

CERVICAL CANCER SCREENING WITH PAP SMEAR IN RURAL POPULATION IN HEALTH CAMP

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ABSTRACT

Cervical cancer is the most common cause of cancer deaths among the women in the developing countries. Every year in Nepal almost 3000 new cases are being diagnosed. Pap smear is one of the significant screening tests for reduction of incidence and mortality from cervical cancer but many developing countries failed to obtain high coverage of target population. So this study aimed to find out the prevalence of the cervical intraepithelial lesion in those areas which are remote through the health camps. The cross-sectional study was done in the Thokarpa Gaupalika of Sindhupalchowk District where 173 females were screened with Pap smear for cervical cancer. Among them, 99 (57.2%) had normal findings and 42 (24.2%) had benign inflammatory changes. The Squamous Intraepithelial Lesion (SIL) was seen in 10.4% of the screened population. Majority of the SIL cases were found to have low grade squamous intraepithelial lesion (LSIL) 6.35% and 4.04% cases were of the high grade intraepithelial lesion (HSIL). Carcinoma cervix was rare and seen in only one case among the screened population. Hence, it could be concluded that opportunistic screening could be beneficial in detecting the cases and at least one screening in the lifetime of a women could be recommended.

KEYWORDS

Cervical Cancer, Health Camp, Nepal

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INTRODUCTION

Worldwide almost 280,000 women die of cervical cancer annually; the disease being the second most common cancer in females.¹ Globally, 500,000 new cases are diagnosed annually. According to the World Cancer statistics of the year 2008, more than 80% of all the cervical cancer cases are found in developing and low income countries.²

A routine cervical smear test is a well known and widely implemented screening modality to identify women with precancerous cervical lesion. It has been shown to be beneficial in many high income countries for screening and has reported to significantly reduce the morbidity, mortality and incidence of cervical cancer.³ The sensitivity of the Pap smear ranges from 55–62 % and specificity ranges from 60–95%.^{3,4} Nevertheless, for women in low income countries especially in the rural areas, access to cervical cancer screening is limited; it is estimated that 95% women have never been screened.⁵

In Nepal, 10.16 million of women at risk of cervical cancer among the age group of 15–44 years making it one of the leading causes of cancer and cancer related deaths.⁶ It has been estimated that in the year 2008 there were 10,000 new cases of invasive cervical cancer and 26,000–40,000 cases of had precancerous lesion of the cervix.⁷ National cervical cancer screening guidelines of Nepal recommend that all women aged 30–65 years be screened for cervical cancer.⁸ But because of lack of awareness, scarce screening resources, inadequate access to health care and difficult geographic terrain, most of the women cannot avail screening and often present in late stage of disease.^{9,10,11} The World Health Organization report showed that a crude incidence rate of cervical cancer in Nepal is 24.2 per 100,000 women per year.⁵ In the year 2018, 2,942 new cases of cervical cancer were diagnosed in Nepal and 1,928 died from the disease.⁶

There is definitely a great need for awareness of screening program but there are only few programs in Nepal to raise awareness or provide cervical smear test. Nevertheless, keeping in mind the geographical, socio cultural and economic background against the implementation of the cervical screening program, this could be executed through awareness and information campaigns through the health camps and media. The diagnostic utility of Pap test as a first line of investigation has proved its significance in screening of cervical cancer. The health camp may be best, easy and economic ways to reach the unreached population.

The present study aimed to find out the prevalence of the abnormal cervical epithelial lesion in women of reproductive age group in the camp setting in a remote area.

MATERIAL AND METHODS

This cross-sectional study was carried out in Thokarpa Gaunpalika of Sindupalchowk District in February 2019. After getting the written informed consent, 173 females who attended the camp for the gynecological checkup were screened for cervical cancer and cervical Pap smear was taken.

All the female between the age group of 15–65 years who are sexually active were screened during the period. Those females who were menstruating, pregnant or had recent delivery and those with history of hysterectomy were excluded from the study.

Clients were placed in the lithotomy position and a sterile bivalve Cusco's speculum was used to visualize the cervix properly. All the smears were taken by the Gynecologists who were trained to take the smear. The smear taken by cytobrush was fixed in 95% ethanol and sent for the cytological examination and evaluation of the smear was done by consultant Pathologist.

Cytological Study: The conventional Pap smear test has been the method of choice for cervical cancer screening since 1950s providing the valuable mass screening enabling the early detection of lesion and effective treatment. Pap smear is widely accepted and meets most of the characteristics of good screening test, obtaining a permanent record of the test in the form of slide and with high specificity of 65–90%. Evaluation of the cervical cytology was done using the Bethesda System 2014.¹²

The data obtained was recorded in the preformed Proforma. Frequency distributions, descriptive statistics and Anova test and t test was applied where applicable. SPSS version 16 was used for statistical analysis and p value of <0.05 was considered significant.

RESULTS

Out of 778 females attending the camp, 173 were screened for cervical cancer. It is seen that maximum number of women was in the age group of 30–39 years (Table 1).

Table 1: Demographic Profile of the patient attending the camp:

Age group (years)	Frequency (n = 173)
<20	2 (1.1%)
20 – 29	27 (15.6%)
30 – 39	55 (31.8%)
40 – 49	47 (27.2%)
50 – 59	33 (19.1%)
>60	9 (5.2%)

The pattern of the cytological finding among the women who underwent screening showed that 99 (57.2%) of the patient had normal findings and 42 (24.2%) had benign inflammatory changes. The SIL was seen in 18 cases (10.4%) of the screened population. However, majority of the SIL cases were found to be low grade (LSIL) that is 11 cases (6.35%). Only 7 cases (4.04%) of High grade (HSIL) were reported. Carcinoma cervix was seen in only one case among the screened population (Table 2).

Table 2: Pap smear findings:

Cytological Findings	n=173	%
Negative for intraepithelial lesion	99	57.2
Benign Inflammatory changes	42	24.2
Squamous Intraepithelial Lesion (SIL)		
LSIL	11	6.35
HSIL	7	4.04
Atrophic	13	7.5
Squamous cell carcinoma	1	0.6

SIL was more commonly seen among women with complaints of leucorrhoea followed by those postmenopausal bleeding and those who had cervical bleeding on touch (Table 4).

Table 3: Relation of Pap smear findings in different age groups

Cytological findings	Age group (years)					
	<20	20 – 29	30 – 39	40 – 49	50 – 59	>60
Negative for intraepithelial lesion	2	17	21	34	12	3
Benign Inflammation	0	8	20	9	4	2
LSIL	0	4	5	1	1	0
HSIL	0	0	4	1	0	0
Atrophic	0	0	0	2	9	2
Squamous Cell Carcinoma	0	0	1	0	0	0

Table 4: Clinical Symptoms and SIL

Clinical Symptoms	Cases (n)	SIL
Leucorrhoea	72	10
Pain in lower abdomen	82	1
Menstrual disorders	14	0
Bleeds on touch	3	2
Postmenopausal bleeding	2	2

The SIL incidence was analyzed in relation to the age in the screened women (Table 3). It was seen in maximum number in age group 20 – 39 years of age.

Table 5: Cervical Lesion and SIL

Clinical lesion in the cervix	Cases	SIL
Erosion	89	7
Hypertrophied	37	1
Cervix bleeds on touch	29	5
Cervicitis	9	2
Others (polyp, prolapse)	9	0

Among the 15 women with SIL, 7 had cervical erosion.

DISCUSSION

Cervical cancer is the second most common cancer in women, comprising of approximately 12% of all cancers in women. Central and South America, the Caribbean, Sub-Saharan Africa part of Oceania, South and South East Asia are the regions with highest incidence of cervical cancer-over 30 per 100,000 women.¹ Globally, more than 500,000 new cases are diagnosed annually and 80% of them are in the developing countries. About 280,000 women die of the disease each year which makes the cervical cancer as an important public health problem.²

Over the past three decades, cervical cancer rates have decreased in most of the developed world, largely as a result of screening and treatment programs.^{3,5} In contrast, rates in most developing countries have risen or remained unchanged. The mortality and morbidity from cervical cancer, particularly in developing countries could be avoided as there is compelling evidence that cervical cancer is one of the most preventable and treatable forms of cancer if it is detected early and managed effectively.⁵ In developing countries there is lack of effective health systems and inadequate financial resources compared with developed countries. On top of that, the most

overlooked and prime drivers of cervical cancer is lack of equality for women in terms of access to health care in many societies.⁵

In Nepal, every year 2942 new cases are diagnosed as cervical cancer and almost 500 women die of the disease.⁶ A population based study carried out in 2003 in collaboration between BP Koirala Memorial Cancer Hospital (BPKMCH) and International Agency for Research on Cancer (IARC) found 2.5% prevalence for precancerous lesion and 0.12 % for invasive cancer among 5000 women aged between 30–59 years.¹³ In our study we observed 10.2% of the precancerous lesion (LSIL+HSIL) which is much higher.

In our study, we observed that 57.2 % of the cytological findings were negative for intraepithelial lesion. Out of the rest 24.2 % had the benign inflammatory smear, 7.5% were atrophic and 6.5% had LSIL where as 4.04 % had HSIL. In a prospective cross sectional study done to find the incidence of pre-invasive state and cancer of cervix in Thirumazhisai health centre, they observed that 36.45% were normal, 47.05% had an inflammatory smear, 14.7% had active bacterial infection, 17.65% had active candida infection and 5.88% had HSIL which is similar to our study.¹⁴

A community based cervical cancer screening program was conducted in Delhi and they found that 41% of the smears taken were benign whereas 4.67% had carcinoma in situ with 1.4% of HSIL cases.¹⁵ In our study, we observed similar results. As we had thought, they had also reported usefulness of camp organized in finding abnormal cytology in women suspected of carcinoma on clinical examination and emphasized the need for cervical cancer screening of women at regular intervals through camp approach in the country.¹⁵

The pap smear result for the rural women in our study revealed 10.2% cases of SIL. Mishra *et al*¹⁶ conducted a study in the rural population of Lucknow in the camp and they observed the incidence of SIL to be as high as 18.2%. Similarly, in a study done by Rajput,¹⁷ they observed the incidence of (10.5%). A high incidence of SIL 17% and 11% has been reported in the rural women by Ambedkar *et al*¹⁸ and Srivastav *et al*¹⁹ respectively. Verma *et al*²⁰ reported a SIL rate of 8% in a tertiary hospital in the rural area of the Himanchal Pradesh, India. This high incidence of SIL in the rural area may be attributed to the poor genital hygiene leading to development of the vaginal infection which remains undetected and untreated.

There is high incidence of high-grade lesion in rural women who were susceptible to develop into cervical carcinoma. Hence, regular cytological

screening is needed among the women of low socio-economic status as well as awareness to be created on cervical cancer and its complications.

Karunakaran *et al*²¹ undertook a camp based cross-sectional study in Karindalam village in Kerala to assess the Pap smear test, knowledge, attitude and practice regarding carcinoma cervix and its screening methods. The Pap smear identified 0.6% of women with HSIL which is much less than that we observed in our study.

Analysis of abnormal epithelial lesions in cervical Pap smears was done in Mid-Western Nepal and they found HSIL to be the most common (6) cases among the abnormal epithelial lesion that was observed in 15 (1.7%) cases out of 880 cases. Eighty per cent of all the abnormal epithelial lesions were found in women above the age of 40 years. They concluded that at least one Pap screening test of the cervix of all women between the ages of 40–50 years needs to be done.²² In our study, among the abnormal epithelial lesion (19/173), LSIL was most common 11 cases followed by HSIL, 7 cases and squamous cell carcinoma was seen in 1 case. Most of the patient with abnormal pap smear result was found in the age group of more than 35 years. Hence the screening of the women of the age group of >35 years is indispensable.

The present study revealed more SIL cases among the younger sexually active women up to the age group of 40 years. Mishra *et al*¹⁶ also observed that 75% of the women screened belonged to the age group of 20–40 years. Leucorrhoea and lower abdominal pain were the main symptoms reported by the women. The SIL incidence was more in the women presenting with the vaginal discharge. Similar findings were reported by Mishra *et al*,¹⁶ Rajput *et al*¹⁷ and Srivastav *et al*,¹⁸ respectively. Clinical cervical lesion, erosion was observed in maximum number of cases but only 7 had SIL which is similar to that observed by Mishra *et al*¹⁶ and Rajput *et al*.¹⁷

Although the incidence of the SIL was high in the rural women, it was notable that the majority, 11 out of 18 (61%), cases were LSIL. If the detected SIL could be treated adequately and followed, the progress to the cervical malignancy could be checked and hence bringing down the incidence of the carcinoma of the cervix in the screened population.

The results of the Pap smear were sent to the respective women through the organizers of the health camp and appropriate feedback was given. Those women who needed further investigations and treatment were followed up in Nepal Medical College Teaching hospital. The woman who had the cytological finding of squamous cell carcinoma was referred to the Bhaktapur Cancer Hospital.

In conclusion, cervical cancer is one of the most common malignancies in the women of Nepal. Pap smear cytology is a useful screening tool to detect pre-invasive cervical epithelial lesions.

Based on the findings of this study a single life-time Pap screening cytology of the uterine cervix of all the women aged more than 35 years is highly recommended.

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