SHORT ARTICLE

An Educational Training on Cervical Cancer Screening Program for Rural Healthcare Providers in India

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Abstract

Conventional, cytology based Cervical cancer screening programmes used in the developed world is often not practical in developing countries. Training of health care work force on a feasible, low-tech, screening methods is urgently needed in low resource settings. Twenty providers including doctors and nurses participated in a 2-days training workshop organized by a Community Health Center in rural South India. The pre-post-training assessment showed significant improvement in knowledge about cervical cancer, 'low tech' screening, treatment options and counseling among the participants. Twenty volunteers screened at the workshop, 2 women (10%) tested positive and one had CINIII lesion and the other had cervical cancer stage IIIB. After the training, the participants felt confident about their ability to counsel and screen women for cervical cancer.

Key Words

Screening; cancer cervix; training; low-tech screening test

Introduction

Worldwide, cervical cancer is the second most common cancer among women by mortality and incidence, next only to breast cancer (1). If diagnosed in its early stage, cervical cancer survival is very high. If untreated, lesions usually progress to invasive cervical cancer, which has a poor prognosis. Conventional cytology, used throughout the developed world, is often not practical in resource-poor countries, especially in the rural areas. Not surprisingly, not only the incidence and prevalence of cervical cancer in these areas are quite high, rural women also have a much poorer survival rates than their urban counterparts (2).

There is more than sufficient evidence to show that low-tech screening, relying on visual inspection of the cervix after 5%acetic acid application (VIA) or with visual inspection with Lugol's iodine (VILI) reduce morbidity and mortality in women living in low-resource settings(3). Both VIA and VILI involve naked-eye examination of the cervix and results are apparent immediately after application. If warranted, treatment such as cryotherapy could be administered at the time of screening, which obviates the need for the woman to return for further testing and/or treatment. Goldie et al conducted cost-effectiveness modeling comparing screening strategies in five developing countries. Their model predicted that for 35-year-old women screened only once in their life, a single-visit approach with the VIA method could reduce the lifetime risk of cervical cancer by 25%. Screening women twice using VIA, at ages 35 and 40, was predicted to reduce lifetime cancer risk by 65% (4). The sensitivity of a single cytology smear to detect cervical intraepithelial neoplasia (CIN) 2 and 3 lesions with VILI is slightly higher than VIA (75.8%vs 71.0%, respectively), VIA had a slightly higher specificity than VILI (93.3%vs. 90.6%, respectively) (5). Based on these figures, the general consensus among experts is that VIA or VILI are reliable and viable

alternatives to conventional cytology. In comparison, the sensitivity of the Pap test is about 68% and the specificity is about 75%; however an important factor in the accuracy of the Pap test is the adequacy of the specimen obtained (6). That being said, relying on the Pap test is often not feasible or practical in most low-resource settings.

HPV DNA testing has emerged as a new option for cervical cancer screening. The sensitivity of HPV DNA tests for detecting CIN 2–3 ranges from 66% to 95%, with most studies reporting values greater than 85% among women aged 30 or older (7,8). This test, however, requires a sophisticated laboratory set up and is much more expensive than VIA and VILI. As such, this test is usually not feasible or practical in most low-resource settings

Most recently, findings from one of the largest comparison studies (N > 150,000 women residing in the slums of Mumbai, India) clearly showed the potential benefits of screening with the "low- tech vinegar test" reduced the cervical cancer death rate by 31% (9).

Aims & Objectives

The aim of the training programme was to improve rural women's access to cervical cancer screening and treatment by educating and training practitioners in the techniques of VIA, VILI, colposcopy, and cryotherapy.

The objectives of the workshop were (a) to educate practitioners about the importance and the benefits of screening for cancer cervix, (b) to provide participants with counseling skills needed to talk with women about cervical cancer, including diagnosis and treatment options, (c) to provide participants with the knowledge and skills needed to perform VIA, VILI, colposcopy, and cryotherapy, and (d) to influence in a positive way, participant attitude regarding the benefits and appropriate use of cervical cancer screening tests, as well as follow up treatment.

Material and Methods

Setting: Since 2007, the Rural Unit for Health and Social Affairs (RUHSA) Department at the Christian Medical College in Vellore, Tamil Nadu, India, has implemented a cervical cancer training and screening programme for the neighboring communities of Vellore town. This effort is in partnership with colleagues at the Weill Cornell Medical College (New York), the University of Sydney (Australia), and the Cancer Council Australia. The project has been cleared by the institutional review board (IRB) of CMC Vellore. The grass-roots, 'low-tech' screening programme is immensely important to the health and well-being of rural women. The project has made 'low-tech' screening facilities available at all of the 18 peripheral health outposts in the RUHSA service area and also has intensively promoted community awareness campaigns. All women between the ages of 30 and 50 years are invited to participate in the screening program, through their peers and the community education programmes. Those who are found to have VIA-positive results are referred for cryotherapy at RUHSA Community Health Centre and those who require more advanced treatment are referred to Christian Medical College Hospital, tertiary care center. Key findings from our initial evaluation were that (i) rural women are amenable to being screened for cervical cancer, but (ii) many women were not being screened because they receive care from a local primary care practitioner, the majority of who do not routinely screen for cervical cancer (10).

Cancer Cervix Screening and Management Training Workshop: In an effort to expand the scope of the cervical cancer screening program in rural Vellore district, we organized a two-day training workshop programme on November 28th and 29th, 2012 for interested local primary care health personnel. The content of the training curriculum included both educational lectures and hands-on training in VIA, VILI, and cryotherapy. The training program was adapted from the Alliance for Cervical Cancer Prevention (ACCP) (11) and the International Agency for Research on Cancer (IARC) training manuals (12).The educational lectures were on the epidemiology of cancer cervix; cervical cancer screening options (VIA, VILI), including tips on how to counsel women about precancerous cervical lesions; and infection prevention. After luncheon, participants were provided hands-on training in VIA and VILI, as well as on colposcopy and cryotherapy. Each participant received a training booklet and a certificate of completion of the course.

Results

Follow up evaluation using a validated questionnaire developed by Jhpiego, an international non-profit health organization affiliated with The Johns Hopkins University, USA working to break down barriers to high quality health care for the world's most vulnerable populations, showed that the two-day intensive workshop met its objective of improving knowledge and skills among primary care providers. At the beginning of the first day, each participant was asked to complete a pre-test survey, which focused on knowledge of cervical cancer diagnosis and treatment, including human papilloma virus risk factor for cervical cancer and infection prevention. After the two-day workshop a post-test was administered (12

participants filled both pre and post-test questionnaire). A paired t-test comparing mean scores pre-and post-test showed significant improvement in the knowledge of the participants regarding cervical cancer, risk factors, infection prevention, VIA testing, follow up treatment options, and counseling (Table.1). Only 50% of the participants answered 14 or more out of 20 questions correctly in pre-test, whereas 95% answered more than 14 correctly in post-test. Mean pre-test score was 13.42 whereas post-test score was 15.75 ($p<.001$).Participants' knowledge of interpreting VIA results improved substantially from pre-test to post-test.100% of the respondents at post-test answered correctly the eligibility criteria for cryotherapy compared to 75% in the pre-test. In pre-test, half of the participants responded that Nabothian cysts appear white on the cervix with VIA thus indicating a positive test result (which is not correct). On the post-test, 100% answered this question correctly.

Of the 20 asymptomatic women screened, two women (10%) were found to be VIA positive by a trainee and confirmed by one of the course leaders. Both women were referred to CMC hospital for more definitive testing. One woman was diagnosed with invasive cervical cancer and was scheduled for treatment at CMC hospital. The other woman, upon further testing, was diagnosed with CIN III as per biopsy. She was treated with cryotherapy at RUHSA and later by LEEP at CMC hospital.

Discussion

This small-scale study shows that a two-day intensive training workshop aimed at improving knowledge and skills among primary care providers is useful and beneficial. After taking the training workshop, the participants felt much more confident about their ability to counsel and screen women for cervical cancer. The instructions on how to do VIA, colposcope guided biopsy, and treat lesions with cryotherapy was viewed as being most valuable and helpful. Further, local practitioners will be encouraged to submit their data to RUHSA's cervical cancer screening database to track women who have been screened. Further, discussion is underway to offer the training program to physicians and nurses working at the Mission Hospitals affiliated with CMC across India. By doing so, we would be expanding outreach to a large cohort of women who presently are not being screened.

Conclusion

Well-planned out training workshops will certainly build the capacity of the primary care health care personnel to administer and initiate Cervical cancer screening programmes for the communities.

Recommendation

Far too many women are dying unnecessarily from cervical cancer. Establishing high-quality screening programmes, as well as practitioner training programmes, will do much to make a difference in women's lives and the well-being of their family.

Authors Contribution

RI is the principle investigator of the programme research project and she has planned the training programme, evaluated the training workshop, analysed the data and edited the manuscript. PR helped in coordinating the training workshop, assisted in analyzing the data. AIK helped in evaluating the training workshop and analyzing the data. MF is the international collaborator in the ongoing Cervical Cancer Screen and Treat project and prepared the first draft of the manuscript. LT is the international collaborator in the ongoing Cervical Cancer Screen and Treat project and helped in editing the manuscript.

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Tables

TABLE NO. 1 ASSESSMENT OF TRAINING USING PRE–POSTTEST SURVEY (N=12)

	Questions	Pretest	Posttest
1	High grade squamous intraepithelial lesions/CIN III of the cervix will almost always regress	6	7
2	SCJ on the cervix is where the columnar epithelium of the endocervix meets the squamous epithelium of the ectocervix.	11	12
3	Cervical cancer is more common in the women who have never had sexual intercourse	11	11
4	Frequent induced abortions are a risk factor for Cervical Cancer	09	09
5	Sexually active woman should have cervical cancer screening every 5 years	12	11
6	Dysplasia always develops first near the SCJ	09	12
7	The patient to be told about the types of HPV during counselling	01	04
8	During counselling, the patient should be told about the relationship between HPV and the risk of cervical cancer	12	12
9	Cryotherapy is 100% effective for the treatment of dysplasia and information to be given during pre-treatment counselling.	10	10
10	The provider should wear a sterile cap and mask while performing cryotherapy	05	06
11	After use, specula should be decontaminated for 10 minutes in 0.5% chlorine solution	10	10
12	Visual inspection of the cervix with acetic acid (VIA) is a procedure used to identify stages of cervical cancer	06	03
13	Nabothian cysts on the cervix are considered a test positive result in VIA	06	12
14	After application of acetic acid, it is recommended that the provider wait at least 1 minute before proceeding with VIA	12	12
15	The SCJ is visible in a postmenopausal woman	07	09
16	Cryotherapy is a practical safe and effective treatment of precancerous lesions of the cervix	12	12
17	Freezing the cervical tissue 3 – 5 mm beyond the edges of the cryotip is recommended in cryotherapy	06	09
18	The eligibility criteria for cryotherapy include a precancerous lesion occupying less than 75% of the cervix	09	12
19	Vaginal bleeding for 1-2 weeks is the most common consequences of cryotherapy	01	08
20	Immediately after cryotherapy , one of the follow-up warning signs include fever of more than 2 days duration	08	09
	Means Score	13.42	15.75
	Median Score	13.50	16.00
	Mode	12.00	16.00
	Range	10 – 17	12 – 19