Factors Influencing uptake of Cervical Cancer Screening among Women in India: A Hospital based Pilot Study

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Abstract

Background: In an effort to decrease the toll of cervical cancer, by its knowledge, prevention and treatment services in the community, we provided a nuanced consideration of the sociological and anthropological insight into the women's knowledge and its association with that of socioeconomic-demographic profile in the course of understanding cervical symptomatology, screening and cancer.

Methods: Study through an in-depth questionnaire was conducted at JA Groups of Hospital's Obstetrics and Gynecology OPD, Gwalior, India on a total of 812 women with a modal average age of 35.51 ± 10.64 years, from June-August 2010.

Results: We found a large amount of lack in awareness and perception in Indian women. Surprisingly all women presented were married. Only 9.59% of women had ever heard of cervical cancer, mostly belonging to upper socioeconomic group with only 11.62% underwent at least one cervical screening in their life time. None of them reported exact purpose of the Pap test. Male partner were the sole decision maker of the family in 47.20% women. 73.65% of the respondents were using clothes instead of tampons or sanitary pads during menstruation.

Discussion: This study revealed the limited knowledge of Indian women about the susceptibility of cervical cancer, and the necessity of cervical cancer screening among the women. Inadequate public health education, lack of patient-friendly health services, socio-cultural health beliefs, and personal difficulties were the most salient barriers to screening.

Keywords: Cervical cancer awareness; Socio-economic status; Sexually transmitted diseases; Health facilities in India

Introduction

Cervical cancer is the second most common cancer in the women worldwide and the leading cause of cancer deaths among women in developing countries [1]. The burden of cervical cancer in India is enormous accounting for about 20% of all cancer related deaths in women and is the number one cause of death in the middle age Indian women [2]. It is paradoxical that so many deaths are occurring whilst being a preventable disease. Organized population based screening linked to treatment of the detected neoplasias can lead to more than 70 per cent reduction of disease related mortality [3]. Where screening quality and coverage have been high, invasive cervical cancer has been reduced by as much as 90 percent. This indicates the usefulness of screening in the population, but with major barriers towards lower screening coverage [4]. There are no effective, organized population-based high-level opportunistic screening programs for cervical cancer in any of the states in India contemporary to developed nations [2,5-7], due to which routine screening of asymptomatic women have been almost non-existent [8]. For a screening program to be successful, a good attending rate of women undertaking the test is must in context to which complete thorough exploration of their socio-economic-demographic profile is a preliminary requirement [9]. Several factors influencing cervical cancer screening have been reported which includes lack of awareness, inadequate access to healthcare facility with poor infrastructure in addition to unawareness among the doctors at rural areas regarding importance of early diagnosis and treatment, existence of alternative medicinal systems and quacks [10], deficient economic and moral support from husband and family [11-12] and an inappropriate demand for providing cervical cancer screening from the potential beneficiaries could be enumerated as the chief causes [8].

There are no such studies existing indulging with cervical cancer screening and its dynamic relations with various stated factors from Gwalior (Madhya Pradesh, Central India) where the crude incidence rate of cervical cancer is 3.12% [13]. Therefore a study with qualitative and quantitative components was undertaken using face-to-face in depth interviews to investigate cervical cancer screeners and to explore various factors influencing screening uptake of these women emphasizing and comparing majorly with their socio-demographic profile and a call for improvement.

Method

Study place

Discussions with subjects were undertaken in Obstetrics and Gynecology OPD of Jayarogya Hospital (JAH). JAH is a teaching hospital for G.R. Medical College, Gwalior, one among the six medical college hospitals in Madhya Pradesh.

Study participants

A total of 812 women participated the questionnaire carried out for the guided women for Pap test when attending the Obstetrics and Gynecological OPD at JAH, Gwalior held from June-August, 2010. Age of participants ranges from 18-85 years. Verbal Informed consents were sought from the participants prior to their interview and no one declined participation. Ethical clearance was sought from the Institutional Ethical Committee (IEC) prior to advent of the study.

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Study instruments

A questionnaire was carried out by the authors to determine women's socio-demographic and fertility profile and their knowledge regarding the Pap test. Instrument contained questions regarding socio-demographic factors, their prior history of Pap smear, knowledge about cervical cancer, cultural beliefs, male behavior and family supportiveness towards women health issues.

Process

Before the advent of discussions, participants were made aware about the purpose of the meeting, confidentiality of their personal information and consent regarding discussion and to note down them. All discussions were in the local language Hindi and then translated into English while formulating manuscript. It contained an introduction, purpose of the meeting, rules during the discussions i.e. confidentiality, encouragement of open all-inclusive discussions and nondisclosure of their personal information. Discussion usually lasts for 10-15 minutes and the hand notes were prepared from them. One author conducted the discussion and another acted as an observer and took hand notes.

Questionnaire was asked to the women by the authors (both males) in a separate room restricting interference from the others (also family members) except within the presence of few medical personals (females). Open ended questions were asked on different aspects of their personal and cultural life with a common set and style to avoid any interference in the data. Personal particulars which include name, belonging (husband/father), age, parity, occupation, residential address, chief complaints for appearing were asked directly. Information on earning was asked as "Who is the source of earning for the family? From where you and your family get money? How many members are there in your family, and how much money you actually get out of that?" Age at marriage was deduced by asking indirectly "How many years have passed while you married". This is subtracted from the age of the women. History of contraceptive use is directly asked as "Are you using any method for garbh-nirodh (contraception)? What is that? They were also simultaneously counseled towards benefits and harms of various stated factors.

Statistical analyses

Quantitative data was coded and analyzed using SPSS for frequency distribution, chi square testing and odds ratio. A frame work analysis of various stated factors.

Knowledge on cervical cancer

Participants were asked, had they ever heard of cervical cancer, human papilloma virus (HPV), whether cigarette smoking could cause cervical cancer? How they could catch the disease, from whom they got the knowledge regarding disease, where to first contact regarding treatment. Majority of the women had never heard of cervical cancer and not even a single respondent of HPV and cigarette smoking could lead to cervical cancer. Only 9.59% of the women had ever heard cancer as a cancer of "mouth of uterus". Majority of them, 51.20%, described having no idea that unhygienicity can cause the disease. Mother in law was the main source of knowledge for majority of women who had ever heard of the disease. "My mother in law told me that if u not maintains hygiene during menstrual period, you could get the disease". Unawareness about the cervical cancer could partly be due to poor communicating health service providers. Most of the women, 44.80% seek public health services (PHC/CHC level) or hakim and vaidh

<table>
<thead>
<tr>
<th>Characteristic(s)</th>
<th>Distribution Within Sample, n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>Mean ± SD</td>
<td>35.51 ± 10.64</td>
</tr>
<tr>
<td>Median (range)</td>
<td>35(15-85)</td>
</tr>
<tr>
<td>Age at marriage (years)</td>
<td>Mean ± SD 16.89 ± 4.29</td>
</tr>
<tr>
<td>Parity</td>
<td></td>
</tr>
<tr>
<td>0-3</td>
<td>585(45.19%)</td>
</tr>
<tr>
<td>≥ 4</td>
<td>228(28.07%)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>No schooling</td>
<td>369(45.19%)</td>
</tr>
<tr>
<td>Primary school</td>
<td>80(9.85%)</td>
</tr>
<tr>
<td>High school</td>
<td>215(26.47%)</td>
</tr>
<tr>
<td>&gt; High school</td>
<td>148(18.22%)</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
</tr>
<tr>
<td>Professional and semi-professional</td>
<td>30(3.69%)</td>
</tr>
<tr>
<td>Clerical and shop owner</td>
<td>12(1.47%)</td>
</tr>
<tr>
<td>Skilled worker</td>
<td>15(1.84%)</td>
</tr>
<tr>
<td>Semiskilled worker</td>
<td>150(18.47%)</td>
</tr>
<tr>
<td>Unskilled worker</td>
<td>597(73.52%)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>8(0.98%)</td>
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<tr>
<td>Socio -economic status</td>
<td></td>
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<tr>
<td>Low and low upper</td>
<td>606(74.63%)</td>
</tr>
<tr>
<td>Middle and upper middle</td>
<td>200(24.63%)</td>
</tr>
<tr>
<td>Upper</td>
<td>6(0.73%)</td>
</tr>
<tr>
<td>H/o tobacco exposure</td>
<td>101(12.43%)</td>
</tr>
<tr>
<td>H/o ever-use of oral contraception</td>
<td>516(62.88%)</td>
</tr>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>$ ≤ 979</td>
<td>121(47.7%)</td>
</tr>
<tr>
<td>$ 980-2935</td>
<td>270(33.25%)</td>
</tr>
<tr>
<td>$ 2936-4893</td>
<td>261(32.14%)</td>
</tr>
<tr>
<td>$ 4894-7322</td>
<td>117(14.40%)</td>
</tr>
<tr>
<td>$ ≥ 7323</td>
<td>152(18.71%)</td>
</tr>
</tbody>
</table>

Table 1: Socio demographic profile of study participants.
Variables Distribution Within Sample, n Received Pap Odds Ratio CI 95% P Value
---
Age
> 45 114 18(15.76)  1.0
≤ 45 698 104(14.89) 1.07 0.59-1.90 0.77
Literacy
Illiterate 377 60(15.78) 1.13 0.76-1.70 0.55
Literate 435 62(14.25)
Occupation
House wife 315 51(16.19) 1.15 0.76-1.74 0.48
Working 497 71(14.28)
Parity
Parous 735 116(15.78) 2.21 0.94-5.22 0.06
Nulliparous 77 6(7.79)
Socio-economic
L-LM 612 99(16.17) 1.48 0.89-2.48 0.11
UM-U 200 23(11.50)
Resident
Urban 367 62(16.89) 1.30 0.87-1.95 0.20
Rural 445 60(13.48)
Religion
Hindu 741 115(15.51) 1.68 0.71-4.11 0.22
Non Hindu 71 7(9.85)

Table 2: Socio-demographic variables Associated with Receipt of Pap Smear.

Variables Distribution Within Sample, n Received Pap Odds Ratio CI 95% P Value
---
Age (years)
≤ 20 9 16 1(11.11)  1
21-30 138 164 21(15.21) 0.69 0.03-6.04 0.53
31-40 180 111 25(13.88) 0.77 0.03-6.60 0.34
41-50 82 51 6(11.32) 1.26 0.47-3.53 0.26
> 50 36 25 9(25) 1.58 0.06-16.97 0.32
Education
No schooling 267 110 37(13.85) 1 0.01-5.22 0.01
Primary school 53 31 6(11.32) 1.48 0.66-3.37 0.24
High school 79 131 13(16.45) 0.30 0.01-1.20 0.08
> High school 46 95 6(13.04) 1.07 0.39-3.03 0.05
Religion
Hindu 415 326 61(14.69) 1 0.87-2.80 0.15
Non Hindu 30 41 1(3.33) 4.99 0.70-100.44 0.10
Parity
Nulliparous 33 44 2(6.06) 1 0.42-33.42 0.17
Parous 412 323 60(14.56) 0.37 0.06-1.68 0.61
Socio-economic
Upper 0 7 0 2(28.57) 0.55 0.09-4.28 0.61
Middle- upper middle 86 107 9(10.46) 1.48 0.66-3.37 0.38
Low-low upper 359 253 53(14.76) 1 0.34 0.08-1.20 0.08
Income
≤ 979 7 5 1(14.28) 1 0.55 0.09-4.28 0.61
980-2935 143 127 23(16.08) 0.87 0.03-7.95 2.7 0.29-21.62 0.07
2936-4893 156 105 17(10.89) 1.36 0.05-12.80 1.75 0.85-3.68 0.11
4894-7322 58 59 10(17.24) 0.80 0.03-8.30 3.26 0.32-29.45 0.23
≥ 7323 81 71 11(13.58) 1.06 0.04-10.71 5.25 0.51-49.29 0.12

*All the data in parentheses are in percent

Table 3: Variable distribution among urban and rural population.
Women knowledge on Pap test

Participants were asked, had they ever heard of pap test, from whom they got the knowledge regarding the test, purpose of pap test, their previous pap test result, had they undergone test prior to their marriage. 15.02% of the participants who received Pap test prior to this visit reported it as “kaanch ki patti wali test (glass slide test)”. 15.02% of the participants who once undergone the test knows about the test from health care providers. 28% and 24% of the participants responded, why they needed Pap test. Out of 15.02% participants who previously received Pap test, 9.97% reported ‘gaath’ (tumor) in their report and rest of them don’t know the reason for the test. No of times Pap test received previously and time of last Pap test received were the other parameters that were investigated.

Cultural construct about cervical cancer

Some respondents perceived the illness as a “traditional” disease. On describing symptoms like excessive vaginal bleeding many explained it as a normal phenomenon of menstruation with some bleeding excessive and some less. On inquiring for late reporting to health care providers, 28% and 24% of the participants responded, “due to custom and cultural boundaries we are not allowed to go outside alone without any male members of the family and it is very embarrassing if to get examined of the private part by the male doctor”. Some respondents were using clothes instead of tampons or sanitary pads during menstruation.

Health services factors

There was a great concern regarding the wastage of time, “Waiting time is too long in the hospital which spoils whole day for getting one’s turn”. “It is very problematic to reach the consultancy room to seek physician and fee counter to pay for the consultancy and testing. We don’t know where to go in such a big OPD and a lot of time goes in searching the exact place”. Negative perception is there towards healthcare providers and health facilities. “Health care provider behaves rudely. If I am having money they give better response and time to you otherwise not. We always have doubt especially in cleanliness of the materials used in the process”.

Discussion

Our study revealed a greater rise towards a particular class of women among each specific components of socio-economic-demographic profile viz married, parous, low socioeconomic group, less educated, early marriage, and residing in urban setting involving the screening facility users. Social factors of cost incurred, educational background, and cultural issues of modesty and embarrassment contributed deeply to the screening attendance [14].

Knowledge was low among the participants regarding cervical cancer and Pap smear screening. There are no awareness campaigns and programs regarding disease prevention similar to effective enthusiastic campaigns against the HIV/AIDS, malaria and tuberculosis. Older ladies and family are still being the major reservoir of the health knowledge in Indian society.

Women from higher socioeconomic class, higher educated and with high family income were very low during the questionnaire. As the study depicts, women were not satisfied with the health services regarding to time consumed up to consultancy, material used and their cleanliness in government hospitals, as also raised in other studies [15]. One of the main predictor of satisfaction with the service were the behavior of the staff and the facilities at the centre [11,16-19] which being unsupportive may even deter these women from attending public health facilities demanding approach to private health facilities where 80% of the India’s annual cervical smear is done [5].

Utilization of screening services was found directly proportional to parity of the women [20,21] indicating that previous contacts with reproductive health services in their earlier parity (in the form of gynecological checkups) may increase awareness among women to be more responsive towards health workers and facilities and getting

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Table 4: Independent t test for ever received Pap test among Rural and Urban groups.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Differences</th>
<th>t(160)</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Years)</td>
<td>Rural</td>
<td>36.97</td>
<td>10.74 1.47</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>33.82</td>
<td>10.38 1.40</td>
</tr>
<tr>
<td>Age at marriage (Years)</td>
<td>Rural</td>
<td>16.08</td>
<td>4.08 0.56</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>17.66</td>
<td>4.34 0.58</td>
</tr>
<tr>
<td>Parity</td>
<td>Rural</td>
<td>3.28</td>
<td>1.60 0.21</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>2.68</td>
<td>1.87 0.25</td>
</tr>
<tr>
<td>No of times Pap received previously</td>
<td>Rural</td>
<td>1.71</td>
<td>1.13 0.15</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>1.31</td>
<td>0.62 0.08</td>
</tr>
<tr>
<td>Time of last Pap received</td>
<td>Rural</td>
<td>12.79</td>
<td>15.72 2.15</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>19.10</td>
<td>22.63 3.05</td>
</tr>
</tbody>
</table>

(Greek and Ayurvedic medicine practioners) and 23.2% reported self or no treatment prior to the visit to this center. “Usually the health workers don’t tell us from what we are suffering and we cannot read and understand the prescription due to illegible handwriting and English language”. Economic factors and male partner influences

Male partner were sole decision maker of the family in 47.20% women as compared to 27.20% of cases where both partners were involved. Male is the sole financial controller in the family. “Our partners are the ones who have control over the family pocket. Asking money from them is very troublesome. Having illness of private part let him thinks that I cheated him” Money is an imperative factor influencing the health seeking behavior, “Hospital is very far from my home so it takes a very long time and cost a lot for it and undergoing different tests. Meeting daily needs are more crucial, preventive care and detecting cervical cancer is not the priority”. 73.65% of the respondents were using clothes instead of tampons or sanitary pads during menstruation.
screened opportunistically [12]. Strikingly all the participants were married which is consistent with the findings from others in India and other low resource settings [12,17,21-23]. It is explainable with the fact that unmarried women may not be feeling themselves to be at the right stage for reproductive health facilities [18] or relatively raised need for frequent obstetrics and gynecology care and increased recommended tests for reproductive symptoms only for married had overshadowed the data [12,24]. Also, associated stigma due to the prevailing cultural disbelief especially in rural India as these tests are meant for sexually active women forces them to retreat screening [12,23,25].

India is still a patriarchal society where males are the sole decision maker in the external, economic and social affairs of the family significantly in rural areas. Here females are not freely allowed to go outside alone without male members, thus being as gate keepers for women to access health services [11,19]. Study from India suggest, despite the social stigma attached to the screening for unmarried women they approached to the screening centers, by encouraging males to promote female participation through community leaders, irrespective of their marital status [12]. Thus an effective program needs to target both genders. Women with less education were found more likely to be screened, a finding that is inconsistent with the previous studies [12,20]. Previous studies on relation between socioeconomic factors and use of health services had shown educational influences on screening behavior through its effect on income [26-27].

Education and socioeconomic status decides the living standard of a person and chances of getting the disease through use of cloths rather than sanitary napkins which may prone them for genital infections [28,29]. Women who ever had an STI requires a gynecological examination so a smear may have been taken as part of the consultation regarding STI [21,30]. Although rural women were less educated, underserved but financially stronger, frequency of getting ever screened was higher among urban women as compared to rural [31-33]. This strengthens the hypothesis which advocates being farther away from hospital may decline access to the health facilities, proved in other studies too [31-36], since some level of opportunistic cytology screening are mainly available in tertiary care centers of urban areas [5] leading to accessibility being easier for urban women despite of low family income [8]. This nearness may be a major predictor diluting the disparity of income between urban and rural being [21] as travelling to hospital kills a lot of time and wages in our and previous studies [24].

Study reveals that early marriage was associated with higher frequency of being screened with majority (58.99%) of the women married earlier than 18 years the legal age of marriage in India. Early marriage prone to have early first coitus [37] and have young age of first pregnancy leading to have more years to become pregnant and for multiple times [27] which may lead to frequent visit of this women to reproductive health facilities and greater chance to get screened for cervical cancer in an opportunistic setting [23].

Cultural beliefs and custom barriers faced by women let her shy to discuss their problems and getting examined by the male doctors which could have lead to decreased ever received of pap in women especially muslims [17,18]. Training of village health nurses could be done, as being trained nurses are able to identify a cervical abnormality and to take an adequate pap smear [38] to overcome the cultural barrier of being get screened by males [19] as patient feels better to get screened by female [17,18,39].

Economic constraints prioritizes women towards financial and social responsibilities and self neglect [15,10] towards their health issues by curtailing their expenses in the form of time and money in visiting far to the screening health facilities [40] mainly available in tertiary care centers [8]. As the most untouched population is being rural and availability of facility in their society would increase the compliance to get screened [18,39,41]. Self remedies and self medication, influence of local Gods [42], disbelief in healing power of modern medicine and influence of medical quacks on the socio-cultural aspects of the society [18] and their life poses a drastic ill effect in the course of cancer diagnosis and treatment. Sacrificing attitude of the Indian women are their hall mark worth of the image in the world but render them susceptible to malnutrition, infection and thus can lead to cervical cancer.

Thus our study contributed towards the much needed lag in the knowledge of cervical cancer, its screening with the socio-demographic profile of the women participated and their belief towards the disease and the health care system which had been deficient in our literature specially from developing countries. Thus, this pilot study can be instrumental for a larger future studies to be undertaken to target much implementative and cost effective measures to make a change in their beliefs and knowledge.

Limitations

As this is a single hospital based study, with its some part memory based, so a recall biased could be anticipated.

References
