A study to evaluate the effectiveness of dietary intervention on precancerous cervical lesion among women in selected rural area of Bangalore, Karnataka

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ABSTRACT

Background and Objectives

Cervical cancer is one of the leading cancers among women, which affects approximately 4,90,000 women each year, resulting in approximately 2,70,000 deaths worldwide. It has been estimated that in India, 1,00,000 new cases of cervical cancer occur annually, and 70 percentage or more of these cancers are stage III or higher at the time of diagnosis. In 1994, the WHO recommended exploring the benefits of VIA as an alternative screening test for cervical cancer in underserved developing countries. This study confirms the accuracy of VIA in detecting lesions requiring treatment at the hands of nurse-midwives in such a low resource setting. This finding, plus the fact that VIA is simple to administer, can be performed by nurse-midwives and the results are immediately available, make it a particularly valuable option for many resource- poor settings. VIA has been found to have a sensitivity and specificity ranging from 40% to 92% to detect cervical cancers and its precursors. This has been shown in many studies conducted by various authors worldwide. So, investigator felt to conduct a survey, screening and intervention through dietary modification on prevention of cervical cancer among women in selected rural areas, Bangalore.

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Objectives of the study

1. To identify the Pre cancerous cervical lesion among women in selected rural area, Bangalore.

2. To evaluate the effectiveness of dietary intervention on Pre cancerous cervical lesion among women in selected rural area, Bangalore.
3. To find an association between the selected factors and mean difference in Pre cancerous cervical lesion among women before and after dietary intervention.

**6.5 HYPOTHESIS**

**H$_1$:** There will be significant difference between the Pre cancerous cervical lesion before and after dietary intervention among women in experimental group.

**H$_2$:** There will be a significant difference in the mean difference of Pre cancerous cervical lesion between women in experimental and control group.

**H$_3$:** There will be significant association between the mean difference in Pre cancerous cervical lesion and selected factors among women in experimental group.

**Assumptions:**

1. VIA may help in the early detection of PCCL among reproductive age group women.
2. Women may be unaware about effectiveness of diet in prevention of cervical cancer.
3. Women may be unaware about low cost screening technique like VIA in early detection of cervical cancer.
4. Dietary intervention may reduce the PCCL among women.

**Independent variable:** Dietary intervention.

**Dependent variable:** Precancerous cervical lesion

**Methods**
Descriptive survey design and Quasi experimental research design was used to assess the effectiveness of dietary intervention on pre cancerous cervical lesion among women and purposive sampling technique was used to select the sample.

In the study dependent variable is PCCL among women and independent variable is dietary intervention. The structured interview schedule and observation rating scale of VIA were used to collect the data from women before and after administration of millet based antioxidants. The content validity of the research tool were established by experts and reliability was established by inter-rater reliability method.

Ludwing Von Bertalanffy’s general system theory (1968) was used as a conceptual framework. Pilot study was done at S.S.Ghati P.H.C, Doddaballapura taluk, Bangalore rural. The findings revealed feasibility of tool and practicability of the study.

The main study was conducted after obtaining permission from the Medical Officer of Anugondanahalli P.H.C, Hoskete taluk, Bangalore rural and the sample of 100 women were identified. The collected data were analyzed and interpreted as per the objectives of the study by using descriptive and inferential statistical methods.

RESULTS

- Findings related to grading level of VIA among control group reveals that, majority of the respondents 37(72%) were in grade II CIN and 13(26%) were in grade I CIN in pre test. Where as in post test majority of the respondents 35(70%) were in grade II CIN and 15 (30%) were in grade I CIN. The data subjected for Chi- square test indicate that the grading level of acetic acid test between pre test and post test found to be non significant ($\chi^2 = 0.20$ NS $P > 0.05$).

- Findings related to grading level of VIA among experimental group reveals that, majority of the respondents 40(80%) were in grade II CIN and 10(20%) were in grade I CIN in pre test. Where as in post test majority of the respondents 30(60%) were in grade I CIN and 20(40%) were in negative score. The data subjected for Chi- square test indicate that the grading level of acetic acid test between pre test and post test found to be significant ($\chi^2 = 70.00^*$ $P > 0.05$).
• Findings related to overall mean scores of VIA in control group reveals that, the mean pre-test score is 7.04 and mean post-test score is 6.80 with difference 0.22. The pre-test score of SD is 1.4 and post-test score of SD is 1.7 with difference 0.8. The mean percentage score of pre-test is 35.2 and mean percentage score of post-test is 34.0 with difference 4. However, the difference in the mean scores of VIA between Pre-test and Post-test found to be non-significant (t = 1.94 NS, P > 0.05).

• Findings related to effectiveness of dietary intervention on PCCL among experimental and control group reveals that, the mean PCCL after the dietary intervention was 3.0 (SD = 2.5) significantly less than the pre-test 7.04 (SD = 1.4), t = 20.3 (p < 0.05). Therefore, the null hypothesis was rejected and the dietary intervention was significantly effective in reducing PCCL among women.

• Findings related to effectiveness of dietary intervention on Post-test PCCL among experimental and control group reveals that, the obtained mean value in Post-test PCCL among experimental group 3.0 (SD = 2.47) was significantly higher than the control group 6.44 (SD = 2.11), t = 7.479 (p < 0.001). Therefore, the null hypothesis was rejected and the dietary intervention was highly significant in reducing Post-test PCCL among women.

• Findings related to association between the selected factors and PCCL among women of experimental group before and after dietary intervention reveals that, there was a significant association between frequency of sex with partner and the effectiveness on PCCL after the dietary intervention, [ t = 2.35 (p < .05), β = -.453, 95% CI = -.951 to -.058]. It is found that the lesser the frequency of sex the effective protection against PCCL. However, none of the other selected factors were associated with the effectiveness of dietary intervention on PCCL in experimental group (p > .05).

• Findings related to dietary assessment between Vitamin A and Post-test PCCL status in experimental and control group reveals that; Majority of women in experimental group with adequate vit.A (n = 8) (16%) had Grade I PCCL; however, there was no signification association between the adequacy of dietary intake of vit.A and PCCL.
\[ \chi^2 = 1.881 \ (p > .05) \]. In control group majority of women with adequate vit.A (n = 6) (12%) had Grade II PCCL, (n = 3) (6%) had Grade I PCCL and there were no women in negative PCCL. However there was no signification association between the adequacy of dietary intake of vit.A and PCCL \[ \chi^2 = 6.093 \ (p > .05) \].

- Findings related to dietary assessment between Vitamin C and Posttest PCCL status in experimental and control group reveals that; In experimental group majority of women with adequate vit.c (n = 10) (20%) had negative PCCL. However there was no signification association between the adequacy of dietary intake of vit.c and PCCL \[ \chi^2 = .946 \ (p > .05) \]. In control group majority of women with adequate Vit.C (n = 13) (26%) had Grade II PCCL, (n = 5) (10%) had Grade I PCCL and only (n = 1) (2%) had negative PCCL. However there was no signification association between the adequacy of dietary intake of vit.C and PCCL \[ \chi^2 = 2.176 \ (p > .05) \].

**Interpretation and Conclusion**

Based on the above findings of the study, recommendations were drawn for nursing education, practice, administration and research. The study concluded saying that dietary intervention with rich antioxidants significantly reduced PCCL among women in experimental group. Also, moderate sexual behavior influenced the reduction in PCCL. Therefore the women must be educated and motivated to practice millet based diet and moderate sexual behavior.

**Key words**

Effectiveness; Dietary intervention; Precancerous cervical lesion; Women