has a significant influence on the knowledge of cervical screening and screening procedures.

Conclusion: The nurses have good knowledge of cervical cancer screening but very low uptake of Pap smear test. There is a great need for continuous education of the nurses on the need to change attitude that will ensure improved uptake of cervical cancer screening (Pap smear test).

Key Words: Cervical cancer, screening, knowledge, Pap smear, certified nurses.
INTRODUCTION
Cancer of the uterine cervix is the second most common malignancy involving women worldwide, being second only to breast cancer. It is estimated that about 510,000 new cases of cancer of the cervix are diagnosed and 288,000 deaths recorded annually with almost 80% occurring in developing nations.\(^1\) There is no accurate data to quote for Nigeria, but a WHO Report estimated the crude incidence rate of cervical cancer to be 16.7/100,000, an estimated 9,922 women are diagnosed of cervical cancer and 8030 die from the disease every year\(^2\). Cancer of the uterine cervix ranks as the second most common cancer affecting women and remains the commonest gynaecologic cancer in Nigeria\(^3\) as well as the most common cause of cancer death in women\(^4\). Nearly all cases of cervical cancer are associated with human papilloma virus (HPV)\(^5,6\). The presence of human papilloma virus infection is a sine qua non in cervical carcinogenesis and most other factors mediate their effect via exposure to HPV or by affecting susceptibility to the carcinogenic effect of HPV\(^7\). Globally, 50% to 80% of sexually active women are infected by HPV at least once in their life time\(^5\) and in Nigeria, it is estimated that about 23.7% of the women harbour cervical HPV infection\(^2\). In 2006, the first Vaccine against the HPV was approved and within 1 year more than 70 countries have approved the routine use of the vaccine to adolescent girls\(^5\). However, in Nigeria it is not used routinely.

The incidence of invasive cervical cancer has declined steadily in developed countries like America, but very high rates are recorded in many developing countries.

This difference in the epidemiological trend has been widely attributed to the routine use of conventional cervical cytology test popularly known as Papanicolaou (Pap) smear tests to screen for cancer of cervix. Some other newer screening methods currently available include, liquid-based cytology test, human papilloma virus DNA test, visual inspection with use of acetic acid (VIA), and visual inspection with use of Lugol’s iodine (VILI)\(^8\). Unlike many cancers, cancer of the cervix is to a large extent preventable by effective screening programmes. Screening has been known to reduce cancer of cervix in an unscreened population from 60-90%\(^9\). For example, in Finland where the quality and coverage of such screening programme was high, the incidence of invasive cervical cancer has been reduced by about 80%\(^10\). It is estimated that while more than 70% of the women in developed countries have had Pap smear screening test, in some developing countries the rate was about 1%\(^5\). In Nigeria, some available studies reported very poor level of uptake of cervical cancer screening services among women. In a study at Nnewi (in south-east Nigeria) among nurses working in a teaching hospital, 5.7% utilization was reported, 6.8% was reported among health workers from Ibadan (in south-west Nigeria), and 14.1% was reported from a study of health workers in Benin (in south-south Nigeria)\(^11,12,13\). Even when the Pap smear test was free or cost highly subsidized, the level of participation in cervical cancer screening was still low with majority of the screened women referred for the test\(^14\).

Most Pap smear recorded so far in Nigeria result from opportunistic or spontaneous screening and the level of such opportunistic screening of the
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women by the physician has been reported to be very low\textsuperscript{15}. The trend has always been for the women to present for treatment with advanced stage disease. Poor education and lack of awareness of cervical cancer and its screening are among the reasons for the poor practice of Pap smear test in developing countries\textsuperscript{16}. Several studies have reported poor level of knowledge of cervical cancer and cervical cancer screening procedure (pap smear test) in various regions of Nigeria\textsuperscript{17,18,19}. However, women health care workers have shown good knowledge of cervical cancer screening services but their uptake of cervical cancer screening is still poor\textsuperscript{11,12,13}. This study aims to assess the knowledge, attitude and uptake of cervical cancer screening amongst certified nurses in a Nigerian tertiary hospital. This is very important as nurses will be in the forefront of cancer awareness campaign designed for this part of the country. There is the need to document and properly evaluate the problems to be encountered. The desire to do this survey started after the 2\textsuperscript{nd} international meetings for operation stop cervical cancer in Nigeria which took place from July 9 to 15, 2006 in Nigeria. A structured questionnaire was modified from the sample questionnaire in ‘A Manual for Managers titled Planning and Implementing Cervical Cancer Prevention and Control Programs’\textsuperscript{8}

An oncology centre (including radiotherapy facility) has been established at UNTH Enugu to facilitate the treatment of cancer cases particularly for the south-east region and for other neighbouring states. So this study is necessary for a better understanding and better cervical cancer screening service to the community.

MATERIALS AND METHODS

The questionnaire was first pretested using twenty certified nurses working in the out patient clinics at University of Nigeria Teaching Hospital (UNTH). This was repeated again after two weeks using same respondents. The authors then reviewed the data collected and revised the questionnaire based on some noted flaws. The modified instrument was then examined by the authors for construct and content validity. Test and retest technique was used to test for the reliability of the questionnaire during the pretesting. When the data was subjected to Pearson product correlation coefficient, the reliability was found to be significant at 0.05 levels. A minimum sample size was determined using a pre-existing formula; $p \times q / \text{SE}$, where $p$ is prevalence, $q$ is $100 - p$ and SE is sampling error of 5\textsuperscript{20}. Using a prevalence of 87.1\% for knowledge of cervical cancer in health workers in a previous study\textsuperscript{11}, and a sampling error of 5\%, the minimum required sampling size was 225.

The modified questionnaire was self administered to certified nurses working at UNTH Enugu. The exercise lasted for three months, between January and March 2008. Random sampling method was done and the questionnaires were self administered to the nurses on morning or afternoon duty till at least 225 properly filled questionnaires were obtained.

The questions covered the knowledge of cancer of cervix and cervical cancer screening, the attitudes of the respondents to the screening, the uptake of cervical cancer screening (Pap smear test) and the socio-demographic characteristics of the respondents.
The data collected was analyzed using SPSS version 11 Statistical programme. Descriptive statistics and Pearson Chi-Square test for difference in proportions were used for univariate analysis. A p-value of 0.05 or less was considered statistically significant.

**OPERATIONAL DEFINITIONS**

Knowledge of cervical cancer screening: a respondent is said to have knowledge of cervical cancer screening if she could answer correctly 50% or more of the ten questions on knowledge (awareness) of cervical cancer and its screening as contained in the questionnaire. This has been validated in a study.\(^{13}\)

Lack of knowledge of cervical cancer screening: a respondent who could not answer up to 50% of the ten questions on the knowledge of cervical cancer and its screening.

Practice of cervical cancer screening by the nurses: refers to uptake of cervical cancer screening service (Pap smear test) by the nurses.

Certified nurses: nurses who were employed as qualified nurses having completed at least general nursing / or midwifery training. General nursing students were excluded.

**RESULT**

Out of 250 questionnaires distributed, 230 were properly filled and returned giving a response rate of 92%. Table 1 shows the socio-demographic characteristics of the respondents. The age of the nurses ranged from 19 to 59 years with a mean age of 41.3 years. One hundred and seventy one (74.3%) of the respondents were ever married while 59 (25.7%) were single. One hundred and sixty nine (73.5%) of them have worked as certified nurses for more than 5 years while 61 (26.5%) have not worked more than 5 years. Table 2 shows the knowledge and uptake of cervical cancer screening by the respondents. Of the 230 women that responded, 212 (92.2%) had some knowledge of cervical cancer screening while 18 (7.8%) lack the knowledge. Pap smear test is the procedure most of the respondents knew about, constituting 84.8 %. Fifty three percent of the respondents attributed the cause of cancer of the cervix to sexually transmitted infection and only 5 (2.2%) of them identified human papilloma virus as a factor, 31% believed that contraceptive drugs contribute to the causation while 24% had no idea. When the result was disaggregated between those nurses that have worked for 5 years or less and those that have worked for more than 5 years there was statistically significant difference in the knowledge (awareness) of cervical cancer screening with \(p\) – value 0.02 and knowledge of the screening procedures with \(p\) – value 0.001 at 95% confidence. Only 28 (12.2%) of the respondents had ever been screened for cervical cancer while 202 (87.8%) had never done any cervical cancer screening. However, there was no statistical significant difference in the uptake of cervical cancer screening among the two groups. The analysis of what motivated the screened nurses to accept the procedure showed that 78.6% of them did the Pap smear test because of doctor’s referral and 21.4% decided on their own to do it. Their source of information about cervical cancer screening is shown in
The most common source of information was from formal lectures contributing 35.7% followed by knowledge gained during work exposure constituting 30.4%. The factors hindering the uptake of cervical cancer screening services among the nurses are depicted in table 4. The commonest reason given by the nurses on why they have not been screened was that they did not have any medical complaint that will necessitate going for the screening test. This was claimed by 111 (48.3%) of the respondents. Sixty eight (29.6%) of the nurses have never thought about doing the screening being the second most important reason. Other reasons were lack of knowledge about cervical cancer screening and the believe that it was not necessary contributing 6.1% each, fear of the outcome of the screening constituted 5.6% while 4.3% did not know where to go for the screening. There is statistically significant difference for factors hindering the uptake of cervical cancer screening between the nurses that have worked for 5 years or less and those that have worked for more than 5 years with chi square of 0.007. Out of the 230 respondents, 219 (95.2%) were ready to accept vaginal examination and 11 (4.8%) would not accept when asked if they will accept vaginal examination if it will help to prevent them from having cervical cancer. The nurses that would not accept vaginal examination claimed that they were not at risk of having cervical cancer.

**DISCUSSION**

The result of this study shows that the nurses have good knowledge of cervical cancer screening (92.7%), low knowledge of human papilloma virus (2.2%) and very low level of uptake of cervical cancer screening (12.2%). So having high knowledge does not translate proportionately to high level of uptake of cervical cancer screening. This result contradicts what is obtainable in the developed countries where greater knowledge of cervical cancer is positively associated with higher uptake of cervical cancer screening or pap smear test but it is similar to the findings of many studies in Nigeria and some other developing countries where uptake is very low even among those who prophase greater knowledge. This difference between the developed and developing countries could be attributed to the fact that there is lack of targeted routine cervical cancer screening programmes in less developed countries unlike the developed nations where routine screening has been in place for decades. The gap in the knowledge and uptake of cervical cancer screening in this study was due to poor attitude, the nurses perceive it as irrelevant to go for test when there is no complaint or symptoms and this calls for attitudinal change. The only significant predictor of knowledge of cervical cancer screening and screening procedures in this study is the number of years of service with the certified nurses that have worked for more than 5 years having better knowledge than those that have worked for 5 years or less. This is because cervical cancer patients constitute an important proportion of gynaecological admissions and the more the number of years of practice the more likelihood of experience with cervical cancer cases. This is evidenced by the fact that 30.4% of the nurses got their information about cervical cancer screening from work experience. However, this better knowledge has failed to reflect in the uptake of the screening.
We have found out that the nurses in this study did not appreciate the importance of routine cervical cancer screening and hence the poor attitude and uptake of Pap smear test. There is need to educate the nurses to understand the benefit of cervical cancer screening so as to imbibe the attitude of regular routine uptake of pap smear test.

The commonest source of knowledge in this study is from formal lectures being 35.6%. With the formal lecture one expects 100% awareness, and high uptake of pap smear test, but it is not so. This could mean that there is inadequate communication of information to the nurses during their training in school. The knowledge of human papilloma virus and its association with cervical cancer is very low among the nurses. So also their knowledge of availability of vaccine against human papilloma virus is poor. However, it has been noted that there is a general low level of awareness of human papilloma virus even in the developed nations\textsuperscript{26}. But since our nurses are expected to participate in advocacy for routine cervical cancer screening in order to achieve community mobilization towards the uptake of the screening services, their knowledge about human papilloma virus must improve.

There is a great need for continuous education of the nurses. Cervical cancer screening education should be part of the nursing curriculum including psycho-educational and other interventions that will modify attitudes and improve uptake of Pap smear test so that they are better positioned to encourage other women to be screened. Until national population based screening programme is established and operational in Nigeria, hospitals should establish a screening programme that should make it mandatory for all her female employees of appropriate age to have free regular Pap smear test.

\textbf{LIMITATIONS OF THE STUDY}

Some of the nurses could have misunderstood Pap smear test to mean vaginal swab test for infection as the analysis given here is based on self-reported information that was not validated. Self-reported behaviours can be overestimated\textsuperscript{27} and so the knowledge and uptake quoted in this study could have been overestimated.

\begin{table}[h]
\centering
\caption{Sociodemographic characteristics of the respondents}
\begin{tabular}{|c|c|c|}
\hline
\textbf{Characteristics} & \textbf{Frequency} & \textbf{\%} \\
\hline
\textbf{Age groups} & & \\
29 and below & 36 & 15.7 \\
30-39 & 56 & 24.3 \\
40-49 & 77 & 33.5 \\
50 and above & 61 & 26.5 \\
\hline
\textbf{Marital Status} & & \\
Single & 59 & 25.7 \\
Married/divorced & 171 & 74.3 \\
\hline
\textbf{Years of service} & & \\
5yrs and below & 61 & 26.5 \\
>5yrs & 169 & 73.5 \\
\hline
\end{tabular}
\end{table}
**Table 2. Knowledge and uptake of cervical cancer screening**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Practiced nursing ≤5years</th>
<th>Practiced nursing &gt;5years</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had knowledge (n=212)</td>
<td>52 (24.5%)</td>
<td>160 (75.5%)</td>
<td>0.02</td>
</tr>
<tr>
<td>Lack knowledge (n=18)</td>
<td>9 (50%)</td>
<td>9 (50%)</td>
<td></td>
</tr>
<tr>
<td>Knowledge of risk factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infection/coitus (n=122)</td>
<td>36 (29.5%)</td>
<td>86 (70.5%)</td>
<td>NS</td>
</tr>
<tr>
<td>Drugs (n=31)</td>
<td>10 (32.3%)</td>
<td>21 (67.7%)</td>
<td></td>
</tr>
<tr>
<td>Smoking (n=9)</td>
<td>2 (22.2%)</td>
<td>7 (77.8%)</td>
<td></td>
</tr>
<tr>
<td>Hereditary (n=7)</td>
<td>1 (16.7%)</td>
<td>5 (83.3%)</td>
<td></td>
</tr>
<tr>
<td>Food (n=6)</td>
<td>12 (21.8%)</td>
<td>43 (78.2%)</td>
<td></td>
</tr>
<tr>
<td>No idea (n=55)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of procedures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pap smear (n=195)</td>
<td>43 (22.1%)</td>
<td>152 (77.9%)</td>
<td>0.001</td>
</tr>
<tr>
<td>VIA/VILI (n=1)</td>
<td>1 (100%)</td>
<td>4 (100%)</td>
<td></td>
</tr>
<tr>
<td>HPV (n=4)</td>
<td>13 (43.3%)</td>
<td>17 (56.7%)</td>
<td></td>
</tr>
<tr>
<td>None (n=30)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever been screened</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (n=28)</td>
<td>5 (17.9%)</td>
<td>23 (82.1%)</td>
<td>NS</td>
</tr>
<tr>
<td>No (n=202)</td>
<td>56 (27.7%)</td>
<td>146 (72.3%)</td>
<td></td>
</tr>
</tbody>
</table>

*NS = not significant. VIA= Visual Inspection with Acetic acid
VILI= Visual Inspection with Lugol's Iodine. HPV= Human Papilloma Virus

**Table 3. Sources of information on cervical cancer screening**

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal lecture/seminar</td>
<td>82</td>
<td>35.7</td>
</tr>
<tr>
<td>Work experience</td>
<td>70</td>
<td>30.4</td>
</tr>
<tr>
<td>Print/Electronic media</td>
<td>57</td>
<td>24.8</td>
</tr>
<tr>
<td>Friends</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td>No response</td>
<td>19</td>
<td>8.2</td>
</tr>
<tr>
<td>Total</td>
<td>230</td>
<td>100</td>
</tr>
</tbody>
</table>

**Table 4. The factors hindering the uptake of cervical cancer screening among the 202 nurses that have never screened**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Frequency</th>
<th>5yrs or less</th>
<th>&gt;5yrs</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No complaint</td>
<td>111</td>
<td>37 (33.3%)</td>
<td>74 (66.7%)</td>
<td>0.007</td>
</tr>
<tr>
<td>Never thought of it</td>
<td>40</td>
<td>3 (7.5%)</td>
<td>37 (92.5%)</td>
<td></td>
</tr>
<tr>
<td>Not necessary</td>
<td>14</td>
<td>5 (35.7%)</td>
<td>9 (64.3%)</td>
<td></td>
</tr>
<tr>
<td>Lack of knowledge</td>
<td>14</td>
<td>5 (35.7%)</td>
<td>9 (64.3%)</td>
<td></td>
</tr>
<tr>
<td>Fear of outcome</td>
<td>13</td>
<td>1 (7.7%)</td>
<td>12 (92.3%)</td>
<td></td>
</tr>
<tr>
<td>Cannot locate facility</td>
<td>10</td>
<td>5 (50%)</td>
<td>(50%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>202</td>
<td>56</td>
<td>146</td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES


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