

Cervical Cancer Screening among the Rural Indians: A Community Based Prospective Study

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Abstract

Introduction: Community based awareness can improve the knowledge on cervical cancer (CC). With this a community level study was conducted to find the incidence of CC and to create awareness among the public.

Methods: This was a community based research, conducted in the department of Surgical Gastroenterology, GSL Medical College. Informed written consent was taken from all the participants. In case of minors, consent was taken from parents. Non cooperative individuals were not considered in this research but efforts were taken to create awareness on CC. The study participants were divided to 2 groups; unmarried, 9 – 26 years aged women were in first group and married women in second group. With the support of primary health workers and also undergraduate (UG) students door to door survey was conducted to create the awareness. With the help of trained UGs, cervical examination was carried and also cytological examination was done by collecting specimen as per the guidelines. If any abnormality in the screening, HPV DNA analysis was carried. Chi-square test was used to find the association; $P > 0.05$ was considered to be statistically significant.

Results: Total 52 (100%) were CC in the initial screening and 25 were positive for HPV DNA; statistically there was no significant difference. Literacy wise statistically there was significant. Majority (21; 40.4%) were high grade squamous intra epithelial lesions followed by atypical squamous cells of undetermined significance (16; 30.8%) and low grade squamous intra epithelial lesions (15; 28.8%). All were referred for the treatment.

Conclusions: These findings suggest that community-based education and screening campaigns are required. In addition, motivation and counselling are the priorities which are the important parameters required to create awareness among the public. This can help in better screening, diagnosis as well as treatment and finally reduction in CC.

Keywords: Cancer, Study, Research.

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Introduction

Globally, out of 4.1 million female cancer deaths per year, around 311,000 are due to the cervical cancer (CC). [1] In low and

middle income countries, CC is the common cancer, major health problem among the Indian women. [2]

Approximately 120000 new cases occur each year in Indian subcontinent. Indians account for 15.2% of the total CC deaths, worlds wide. [3] As per a report, the incidence of CC is 1 in 53 women in India compared to 1 in 100 women in developed countries. [4]

Improved living standards, regular exposure to print as well as electronic media and frequent cervical examination by all the sexually active women may reduce CC incidence. [5] In the urban areas, social media, literacy, awareness of genital hygiene, hospital visit at preclinical stage are the significant contributory factors of this reduction. Moreover, human papilloma virus (HPV) vaccination is another contributory factors because HPV is the leading cause of CC among the sexually active women. [6] As primary preventive measure, World Health Organization recommended HPV vaccination during 9 – 14 years prepubertal girls up to 26 years of age prior to sexual life. [7]

Inspite of sincere efforts by the government, <20% of women are vaccinated against HPV. 1 It was mentioned in a report that 27.5% of Indian women had screened against CC and community based awareness can improve the knowledge. [8] with this a community level study was conducted to find the incidence of CC and to create awareness among the public.

Methods

This was a community based research, conducted in the department of Surgical Gastroenterology, GSL Medical College. Study protocol was approved by the Institutional Ethics committee. Research was carried from March 2021 to January 2023. Informed written consent was taken from all the participants. In case of minors, consent was taken from parents. Non cooperative individuals were not considered in this research but efforts were taken to create awareness on CC.

The study participants were divided in to two groups; unmarried, 9 – 26 years aged women were in first group and married women in second group. Nearly 16 villages and city are located very close to this organization, around 4000 undergraduate students are getting admission in each academic year. First the study members were thoroughly explained about the impact of CC and all the doubts were cleared beyond the knowledge.

With the support of primary health workers and also undergraduate (UG) students door to door survey was conducted to create the awareness on CC. As per the curriculum different colour charts are prepared for UGS and those were used to create awareness. With the help of trained UGs, cervical examination was carried and also cytological examination was done by collecting specimen as per the guidelines. [9, 10] If any abnormality in the screening, HPV DNA analysis was carried. For DNA analysis, specimen collection, extraction of nucleic acid and PCR were carried as per the manufacture guidelines; Huwel kits were used for extraction as well as PCR. In addition, screening for the family members of those found to be positive was also carried.

Statistical analysis: Data were analysed using SPP version 22. Chi-square test was used to find the association between age, religion, education, occupation, parity and marital status with CC screening; $P > 0.05$ was considered to be statistically significant.

Results

So far 2302 members were recruited and created awareness on CC. Due to several reasons, 273 were not considered, data was analysed with 2029 (100%) members. Total 52 (100%) were found to be positive in the initial screening and 25 (48%) were positive for HPV DNA; statistically there was no significant difference.

Out of the 25 confirmed CC participants, 9

and 16 were positive respectively in the groups; statistically there was significant

difference (Table 1).

Table 1: Group wise CC cases in the study participants

Group	Positive	Negative	Total
1	9	1143	1152
2	16	861	877
Total	25	2004	2029
Statistical analysis	Chi square = 4.4452; P = 0.0348; statistically significant.		

Literacy wise, 83% (1684) were literates and most (1197; 59%) of them studied class 10 or above. Statistically there was significant difference between literacy and CC (Table 2).

Table 2: Group wise CC cases in the study participants.

Literacy	Positive	Negative	Total
Literates	11	1673	1684
Illiterates	14	331	345
Total	25	2004	2029
Statistical analysis	Chi square = 27.2759; P = 0.00001; statistically significant.		

Out of 52 initial CC, majority (21; 40.4%) were high grade squamous intra epithelial lesions followed by atypical squamous cells of undetermined significance (16; 30.8%) and low grade squamous intra epithelial lesions (15; 28.8%). All were referred for the treatment.

Discussion

Immediate availability of the results is the major asset with the visual examination (VE), screening test. [11] Though VE specificity was limited in the diagnosis of CC but highly sensitive. [12] Whereas pap smear is reported to be highly specific. In this study, around 48% were only conformed to be CC; statistically there was no significant difference between screening and confirmatory tests.

The incidence of CC has declined in the urban population compared to the rural areas. [13] Limited facilities, literacy, social stigma were the major limitations we faced during the research. The interesting finding is that majority women are aware of the term CC and regularly find this. But none of them turned either for screening or diagnosis because of social stigma as well as financial issues. In addition to this motivating the participants

for the screening is another issue. Even in the earlier Indian studies on CC also reported that motivation of women for this was not possible in Camps. [14] In this research we could overcome this by continuous as well as repeated visits. In another north Indian report, just 32% were only accepted for CC screening who visited to the camp.

HPV is the common causative agent of CC, transmitted through sexual route. [15] So youngsters and unmarried were included in group 1 by assuming that this group don't have sexual exposure. More number of CC cancer were detected in group 2; statistically there was significant difference (Table 1). This research was conducted on rural people. Hence we could not get the sexual history which include number of sexual partners and so on. But multiple sexual partners was reported to be the leading cause for HPV infection as well as CC. [16] Age, marital status, financial statuses, awareness on infection are also reported to be the influencing factors of CC. Ref In this study also there was statistically significant difference was observed. [17]

Out of 52 initial CC, majority (21; 40.4%) were high grade squamous intra epithelial

lesions followed by atypical squamous cells of undetermined significance (16; 30.8%) and low grade squamous intra epithelial lesions (15; 28.8%). All were referred for the treatment. In the literature also, squamous intra epithelial lesions were reported to be the leading.

Conclusions

Very few women were screened for CC, and few have adequate knowledge. These findings suggest that community-based education and screening campaigns are required. In addition, motivation and counselling are the priorities which are the important parameters required to create awareness among the public. This can help in better screening, diagnosis as well as treatment and finally reduction in CC.

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