

Challenges in Rural Community Based Screening for Cervical Cancer and Precancers

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Abstract

Background: World Health Organization has described cervical cancer, a preventable cancer but it continues to be one of the commonest gynaecological cancers. Mass screening for detecting pre-cancer and early cancer, may in long run be cheaper, medically, economically and socially, than treatment of advanced cervical cancer. However mass screening with limited resources is a challenge. Illiteracy, lack of awareness, poverty create further barriers in the best use of services made available.

Objective: To share experiences of attempts at rural community based mass screening for detection of cervical cancer, cervical intraepithelial neoplasms (CIN).

Material and Methods: In villages near the institute where community based maternal child care was being provided, cervical cancer, CIN were attempted, almost at door step by speculum examination, Pap's test. Cervical cytology slides were brought to the base institute for processing for Papanicolaou staining, studying and reporting back. Results with advice were provided through village health workers.

Results: It was revealed that inspite of rapport with community, because of maternal health services through nurse midwives, very few women of villages utilized opportunity provided almost at their door step for getting screened for cervical cancer, precancer. Overall compliance for getting Pap's test was 15-20%. Over the years, diagnosis of CIN varied. Encouraging aspect was 51% women who sought screening were of 31-50 years and more were multipara (54.08%).

Conclusion: Lack of awareness, because of various reasons, apathy and other unknown factors seem to be barriers to utility of services offered for diagnosis of CIN, Cervical Cancer in villages. Effective mechanisms to ensure maximum utilization of services, are essential.

Keywords: Cervical intraepithelial neoplasm; Cervical cancer; Rural community based; Mass screening; Compliance

Background

Cancer of the cervix is one of the commonest cancers worldwide, probably the most common cancer in developing countries, with 80% of the world's burden of 5,00,000 new cases, making it the leading cause of cancer deaths among women in these countries (ACS 1995, Sharma, *et al.* 2000, Sankaranarayanan 2002, Behbakht 2004, Wall 2005, WHO 2012, Nakash 2017). It has been reported that, of all the cervical cancer cases diagnosed in the world, only about 14% occurred in developed countries (Khanna 2004, Torre 2015). Sixteen percent of the global cases are believed to be in India (Sharma, *et al.* 2000, Mandelblatt 2002, Denny 2005, kaarthigeyan 2012, Sreedevi 2015).

Screening and appropriate treatment of precancer conditions can prevent cervical cancer, almost completely, except occasional aggressive cases. Early diagnosis of cancer prevents mortality and major morbidities. Screening should not only be done of those women who walk in the hospitals or clinics (opportunistic) or those with high risk factors, but all the women of reproductive age and beyond on regular basis (WHO 2014). Actually cervical cancer screening used to be part of the India's family welfare programme for almost three decades, years back. However most of the cases continued to report in advanced stage, because screening programs were almost only on paper.

Real working system did not exist. Overall testing is available at some places and only in few it is free. Whatever screening facilities are available are not used to the full potential. Community based mass screening programs need proper planning, resources, expertise, commitment, and most important utilization of services appropriate therapy and follow-up by the women. So there are limitations. Compliance is crucial. We faced these problems in the community based services for rural women. Findings are being shared because cervical cancer is common, though preventable. While services were initiated, agenda was not research, or research oriented services.

It was simply gynaecological services which needed to be integrated with maternal care with concept of comprehensive care for women's health. However looking at the happenings over the years, it was decided to share. Because cervical cancer is a global problem and the problems of screening may be similar in other parts with low resources.

Objectives

The article is for sharing the results of analysis which was to know the community based burden of cervical cancer, precancer and compliance of rural women for screening made available in their own villages for diagnosis of cervical cancer, CIN.

Material and Methods

Cervical cancer down staging and screening for CIN was carried out in two sets of villages where community based maternal care was being attempted through supervised nurse midwives. So there was rapport with the communities. One set of villages around 15-35 kms were covered under the institution's health insurance scheme since some years. Because of which women could get subsidized, even free therapy at referral for whatever the diagnosis and the other set of villages, around 70-85 kms away from the institute were not covered under insurance scheme.

But for cervical cancer, women of these villages were also assured provision of therapy at low cost at referral. Screening was attempted in the villages through camp approach. Health workers, volunteers from the villages were also involved in planning of the screening camps. They had a briefing session at the base institute prior to screening in the villages in the first cycle of screening. On the day of the planned camp, in a particular village detailed history was recorded from all the women who consented to be screened. Gynaecological examination was done and cervical cytology was collected in those who consented.

Cervical cytology slides were brought to the base institute from where services were provided. Slides were stained and evaluated by Pathologist at the institute and reports made available to the screening team. All the women were requested to collect the reports from the health workers, volunteers or from the institute. Women having obvious abnormality on cervix seen during screening, were asked follow up in the institute for further evaluation and management.

Results

In the 19 villages where maternal and child health services were being provided, since 2 years screening services were provided in 1987, in 20 villages in 1994, in 30 villages in 2000 ,28 villages in 2005 and 34 villages in 2012. Of the 1360, 1071, 1399, 1221 and 1432 women who consented to provide the history, compliance of around 50%, 15%, 19%, 10% and 14% of total adult female population respectively, 734 out of 1360 (53.67%), 463 of 1071 (43.25%), 951 of 1399 (68%), 980 of 1221 (80.2%), 780 of 1432 (50.91%) consented for gynaecological examination and cervical cytology after having provided history (Table I). On evaluation of the slides. CIN diagnosis varied (Table II).

Age	Total women	Women visited camp		Cytology taken	
		Number	%	Number	%
< 30 years	8995	1224	13.6	454	37.09
31-40 years	8582	2062	24.02	1790	86.8
41-50 years	8062	2028	25.15	1895	93
51-60 years	6535	1200	18.36	1077	89.7
> 60 years	5220	673	12.8	354	52.6
Total	37394	7187	22.5	5570	77.5

Table I: Age of Women Available for Screening in Both Groups of Villages.

In 1987 there was one case of cervical cancer in situ (0.13%) out of 734 examined. In the year 1994, invasive cervical cancer was diagnosed in one out of 1071, one cervical cancer out of 1399 in the year 2000, 2 of 980 in 2005 and one out of 1456 in 2012 (Table II). After 2012 maternal care services continued but cervical cancer screening could not be done as focus shifted to villages of a nearby district for maternal child care. In the villages, away from the institution, (not insured under the institute’s insurance scheme), screening services were started some years later.

	Year	Cytology	Normal	Inflam matory	CIN					
					ASCUS	LSIL	HSIL	CIS	Ca.Cx	
Insurance system present	1987	734								
		Number	63	192	-	19	9 6 mod 3 sev	1	-	
		%	8.5	26.15		2.5	2.45	0.13		
	1994	1071	Number	101	333	-	104	9 8 mod 1 sev	-	1
			%	9.4	31.09		9.7	0.8		0.09
	2000	1399	Number	121	636	53	69	8 all mod	2	1
			%	8.6	45.46	3.7	4.9	0.57	0.14	0.07
	2005	980	Number	102	662	7	9	1	0	2
			%	10.4	67.95	0.71	0.91	0.1		0.2
2012	1232	Number	190	712	-	78	7 all mod	1	-	
		%	15.42	57.79	-	6.33	0.56	0.08	-	

No Insurance System	1997	807	Number	93	598	-	45	2 mod	1	-
			%	11.52	74.10		5.57	0.24	0.12	
	2002	579	Number	11	414	12	8	4 2 mod 2 sev	-	-
			%	1.89	71.5	2.07	1.38	0.69		
	2008	3215	Number	20	446	18	10	5 3 mod 2	3	2
			%	2.53	56.52	2.28	1.26	1.26	0.38	0.253

Table II: Cervical Cytology.

CIN – Cervical Intraepithelial Neoplasm

CIS – Carcinoma in Situ

CaCx – Cervical cancer

ASCUS – Atypical Squamous Cells of Undetermined Significance

LSIL - Low grade squamous intraepithelial lesion

HSIL - High grade squamous intraepithelial lesion

Sev - Severe

Mod - Moderate

In 1997, 2002 and 2008, a total of the 1157, 979 and 3454 women consented for the medical history, compliance of 19.26%, 11.07% and 44.92% of the adult female population respectively. Later 807 out of 1157 (69.74%), 579 out of 979 (49%), 2516 out of 3454 (72.84%) consented for examination and cervical cytology. In these villages CIN was diagnosed in 5.8% in 1997, 5.2% in the year 2002 and 6.2% in 2008, however no case of obvious cervical cancer was detected at community level in these villages. Community based screening could not be done after 5 years as concentration was in other villages of other district for maternal child care.

In the old villages of 160 in 1987, 334 in 1994, 298 in 2000, 190 in 2005 and 245 in 2012 who were asked to follow, only 20 (12%), 28 (8%), 48 (16%), 14 (7%) and 38 (15%) respectively reported back to the institute. In the new villages also, only 24 (13%) of 149 women, reported in the year 1997, only 15 (10%) reported in 2002 and in 2008 of 375 asked to follow only 30, (8%) reported for follow up (Table III). Overall the number of nulliparous women who reported for screening was 39%, multiparous women 54.08%.

Another encouraging aspect was 51% women were of 31-50 years. Over all 86.10% of women who had reported for screening were asymptomatic (Table III). Limitations were not all the women consented for history and those who gave history only few consented to get screened and very few followed instructions of follow up. Repeat screening was also a problem. Article based on the findings of analysis is being sent for publication for sharing of findings.

No of villages where camps held		Old Villages				New Villages			
		1987	1994	2000	2005	2012	1997	2002	2008
		19	23	30	29	29	28	28	32
Total population		13252	23148	26315	26103	16897	22050	16895	21453
Total adult female population*		2670	7143	7424	12798	4185	4190	4185	7689
Women visited camps	Number	1360	1071	1399	989	14.56	1157	979	3454
	%	50.93	14.9	18.8	23.39	34.7	27.67	23.39	44.92

Total women examined and cytology taken		734	1071	1399	980	582	807	579	3215
Women asked to follow up		160	334	298	190	149	184	149	352
Followed up	Number	20	28	48	15	14	24	15	30
	%	12	8	16	10	7	13	10	8

Table III: Compliance for Examination and Follow Up.

Discussion

Cervical cancer is one of the commonest gynaecological cancers. The World Health Organization (WHO) described cancer of cervix, a preventable disease and the only way to prevent it was said to be detection of reversible CIN lesions (Mandelblatt 2002, WHO 2012). Working screening programs have been in operation in developed countries for number of years. Screening allows planning of treatment of those who have CIN so that cancer is prevented. Treatment of those with early cancer can cure. So there is prevention of severe morbidity and death. Wide spread use of cervical cytology and other means, have significantly reduced the incidence and mortality from cervical cancer in developed countries (Mishra 2011).

In India resources are limited, many women live in remote rural areas in unhygienic conditions. Many are illiterate, ignorant, not knowing the existence of precancerous disease and preventive modalities. Therefore they may not report for screening. In fact even when women have problems, they live with the symptoms, till their problems become intolerable and report when the disease is advanced (Chhabra, *et al.* 2013, 2017). To make screening programmes cost effective, such programs need to be integrated with other health care programmes and women need to be made aware as they lack awareness (Chhabra, *et al.* 2015). The same was tried in the villages here.

The screening was provided in the villages almost at the doorstep of rural women where maternal care was being provided through nurse midwives. Still very few women utilized the opportunity. In old villages out of all the women who were available to provide medical history, 63% consented for gynaecological examination and cervical cytology with an overall compliance of 17.6% of adult female population. This was in spite of the rapport with community since some years. Therapy at low cost or even free was available because of coverage under insurance schemes.

There was no financial burden on villagers and no fee for screening, still utility of services was low. In the set of villages not covered under insurance scheme, but where women were assured that the services will be provided at low cost, if needed even free if problems were detected, still compliance was 15%. If one looked at the input, for each village camp arrangements, recording history, the examination and cytology collection almost at the doorstep, bringing slides to the institute and reporting back and follow up, the utility of services was very low.

Further the compliance was not very different whether the villages under insurance scheme or without insurance scheme and whether villages were near the institute or away. Mukama, *et al.* (2017) did a study and reported that although general knowledge about cervical cancer prevention was relatively high among women, and attitudes mostly encouraging, specific knowledge about screening was low. There were also undesirable perceptions and beliefs regarding cervical cancer among respondents. There is therefore need for more education campaigns to bridge identified knowledge gaps, and scale up of cervical cancer screening services to all women and increase service utility.

Persuading women that they could benefit from screening services was not easy. The reasons seem to be complex, lack of awareness, apathy and others which need to be researched. Some women may be reluctant to undergo screening because of shyness or embarrassment of pelvic examination, of the screening procedure, or fear of cancer itself. It may also be extreme poverty, as even for

screening at their villages women had to loose that day's earnings. Effective mechanisms to ensure use of services and appropriate follow-up of those who are screened are essential.

It is essential to create awareness among women, which in turn will make them use screening voluntarily. However lack of use of whatever is available, because of various reasons and apathy seem to be the key barriers presently. All these things need in depth studies.

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