

Mobilising Women from a Low Income Community to Attend Cervical Cancer Screening Camps: Insights from a Study in an Urban Slum of Mumbai

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Abstract

Background: To increase the cervical cancer screening rate, various strategies are being conducted in the communities. The present study uses mixed interventional approach aiming to create awareness among couples about cervical cancer and Pap smear and to increase the rate of Pap smear screening.

Methods: The study was carried out in collaboration with Municipal Corporation of Greater Mumbai (MCGM). The Dr Babasaheb Ambedkar Maternity Home under MCGM situated in Vikhroli, Mumbai was selected for the study. The study followed a quasi-experimental design. Women aged between 18 to 49 years and their husbands were randomly selected for the survey. Pre and post intervention survey was conducted to see the impact of intervention on creating awareness and utilization of Pap smear services. Multilevel intervention program was adopted to achieve the objectives.

Results: Significant increase in awareness about cervical cancer among couples was observed from pre (5.5%) to post (97.7%) intervention survey. About 32.2% women were found to be infected with HPV.

Conclusion: Mixed interventional approach is a good strategy for early diagnosis of cervical cancer.

Keywords: Pap smear camp; HPV infection; Couple intervention

Introduction

Cervical cancer is the third leading cause of death among women worldwide [1]. The International Agency for Research on Cancer (IARC) estimated around 1,34,400 new cases and 72,825 deaths due to cervical cancer in India [2]. Human Papilloma Virus (HPV) infection, generally sexually transmitted virus if left untreated, can lead to cervical cancer [3,4]. It is also reported that all sexually active women are infected with HPV at least once during their lifetime [5]. The highest prevalence of HPV infection is found soon after the onset of sexual activities [6]. Other cofactors that increase the risk of developing cervical cancer are multiple sexual partners, long use of oral contraceptives, high parity, and tobacco smoking [7-9]. Early diagnosis of presence of HPV infection, treatment and monitoring could prevent progression to cervical cancer [10].

The reasons stated by women for not undergoing screening test for cervical cancer was embarrassment, fear of pain, procedure and instrument, anxiety of getting negative results, lack of awareness about cervical cancer and screening program, support, time and cost, sex of health provider and distance to cervical care screening services and husband's positive emotional support towards screening program [7,10-17].

To remove these barriers, various intervention strategies were carried out such as community education program, group education, organizing camps at rural health facility, and distributing printed materials such as pamphlets, and brochures [18-21]. Further, the intervention strategies should be integrated into the existing health services, so that linkage between detection and treatment should be easily available [22]. The primary health centers and the district hospitals are the ideal places to set up the screening facilities for high coverage of rural population [23]. Therefore, the present study used the mixed interventional approach such as group education, person to person education, street play, pamphlets distribution to the targeted husbands and wives, men and women in collaboration with a government Maternity Home. The objective was to create awareness about cervical cancer and Pap smear to increase the rate of Pap smear screening programme. The objective of the paper is to present the pre-

post intervention effect on awareness, utilization of Pap smear camps and the findings of the Pap smear test.

Materials and Methods

The study was carried out in collaboration with Municipal Corporation of Greater Mumbai (MCGM). The Dr Babasaheb Ambedkar Maternity Home under MCGM situated in Vikhroli, Mumbai was selected for the study. The study followed a quasi-experimental design. Women aged between 18 to 49 years and their husbands were randomly selected (using computer generated random numbers) for the survey. Pre-intervention survey was conducted during 2010 among 1020 couples to know the awareness about cervical cancer and Pap smear test. After 24 months duration of intervention program, the post-intervention survey was conducted among 1013 couples to see the impact of intervention on creating awareness and utilization of Pap smear services.

Intervention

To enhance the knowledge and promote health seeking behavior of couples on cervical cancer, the intervention strategies included creating awareness at community level and providing reproductive health services including Pap smear screening at facility level i.e. maternity home. For the duration of 24 months intervention programme, at the community level, information on cervical cancer, Pap smears and

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presence of Pap smear services were provided by the trained project staff through Inter-Personal Communication (IPC), smaller group meetings, and educational programmes in regular interval. Local community leaders, community health volunteers, anganwadi teachers and mahila mandals were also involved to impart the information in the community. Pamphlets on cervical cancer and Pap smear screening camp (day, time, and place) were also distributed after every meeting in the community and at facility level. These meetings and programmes were conducted regularly across the community. Additionally, 8 street plays on cervical cancer called-Savdhan were played on holidays in the community. The street plays were well attended by both men and women in the community. The content of the play was to demonstrate the risk factors, symptoms and preventive measures of cervical cancer. At facility level, the Pap smear/cervical cytology facilities were established in the existing pathology laboratory of the maternity home. Regular orientation programme was organized for medical and par-medical staff, Community Health Volunteers (CHVs), doctors, technicians and support staff of Maternity Home. The PHN/ANM was trained for collection of Pap smears under the supervision of gynaecologist. The laboratory technicians were trained for processing the Pap smears. Pathologists at Rajawadi Hospital, Mumbai under MCGM were trained in the cytology. Orientation programme was also provided to the local general private medical personnel who were practicing in the community so that they could refer/guide the symptomatic patients to the maternity home. Referral services for the confirmation (by colposcopy or biopsy method) and management of pre-cancer and cancer cases were linked to the MCGM hospitals.

Pap smear camps were organized once in a month at the maternity home and total of 24 camps were organized during April 2011 to March 2013. Cervical smears were collected from cervix by a gynaecologist/ANM/PHN using a wooden spatula. Pap smears processing or slides were prepared by the technician and reporting of Pap smear finding was done by the pathologists from Rajawadi Hospital under the technical guidance of cytologist from National Institute for Research in Reproductive Health (NIRRH). Cytological findings were classified according to 2001 Bethesda classification system [24].

Statistical analysis

The significant impact of pre and post intervention was carried out using Chi-square test. Descriptive analysis was done for the cytological finding of Pap smear test. Cross tabulation was done to see the prevalence of HPV infection by selected background characteristics of women who attended the Pap smear camps and Chi-square tests were performed to assess statistical significance of any differences in proportions.

Ethical approval

The project was approved by the National Institute for Research in Reproductive Health Institutional Ethics Committee, Mumbai, India.

Results

Survey findings

A total of 1020 couples were interviewed during baseline survey. It was found that 35.3% women were below 30 years of age and 9% women were working. About 15% women and 5% men were illiterate. Only 5.5% couples were aware of cervical cancer in the community. Significantly higher proportions of women (27%) were aware of cervical cancer as compared to men (7.6%). Women also reported that they were suffering with white discharge (5.9%), and pain in lower abdomen (2.8%). Post intervention survey showed that 97.7% couples were aware of cervical cancer.

A total of 758 women had undergone Pap smear test during 24 months of intervention programme. Majority of women who attended the camp were in the age group 18-49 years and 7.1% women were aged 50 years and above. Majority of them were educated (81.5%), Hindu (62.9%) and their family income ranges from 5000 to 10000 per month (65.5%). The mean age (\pm SD) at marriage and cohabitation was 19.3 (\pm 4.0), and 19.5 (\pm 3.7), respectively and 6.3% women were never pregnant.

About 64.8% of women who attended the camp had at least one complaint regarding reproductive morbidity (Table 1). Majority of them had presented with white discharge (62.9%) followed by pain in lower abdomen (27.7%). About 18.7% women were having more than one complaint.

Table 2 presents the Pap smear finding according to some selected background characteristics. It was found that 32.2% (244/758) women infected with HPV. HPV infection significantly ($p=0.02$) decreased with age of women whereas, other infection (not HPV infection) increased with age of the women. No significant ($p=0.79$) association was observed between education level of women and cytological findings of Pap smear. Number of pregnancies also showed significant ($p=0.003$) association with infections. As age at cohabitation increased, the HPV infection significantly ($p=0.02$) decreased.

Discussion

The present study illustrates the combined efforts of creating awareness about cervical cancer, and motivating couples to utilize the Pap smear camps organized once in a month at maternity home. Significant increase in knowledge of cervical cancer was observed among women from baseline (27%) to endline (99.5%) survey in the present study through community education programmes. Similar significant increase in knowledge of cervical cancer was observed among Nigerian women from baseline (15%) to endline survey (61.7%) through community based education messages [25].

Majority of the women attending the camps were of reproductive

Self reported complaints	491	(64.8)
No complaint	267	(35.2)
Self reported complaints (N=491)		
White discharge	309	(62.9)
Irregular period	75	(15.3)
Itching in and around vagina	52	(10.6)
Pain in lower abdomen	136	(27.7)
Heavy bleeding	11	(2.2)
Infertility	3	(0.6)
Others*	33	(6.7)
No. of women with multiple complaints	142	(18.7)
Self reported complaints	491	(64.8)
No complaint	267	(35.2)
Self reported complaints (N=491)		
White discharge	309	(62.9)
Irregular period	75	(15.3)
Itching in and around vagina	52	(10.6)
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Others*	33	(6.7)
No. of women with multiple complaints	142	(18.7)

*Includes prolapsed uterus, fibroid, burning urination and spontaneous abortions

Table 1: Reported reproductive complaints by the women attended Pap smear camps.

Background Characteristics	Pap smear findings						Total N=758
	No Infection	HPV infection		Other infections			
	N=376	N=244		N=138			
Current age							
<30	112	(47.7)	84	(35.7)	39	(16.6)	235
30-39	141	(46.7)	106	(35.1)	55	(18.2)	302
40-49	87	(52.4)	47	(28.3)	32	(19.3)	166
50 & above	36	(66.7)	6	(11.1)	12	(22.2)	55
Education							
Illiterate	58	(51.8)	33	(29.5)	21	(18.8)	112
Literate	318	(49.2)	211	(32.7)	117	(18.1)	646
Age at cohabitation							
<18	105	(49.3)	56	(26.3)	52	(24.4)	213
18-25	239	(49.1)	172	(35.3)	76	(15.6)	487
26 & above	30	(55.6)	14	(25.9)	10	(18.5)	54
Number of pregnancies							
0	21	(43.8)	7	(14.6)	20	(41.7)	48
1	39	(45.3)	28	(32.6)	19	(22.1)	86
2	91	(51.1)	59	(33.1)	28	(15.7)	178
3	98	(49.2)	70	(35.2)	31	(15.6)	199
4 & above	126	(51.6)	78	(32.0)	40	(16.4)	244
Current contraceptive use							
Using no method	165	(53.1)	86	(27.7)	60	(19.3)	311
Condom	47	(52.2)	33	(36.7)	10	(11.1)	90
Oral contraceptive Pills	7	(33.3)	8	(38.1)	6	(28.6)	21
IUCD	21	(38.2)	23	(41.8)	11	(20.0)	55
Sterilization	126	(48.5)	87	(33.5)	47	(18.1)	260
Traditional methods	10	(47.6)	7	(33.3)	4	(19.0)	21
Self reported complaints							
No	232	(47.3)	176	(35.8)	83	(16.9)	267
Yes	144	(53.9)	68	(25.5)	55	(20.6)	491

Table 2: Pap smear findings by selected background characteristics.

age group. These findings corroborates with other studies conducted in different setting [17,26]. The reason might be that the intervention strategies were targeted towards sexually active women i.e. of reproductive age group and were motivated to attend the camps. Majority of the women who attended the camps were educated, this probably could be due to the fact that less than 20% women were uneducated in the community. Women with some reproductive morbidity (69%) attended the camp. Similar finding (60%) was also reported by a study conducted in Delhi and the common complaints were reported as white discharge and lower abdomen pain [20]. Out of 758 women who attended the camps, 50% women were suffering with any reproductive tract infections. Majority of them were having HPV infection (32.3%) followed by bacterial vaginitis (27%). Similar findings are observed in other studies [20].

The present study shows that HPV is common among women whose age at first cohabitation was less than 19 years. The peak of HPV infection was also observed among Caucasian women aged 14-19 years. This might be because of significantly more frequently observed any HPV genotype in younger as compared to older women [4]. Due to rapid physiologic changes in the cervical epithelium, or immature immune response to HPV infection also increase the risk of HPV infection at early age at cohabitation [27]. In the similar line the present data also showed that the prevalence of HPV was higher among women with early age at cohabitation than their counterparts.

Present study showed that current user of contraceptive methods had HPV infection than women not using any contraceptive method.

A study conducted among women aged 20-37 years showed increased risk of any HPV infection among women using combined oral contraceptives (COCs) for more than 6 years as compared to non-users of COCs [28]. A systematic review also showed that IUCD might play a protective role in cervical carcinogenesis however, the present study showed that majority of IUCD users were infected with HPV [29]. One-fourth women with self-reported gynaecological morbidity were having HPV infection. Condom is a protective contraceptive method in reducing sexually transmitted diseases which might decrease the risk of HPV infection [30]. Our study showed that 33.1% condom users were having HPV infections which might be because of inconsistent use of condom.

Conclusion

Our study showed that intervention strategy at community and facility level increased the awareness about cervical cancer and Pap smear test. Organizing a Pap smear camp at least once in a month is a good strategy for early diagnosis of cervical cancer.

Treatment and follow-up care can potentially protect women from developing cervical cancer and thus reduce the incidence, morbidity and mortality arising from this condition.

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