Original Article

A Study on Knowledge and Screening for Cervical Cancer among Women in Mangalore City

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Abstract

Background: Most of the cervical cancer cases are diagnosed late leading to poor outcomes. Very few studies have explored the role of doctor and source of information for awareness of women about cervical cancer in India. **Aim:** Hence, this study was conducted with the objective of knowing the knowledge of women about cervical cancer, its screening, role of doctor, source of information, and reasons for not undergoing screening if the women had not undergone testing for cervical cancer. **Subjects and Methods:** This was a questionnaire based cross-sectional study conducted among the women attending the outpatient departments of teaching hospitals attached to Kasturba Medical College. A sample size of 83 was calculated. A semi-structured questionnaire was developed. After obtaining permission from Institutional Ethics Committee, the questionnaire was administered to the women in the language of their preference. Women were educated after the data collection and a hand-out was provided. Data was analyzed using SPSS Version 10. Student's independent 't' test was used to compare mean knowledge scores across sociodemographic groups. **Results:** Majority of the women have poor knowledge about cervical cancer (81.9% [68/83]) and it's screening (85.5% [71/83]). Only 6 out of 83 women had undergone screening. Though women had come into contact with doctors earlier, they were neither educated about cervical cancer nor were they told about the screening. Whatever little knowledge the women had was obtained from mass media. **Conclusions:** Majority of women had poor knowledge. Mass media could be used to educate the women. There is a need to conduct community based study to know the practices of doctors and assess if they are educating and offering suggestions for screening.

Keywords: Cervical cancer, Knowledge, Screening

Introduction

Cervical cancer is one of the most common cancers worldwide. In India, it is one the leading causes of mortality among women accounting for 23.3% of all cancer deaths.[1] India accounts for about 20% of cervical cancer cases reported from the world.[2] More than three-fourth of these patients are diagnosed in advanced stages leading to poor prospects of long term survival and cure.[2] Early detection of cervical cancer is possible with Pap smear tests. The proportion of women who undergo Pap smear testing ranges from 68% to 84% in developed countries as compared to India where the rates range from 2.6% to 6.9% among women in communities.[3-6] It has been found that in many developed countries the annual incidence and prevalence of cervical cancer has decreased by 50%-70% after introduction of population based screening.[2] So if women in India undergo screening for cervical cancer, it is possible to detect the cancer in early stages thereby reducing mortality and morbidity. Screening would be broadly influenced by:

- Knowledge about cervical cancer, its screening among women
- Role of health care providers who come in contact with women in hospitals and the sources of information
- Facilities available and the awareness of facilities.

Recently, studies have been reported from India on awareness of cervical cancer and its screening among women.[6-13] Studies exploring the knowledge of the women about cervical cancer have focused on either on "nursing staff" working in hospitals or on women in the rural community.[6-10] Three of these studies, which focused on "nursing staff" have reported good awareness cervical cancer and its screening though the proportion of who have ever undergone Pap smear ranges from 7% to 8%,

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respectively.[7-9] Two studies which were done on women in rural communities have also reported awareness of about 72% though only 2%-6.9% ever had a Pap smear test.[6,10] One study among women who attended the outpatient departments (OPDs) has reported low awareness (16%) though 10% had ever received Pap test.[11] Another study from India did not provide any information on knowledge or the proportion of women who have undergone Pap smear test.[12] A study carried out on college girls, which explored only the knowledge has reported low levels of awareness (20%).[13] None of the studies have explored the role of the health care providers who come in contact with women, sources on information in the context of early diagnosis.

Hence, this study was undertaken with the following objectives:
- To know the knowledge about cervical cancer among women attending OPDs of hospitals attached to Kasturba Medical College (KMC) Mangalore
- To know about the awareness of cervical cancer screening among these women and the facilities available for it
- To explore the sources of information and the role of health care providers who come in contact with women in hospitals.

It was planned that after the data collection, the women would be educated about cervical cancer, its screening methods and the facilities available for screening in the hospitals. A hand-out was also provided to these women in the local language of their preference.

Subjects and Methods

Background

Government Wenlock Hospital is attached to KMC, Mangalore. It is a tertiary care center which receives patients from not only Mangalore city, but also from other parts of Karnataka state and neighboring state of Kerala in South India.

Study design

This is a questionnaire based cross-sectional study.

Study setting

Outpatient departments of hospitals associated with KMC Mangalore. (This would include Government Wenlock Hospital, Attavar Private Hospital, Lady Goschen Hospital [Government Maternity Hospital] and outreach clinics of Department of Community Medicine, KMC, Mangalore).

Study time

The study was conducted in the months of May and June of 2012.

Study subjects

Women attending OPDs of hospitals associated with KMC, Mangalore. The inclusion criteria were:
- Women who are between 30 and 59 years of age (according to the guidelines)[2]
- Women who have given consent for participation in the study.

The exclusion criteria were:
- Women who were below 30 or above 59 years of age
- Women who did not give consent for participation in the study.

Sample size

One study which was conducted in hospitals among women who had come to seek to health care reported that 84% were not aware of cervical cancer.[11] This was used for sample size calculation as the study setting and population profiles matched with ours. Using the formula for infinite population $N = Z^2 pq/d^2$, for 95% confidence interval and a precision of 10% we got a sample size of 74. Accounting for 10% nonresponse the total sample size was 83.

Sampling

Nonrandom sampling. Sequential inclusion of the women who met the study criteria.

Study instrument

A questionnaire was devised collecting following components of information from the subjects:
- Basic sociodemographic profile like age, occupation income, etc.,
- Questions to assess knowledge about cervical cancer
- Question to assess the knowledge about cervical cancer screening
- Sources of knowledge and the role of doctor (like whether doctor educated about cervical cancer, its screening, suggested test for cervical cancer screening during a visit any time in the last 1 and 5 years)
- Problems in undergoing screening.

Scoring of questions

Knowledge about cervical cancer was assessed if the answer to first screen question (Have you heard of/do you know about cervical cancer?) was "yes." Two components of knowledge were assessed:
- Symptoms/manifestations of cervical cancer (multiple response question): Irregular menstrual bleeding, bleeding after sexual activity, weight loss, difficulty in passing urine, blood stained discharge from vagina
- Risk factors for cervical cancer (multiple response questions): Early start of sexual activity, multiple sexual partners, multiparity and infection with virus. Each response was given 1 mark. So, the maximum was nine and minimum was zero. The knowledge was graded as: <4 being poor knowledge; 5-6 being satisfactory knowledge and ≥7 being good knowledge.

About screening for cervical cancer: Knowledge about screening for cervical cancer was assessed if the answer to first screen question (Have you heard of/do you know that it

is possible to detect cervical cancer early?) was "yes." Four questions were asked:

- Who should get tested (married, unmarried, any female)
- At what age is it advisable to get tested (old women >60 years, young women 20-50, adolescent girls 12-19 years)
- Where do you think the testing is done (multiple responses permitted [government hospitals, maternity hospitals, private hospital, nursing homes, private hospitals with attached maternity hospital, women's hospital])
- A positive result means presence of cervical cancer (yes, no, don't know). Correct response for question 1, 2, 4, and each response for 3 carried 1 mark. So, the maximum was 9 and minimum was 0. The knowledge was graded as: <4 being poor knowledge; 5-6 being satisfactory knowledge and ≥7 being good knowledge.

Instrument development

The questionnaire was first scrutinized by a group of experts from Department of Community Medicine and Obstetrics. The questions were scored to help in grading the knowledge. This questionnaire was examined for a second time and modified by a group of experts.

The instrument was translated to local language [Kannada, Tulu] by Medical Social Workers and Linguistic Experts. This was back translated to English by some other linguistic expert who was not familiar with the original version. The back translated version were compared with original version to test for conceptual equivalence.

Pretesting

The study instrument was tried on some women who were attending OPD to check for feasibility and reliability. Changes were made to suit our circumstances.

Informed consent and ethical clearance

Study protocol was approved by Institutional Ethical Committee. The women were approached in OPD and invited to participate in the study. The nature and purpose of the study was explained and their consent sought. It was made clear that participation in study is voluntary. Questionnaire was handed over to the participants in the language of their preference. About 30 minutes time was allotted for the collection of data. The questionnaire was collected back and analyzed.

Service component

After the collection of data the women were informed about cervical cancer, the importance of its screening and facilities available for it. A hand-out which had illustrative pictures with explanations was provided in the language of their preference. Implications of positive and negative results were also explained.

Statistical analysis

The data was analyzed using SPSS version 15 (SPSS Inc., Chicago III, USA) and analyzed. Basic subject characteristics were expressed as proportions in appropriate tables. Student's independent 't' test was used to know if the differences in the mean knowledge scores across demographic categories like education, employment, age at marriage is statistically significant. P '< 0.05 was considered to be significant.

Results

Of the 83 women, majority (41% [34/83]) belonged to age group of 36-40 years. The demographic information of the participants is presented in Table 1. About 39.7% [33/83] had got married before the age of 18.

Table 1: Sociodemographic characteristics of the participants (*n*=83)

Demographic characteristics	*n* (%)
Age (years)	
30-35	6 (7.2)
36-40	34 (41)
41-45	17 (20.5)
46-50	15 (18.1)
51-55	9 (10.8)
56-60	2 (2.4)
Married	
Yes	77 (92.8)
No	6 (7.2)
Age at marriage (years)	
<16	10 (12.0)
17-18	23 (27.7)
19-20	10 (12.0)
21-24	13 (15.6)
25-26	9 (10.8)
>27	18 (21.7)
Have children	
Yes	77 (92.8)
No	6 (7.2)
Number of children	
0	6 (7.2)
1	11 (13.3)
2	39 (47.0)
3	21 (25.3)
4	6 (7.2)
Income grouping (rupees)	
<1000	22 (26.5)
1001-5000	12 (14.5)
5001-10,000	10 (12.0)
10001-15,000	2 (2.4)
>15,001	37 (44.6)
Occupation	
Professional	20 (24.1)
Business	4 (4.8)
Housewife	49 (59.0)
Others	10 (12.0)
Education	
No formal schooling	9 (10.8)
Secondary	17 (20.5)
Primary	23 (27.7)
College	34 (41.0)

Majority of the women had poor knowledge about cervical cancer and its screening. The results are presented in Table 2. Majority (81.9% [68/83]) of the women were not aware of facilities for screening. Lack of knowledge is reflected in poor understanding of symptoms [Table 3]. The source of information was mainly mass media [Table 3]. Majority of the women who had approached the doctors in the last 1 year (89.3% [66/74]) and in the last 5 years (80.7% [67/83]) were not told/educated about cervical cancer. For the same time, frames education about screening was provided to only about 6% [5/83] and 9.6% [8/83] women only.

Few 7.2% [6/83] women had undergone screening for cervical cancer. The reasons for not getting screened were as follows [n (%)]: Absence of disease symptoms [15 (18.1)], not suggested by health professional [14 (16.9)], lack of time [4 (4.8)], fear of having a bad result [3 (3.6)], fear of pain [1 (1.2)], financial reason [1 (1.2)], and embarrassment [1 (1.2)].

Employed women and women with college education had better knowledge about cervical cancer and its screening as compared to housewives and those with some schooling [(Tables 4 and 5]).

Table 2: Grading of knowledge about cervical cancer and its screening (*n*=83)

Grouping according to knowledge	*n* (%)
Cervical cancer	
Poor knowledge (<4)	68 (81.9)
Satisfactory (5-6)	10 (12.0)
Good (>7)	5 (6.0)
Knowledge about screening of cervical cancer	
Poor knowledge (<4)	71 (85.5)
Satisfactory (5-6)	11 (13.3)
Good (>7)	1 (1.2)

Table 3: Knowledge and source of information about cervical cancer and its screening (*n*=83)*

Knowledge and the source of information	*n* (%)
Knowledge about symptoms of cervical cancer*	
Irregular menstrual bleeding	22 (26.5)
Blood stained discharge from vagina	21 (25.3)
Weight loss	16 (19.3)
Difficulty in passing urine	12 (14.5)
Bleeding after sexual activity	8 (9.6)
Knowledge about risk factor for cervical cancer (*n*=19)*$	
Early start of sexual activity	19 (22.9)
Multiple sexual partners	13 (15.7)
Multiparity	9 (10.8)
Viral infection	4 (4.8)
Source of information about cervical cancer*	
Magazine	26 (31.3)
Television	14 (16.9)
Newspaper	14 (16.9)
Medical practitioner	13 (15.7)
Friends	6 (7.2)
Internet	5 (6.0)
Others	0 (0.0)
Who should get tested for cervical cancer (*n*=17)*$	
Only married women	17 (20.5)
Unmarried women	11 (13.3)
Any female	9 (10.8)
Appropriate age for getting tested (*n*=8)$	
Old women>50 years	8 (9.6)
Young women 20-50 years	6 (7.2)
Adolescent girls 12-19 years	3 (3.6)
Result of positive test means cervical cancer (*n*=9)$	
Yes	6 (7.2)
No	3 (3.6)
Source of information about screening of cervical cancer*	
Newspaper	12 (14.5)
Magazine	11 (13.3)
Television	10 (12.0)
Relatives	9 (10.8)
Medical practitioner	7 (8.4)
Friend	4 (4.8)
Internet	2 (2.4)
Others	0 (0.0)

*Multiple responses permitted, $Very few women answered the questions. The rest ticked "do not know" option

Discussion

Knowledge of cervical cancer

Majority of the women had poor knowledge about cervical cancer (81.9%) and it's screening (85.5%). Poor knowledge (84%) about cervical cancer and its screening has been reported from a study conducted on women who attended the hospitals.[11] However, good knowledge has been reported from three studies conducted on nurses.[7-9] Obviously, nurses being health care providers would have better knowledge.

Majority of the study population belong to upper income class (44.6%). Employed women had higher education. Educated women had higher knowledge than house wives [Table 4]. Community based studies from India have found that educated women had better knowledge.[6,10,12]

Pap smear test

Only 7.2% of the women had ever undergone Pap smear testing. Community based studies have reported that 2%-6.9% of women got tested.[6,10] Surprisingly, there was not much difference in proportions (7%-8%) among "nurses" working in tertiary care centers.[7-10] There is gap between awareness and practice. The reason for not getting screened was absence of disease symptoms (18.1%) i.e., women were asymptomatic and hence perceived themselves as healthy. This reason is common for most of the other studies from India.[6-11]

Role of health care provider and source of information

Though women has approached the doctors in the last 1- and 5-year time frames, very few women were educated about

Table 4: Knowledge on cervical cancer-cross-tabulation with demographic characteristics (*n*=68)

Demographic characteristics	Poor knowledge (<4) (*n* (%))	Satisfactory/good knowledge (>5) (*n* (%))*	Mean scores (SD)	Student's independent *t*-test (*P*)
Occupation				
Employed	24 (28.9)	10 (12.0)	1.65 (0.48)	2.279 (0.02)
Housewife	44 (53.0)	5 (6.0)	1.33 (0.49)	
Education				
Some schooling	48 (57.8)	1 (1.2)	1.29 (0.46)	−5.198 (<0.001)
College	20 (24.1)	14 (16.9)	1.93 (0.26)	
Age at marriage (years)				
<21	39 (47.0)	4 (4.8)	1.43 (0.5)	−2.189 (0.03)
>21	29 (34.9)	11 (13.3)	1.73 (0.45)	

*Because of small numbers the two categories were clubbed. SD: Standard deviation

Table 5: Knowledge on screening of cervical cancer-cross-tabulation with demographic characteristics (*n*=71)

Demographic characteristics	Poor knowledge (<4) (*n* (%))	Satisfactory/good knowledge (>5) (*n* (%))*	Mean scores (SD)	Student's independent *t*-test (*P*)
Occupation				
Employed	28 (33.7)	6 (7.2)	1.61 (0.49)	0.682 (0.49)
Housewife	43 (51.8)	6 (7.2)	1.50 (0.52)	
Education				
Some schooling	49 (59.0)	0 (0)	1.31 (0.46)	−5.107 (<0.001)
College	22 (26.5)	12 (14.5)	2.0 (0.1)	
Age at marriage (years)				
<21	39 (47.0)	4 (4.8)	1.45 (0.5)	−1.384 (0.17)
>21	32 (38.6)	8 (9.6)	1.67 (0.49)	

*Because of small numbers the two categories were clubbed. SD: Standard deviation

cervical cancer [10.7%, 18.6%] and its screening [6%, 9.3%)]. Doctors were the source of information (15.7%, 8.4%) [Table 3]. Second common reason (16.9%) for not being screened was "not suggested by a health professional." None of the previous studies have reported/explored this. Those few women who had knowledge got it from mass media [Table 3]. Mass media seems to be important source of information even in rural areas as reported by studies conducted in rural parts of India.[6,10] This also implies that perhaps doctors were not the common source of information when compared to mass media, which has been reported to be the source from studies conducted in different settings like "Rural communities" and "hospitals" [6-10] A particularly worrying finding that "only 12.5% and 10% of nurses would actually recommend the test to others" have been reported from Surat city of Gujarat and rural Rajasthan states, respectively.[7,9] Similar findings have been reported from Uganda.[14]

As majority of the women in our study had parity two or three they would have come in contact with health services. So the contact would have provided opportunity for health care providers to educate their patients. This indicates that health care providers who did not educate their patients deprived them of the benefit of contact in terms of early diagnosis of cervical cancer. The results have two important implications: (1) The importance of using mass media for educating the public. (2) The need to study the practices of the doctors.

Limitations

As it is a questionnaire based study there could be response bias. Due to feasibility reasons this study could not be conducted in the community and was restricted to few women attending the OPDs. It is possible that some women were educated and advised about cervical cancer and its screening, but there might have been recall bias. As these women came from different parts of our state and Kerala state, we could not assess the knowledge of the doctors whom these women consulted.

Conclusion

Most of the women had poor knowledge and had not undergone screening for cervical cancer. As mass media was the common source of information, they could be used to raise the awareness of the women to promote early detection. There is a need for community-based study to know the practices of doctors and assess: (1) If they are educating the women about cervical cancer and its screening. (2) Whether they actually offered screening services to the eligible women who consulted them for any other health problem.

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