Effect of Structured Teaching Programme on VIA Test for Early Detection and Diagnosis of Cervical Cancer

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Abstract

The conceptual framework of the study, undertaken in select health centres of New Delhi, was based on General System Model. The research approach was evaluative with one group pre-test and post-test design. The study population comprised of Community Health Workers working in selected centres in Najafgarh, Delhi. Purposive sampling technique was used to select a sample of 30 Community Health Workers. A structured knowledge questionnaire was developed to assess the knowledge of subjects. A Structured Teaching Programme was developed to enhance the knowledge of Community Health Workers. Pre-test was given on day 1 and Structured Teaching Programme administered on same day. Post-test was conducted on day 7. Most of the Community Health Workers were in the age group of 21-30 years with academic qualification up to Higher Secondary level. Maximum Community Health Workers had professional qualification as ANM/MPHW (female). Majority of the Community Health Workers had experience up to 5 years. Initially there was deficit in scores of knowledge of Community Health Workers regarding Visual Inspection with Acetic Acid (VIA) test. Mean post-test knowledge scores of Community Health Workers were found to be significantly higher than their mean pre-test knowledge score. The Community Health Workers after exposure to Structured Teaching Programme gained a significant positive relationship between post-test knowledge scores. The study reveals the efficacy of Structured Teaching Programme in enhancing the knowledge of Community Health Workers regarding VIA test and a need for conducting a regular and well planned health teaching programme on VIA test for improving their knowledge on VIA test for the early detection and diagnosis of cervical cancer.

Cervical carcinoma is a common malignancy among women especially in the low socio-economic groups. Harald Zur Hausen was awarded the Nobel Prize for medicine in 2008 for his efforts in identifying Human Papilloma Virus (HPV) as the causative agent for carcinoma of cervix. This remarkable discovery paved the way towards prevention / treatment of HPV and thereby decreasing the incidence of HPV induced cervical cancer. Also various diagnostic tests for Human Papilloma Virus may be utilised in early identification of HPV infection and preventing the occurrence of cervical carcinoma.

Cervical cancer is fully preventable and curable at low cost and at low risk, with screening to facilitate the timely detection in asymptomatic women.

Cervical cancer has a long latent phase and can be prevented easily by early detection using various screening procedures like Pap smear, HPV DNA testing, Visual Inspection with Acetic Acid (VIA) and Visual Inspection with Lugol's iodine.

Visual inspection of cervix after acetic acid application is a relatively easy screening in which a pre-cancerous lesion or cancerous lesion turns white after application of acetic acid (acetowhite lesion). It can be easily taught to a basic level health care worker to perform and interpret on any woman. The present study was done to evaluate the effect of Structured Teaching Programme (STP) on VIA test for the early detection and diagnosis of cervical cancer in terms of knowledge among the Community Health Workers in selected Health Centres in Delhi.

Objectives

The study was carried out with the following objectives:

1. To develop a Structured Teaching Programme (STP) for the Community Health Workers on VIA test for the early detection and diagnosis of cervical cancer.
2. To assess and evaluate the knowledge of the Community Health Workers before and after the administration of STP on VIA test for the

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early detection and diagnosis of cervical cancer.

3. To find the association between the post-test knowledge scores of the Community Health Workers with selected variables.

Literature Review

Related to knowledge of cervical cancer screening

WHO (2005) reported that without treatment 60 percent or more cases of mild dysplasia resolve spontaneously. Only about 10 percent progress to moderate to severe dysplasia in 2-4 years. The direct precursor of cervical cancer is high-grade dysplasia, which in about a third of instances may progress to cervical cancer in 10–15 years.

Related to cervical cytology as a screening test

Schiffman et al (2000) found that in Costa Rica, Pap screening had 78 percent sensitivity and 94 percent specificity in identifying Atypical Squamous Cells of Unspecified Significance (ASCUS).

Nazeer (1998) reported that range of sensitivity of Pap smear screening was 11-99 percent and specificity was of the range of 14-97 percent.

Related to screening by HPV testing

WHO (2002) suggests that in terms of public health and also for practical purposes, all cervical cancer cases should be considered as associated with HPV infection. Since the mid-1990s, there has been substantial interest in the use of standardised HPV-DNA testing as a cervical cancer screening tool. It is based on the premise that it will provide acceptable diagnostic performance. This test is more reproducible and more easily adapted for clinical practice than conventional Pap cytology.

Related to visual inspection with acetic acid

Ghaemmaghami et al (2004) in a study on 1200 eligible women with Colposcopy as reference standard and using 4 percent acetic acid to perform VIA reported high sensitivity and specificity of VIA (74.3% and 94% respectively) and comparable with that of cytology (72% and 90%) and concluded that use of VIA is a "feasible method of screening where cytopathology is limited".

Débora (2011) reported that in spite of a vaccine that holds some promise for cervical cancer prevention, screening is still essential. Between 2005 and 2009, WHO and the International Agency for Research on Cancer were involved in implementing cervical cancer prevention and control programmes based on VIA followed by cryotherapy for treatment in six African countries. VIA is now included as part of cervical cancer screening in 17 national or regional programmes.

Methodology

An evaluative research approach was adopted to determine the effectiveness of the STP; the criteria selected were: gain in knowledge about the early detection and diagnosis of cervical cancer by VIA test. Pre-experimental design (one group pretest-post-test design) was used. The study was conducted in RHTC Health centre in Najafgarh, Delhi. A sample of 30 Community Health Workers was selected. Purposive sampling technique was used to select the subjects. On day 1, the pre-test of knowledge regarding VIA test for the early diagnosis was carried out and the same day STP was also administered. A post-test on knowledge was conducted on day 7 after the STP.

Data collection tools and techniques

The following data collection instruments were constructed to obtain the data.

- A structured knowledge questionnaire was developed to assess the knowledge of Community Health Workers regarding visual inspection with acetic acid for early detection and diagnosis of cervical cancer.
- The technique selected for data collection was paper-pencil method for assessment of knowledge by a self-administered questionnaire.

Self-introduction and introduction of the nature of the study was done to obtain free and frank response from the subjects. The purpose of the study was explained and confidentiality was assured to the subjects. Final study was conducted according to the research design.

Results

Maximum number of subjects (40%) were in the age group of 21-30 years. Maximum number of Community Health Workers' educational qualification was higher secondary (56.67%). The professional qualification of a significant number of them (36.67%) was ANM/MPHW (female). Sizable number of samples (36.67%) had their working experience between 0-5 years. No Community Health Workers had in-service education on VIA test. The mean pre-test knowledge score was 23.23 with a median 22.5 and standard deviation 4.38 (Table 1). Range of possible score was between 0-40 indicating that there was knowledge deficit regarding VIA test. The mean post-test knowledge scores 35.2 with a median 36 and

standard deviation 3.53 (Table 2).

The mean difference between pre-test and post-test knowledge score was 11.97. The obtained mean difference was found to be statistically significant as evident from 't' value is 14.95 at df (29) at 0.05 level (Table 3). Thus the structured teaching programme on VIA test was an effective strategy to enhance the knowledge of the Community Health Workers.

The computed chi-square value between gain in the post-test knowledge scores and age (χ^2=12.68) and duration of experience (8.70) were found statistically significant.

The computed chi-square value between gain in the post-test knowledge scores and educational qualification (χ^2=0.737) and professional experience (χ^2=4.39) were not found statistically significant.

Table 1: Mean, Median and Standard Deviation of pre-test and post-test knowledge scores of Community Health Workers (n=30)

Knowledge score	Mean	Median	Standard deviation
Pre-test	23.23	22.5	4.38
Post-test	35.2	36	3.53

Possible range of score was 0-40

Table 2: Area wise Mean, Mean Percentage gain of Pre-test and Post-test Knowledge scores of Community Health Workers on VIA test (n=30)

S.No.	Area	Maximum score	Pre-test		Post-test		Mean % gain
			Mean score	Mean % score	Mean score	Mean % score	
1	Definition and incidence of cervical cancer	2	1.76	88	2	100	22
2	Causes, risk factors, Signs and symptom of cervical cancer	7	4.96	70.85	6.46	92.28	21.43
3	Diagnostic measures and procedures of Visual Inspection with Acetic Acid testing	27	13.63	50.48	23.06	85.4	34.92
4	Treatment and preventive measures of cervical cancer	4	2.86	71.5	3.66	91.5	20

Table 3: Mean, Mean difference, Standard deviation of difference, Standard error of mean difference and 't' value of Pre-test to Post-test knowledge scores of Community Health Workers

Knowledge	Mean	Mean D	SDD	SEMD	't' Value
Pre-test	23.23	11.96	4.38	0.8	14.95*
Post-test	35.2				

df(29) t=2.04, *Significant at 0.05 level

Table 4: Chi square value showing association between post-test knowledge scores with selected variables

S.No	Selected variable	Knowledge		df	χ^2 Table value	Chi-square
		Below median	Above median			
1	Age	12	14	4	9.48	12.68*
2	Educational qualification	11	15	2	5.99	0.73 NS
3	Professional Education	12	14	3	7.81	4.39 NS
4	Duration of Experience	12	14	3	7.81	8.73 *

* Significant at 0.05 level; NS=Not Significant

Conclusions

On the basis of the above findings of the study following conclusions could be drawn.

1. There was deficiency of knowledge in Community Health Workers regarding VIA test.

2. The Structured Teaching Programme was found to be effective in increasing the knowledge of Community Health Workers regarding VIA test.

3. There was significant positive association between post-test knowledge and selected variable (age and duration of experience).

Implications

Nursing Education: The gap between the existing and expected level of knowledge of Community Health Workers in different areas of detection and diagnosis of cervical cancer calls for resetting priorities in planning a teaching programme for Community Health Workers.

The nursing students need to have knowledge of different techniques and skills in assessing and diagnosing the needs of patient and providing information, education and counselling to the patient about the disease. Since cervical cancer has the highest ranking among female cancers in India, in-service and continuing education on programme on VIA test should be

planned and implemented for all categories of Nurses working in the obstetrical and gynaecological units.

Nursing Practice: The Structured Teaching Programme developed for the present study being effective, may be translated into local languages and modified, if required. It should be made available to all nursing personnel to serve as a guide.

Nursing Administration : Nurse administrator may encourage Community Health Workers to do VIA test for early detection and diagnosis of cervical cancer.

Nursing Research: Nursing Research can be conducted in developing a self-learning module on VIA test to assess its effectiveness among health workers, Anganwadi Workers. A survey may be carried out on the incidence of cervical cancer and the effectiveness of VIA test among the women in India, and its probable cause.

Public Education: Health education programme on early detection and diagnosis of cervical cancer by VIA test can be planned for ASHA (Accredited Social Health Activist), Anganwadi Workers, Mahila Mandal Workers to disseminate and utilise this health education programme to community.

Recommendations

1. The study can be replicated on a large sample to validate the findings and make generalisation.
2. A similar study may be conducted on (a) experimental research approach and pre-test post-test control group design, (b) evaluating the effect of the planned teaching programme on health workers, Anganwadi Workers regarding cervical cancer of the women.
3. A follow-up study can be conducted to assess the retention of knowledge and practice of nursing personnel regarding early diagnosis and detection of cervical cancer by VIA test.
4. A longitudinal study can be conducted to evaluate the impact of early detection and diagnosis of cervical cancer through VIA test for ANM students.
5. A study can be carried out to (a) identify educational needs of ANM students on VIA testing, (b) evaluate the effect of VIA test for the early detection and diagnosis of cervical cancer through curriculum in Basic Nursing Education.

References

1. Débora Miranda. *Bull World Health Organ* 2011;89: 628-29 doi:10.2471/ September 2011 BLT.11.030911
2. Garrett HE. Statistics in Psychology and Education, 12th Indian Reprint, 2007; New Delhi: Paragon International Publishers
3. Wood GL, Haber Judith. Nursing Research (5th edn, 2002). London: CV Mosby Company
4. ACCP: Planning and Implementing Cervical Cancer Prevention Control Programs; Alliance for Cervical Cancer Prevention, Seattle (2004), pp 3-20
5. Ardahan Melek, Temel Ayla Bayik. Visual inspection with acetic acid in cervical cancer screening. *Cancer Nursing* 2011; 34(2): 158-63
6. Basu P. Visual Inspection with acetic acid and cytology in the early detection of cervical neoplasia in Kolkata, India. *International Journal of Gynecological Cancer* 2003;13:626–32
7. Bradley J, Barone M, Mahe C, Lewis R, Lucaini S. Delivering cervical cancer prevention services in low resource settings. *International Journal of Gynecology & Obstetrics* 2005; 89: S21-S29
8. Chhabra S, et al . Gynecological Malignancies in a rural institute in India. *Journal of Obstetrics and Gynaecology* 2002; 22(4): 426-29
9. Claeys P, De Vuyst H, Gonezalez C, et al. Performance of acetic acid test when used in field conditions as a screening test for cervical cancer. *Trop Med Int Health* 2003; Aug ; 8(8): 704-09
10. Cruz P, Winker JH, Velasco ME. Screening and follow up for cervical cancer prevention in rural Mexico using visual inspection. *Sauld Publica Mex* 2005; 47 (1): 39-48
11. Eftikhar Z, Rahimi P, et al. Accuracy of visual inspection with acetic acid (VIA) for early detection of cervical dysplasia in Tehran, Iran. *Asian Pacific Journal Cancer Prev* 2005; Jan-Mar; 6(1): 69-71
12. Gaffikin L. Performance of visual inspection with acetic acid for cervical cancer screening: A qualitative summary of evidence to date. *Obstetrical and Gynecological Survey* 2003; 58(8): 543-50
13. Ghaemmaghami F, Betash N, Modares G, Mousavi A. VIA as a feasible screening test for cervical neoplasia in Iran ; *International Journal of Gynaecol Cancer* 2004; 14(3): 465-69
14. Goldie SJ. Cost effectiveness of cervical cancer screening in five developing countries. *N Engl J Med* 2005; 353 (2): 2158-68
15. Jeronimo J, Moraleso U, Horna J, et al. Visual Inspection with acetic acid for cervical cancer screening outside of low resource settings, Rev Panam. *Salud Publica* 2005; 17(1): 1-5
16. Sankaranarayanan R, Rajkumar R, Teresa R, et al. Initial results from a randomized trial of cervical visual screening in South India. *International Journal of Cancer* 2004; 109: 461-67
17. Schiffman M, Herrero R, Hildeshein A, et al. HPV DNA testing in cervical cancer screening: Results from women in a high-risk province of Costa Rica. *JAMA* 2000; 28 : 387-93
18. Sellors JW, Jeronimo J, Sankarnarayanan R, et al. Assessment of the cervix after acetic acid wash: Inter-rater agreement using photographs. *Obstet Gynecol* 2002; 635-40
19. WHO: Cervical Cancer Screening in Developing Countries. A report of a WHO Consultation, WHO, Geneva; 2002 , pp 1-65
20. WHO: Preventing Chronic Diseases: A Vital Investment. WHO Global Report; 2005, pp 37-44

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