



“Risk Factors Associated With Cervical Cancer Among Women Between 25-45 Years Residing In Selected Rural Communities Of Bagalkot District. A Cross-Sectional Study”

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ABSTRACT

Background: Cervical cancer poses a significant global burden and remains a serious therapeutic challenge. Globally, cervical cancer is the fourth most common cancer in women, with around 6,60,000 new cases in 2022. Virtually all cervical cancer cases (99%) are linked to genital Human Papilloma Virus (HPV). Cervical cancer is an easily preventable disease; the morbidity rate can be minimized by early detection of risk factors, proper screening and vaccination.

Methods: A descriptive cross-sectional study was conducted among 500 women between the age group of 25-45 years, residing in rural areas of Bagalkot, selected using convenient sampling technique. A self-structured questionnaire with interview method was used to gather information about risk factors of cervical cancer. Chi square test was used to uncover the relationship between risk factors of cervical cancer and socio-demographic variables.

Results: 49.4% women were at low risk, 32% women had no risk, 13% women had medium risk and 5.4% were highly risk for getting cervical cancer. A significant association was found between risk factors of cervical cancer and age ($\chi^2 = 30.03$, $P < 0.05$), educational status ($\chi^2 = 95.4$, $P < 0.05$), family monthly income ($\chi^2 = 124.5$, $P < 0.05$), marital status ($\chi^2 = 24.1$, $P < 0.05$), occupation ($\chi^2 = 39.6$, $P < 0.05$) and type of diet ($\chi^2 = 21.9$, $P < 0.05$) at the position of significance of 0.05.

Conclusion: After evaluation of risk factors of cervical cancer among women between 25-45 years, it was found that most women were having the risk for cervical cancer and need educational programmes to develop awareness regarding prevention of cervical cancer.

Keywords: Cervical cancer, risk factors. Women, rural area, prevention.

INTRODUCTION



Cervical cancer is the uncontrolled growth of abnormal cells in the lining of the cervix which remains one of the most common causes of death among women globally and ranks 4th of all cancers.¹ Almost all cervical cancer cases (99%) are linked to infection with high-risk Human Papilloma Virus (HPV), an extremely common virus transmitted through sexual contact.² Cervical cancer is ranked as the second most common cancer in India,³ accounts for about one-fourth of all cervical cancer deaths worldwide, with a disproportionately high prevalence among females residing in rural regions and those having low-income status. One of the reasons for the high mortality rate in India due to cervical cancer is low level of awareness regarding cervical cancer symptoms, screening programs, risk factors and preventive measures.⁴

GLOBOCON data shows that some regions are at a higher risk of cervical cancer than others⁵ in which Sub-Saharan Africa has the highest cervical cancer burden globally.⁶ The known risk factors of developing cervical cancer are Human Papilloma Virus (HPV), low socio-economic status, smoking, marrying before age 18 years, young age at the first coitus, multiple sexual partners, multiple sexual partners of spouse, and multiple childbirths. These factors raise the risk of developing cervical cancer. It has now been proven that HPV is the major causative factor of carcinoma of the cervix. HPV types 16, 18, 31, 33, and 45 are mostly related with invasive carcinoma of the cervix.⁷

In 2020, more than half a million women contracted cervical cancer, and about 3,42,000 women died as a result – most in the poorest countries. Quick and accurate screening programmes are critical so that every woman with cervical disease gets the treatment she needs, and avoidable deaths are prevented. WHO's global strategy for cervical cancer elimination – endorsed by the World Health Assembly in 2020 – calls for 70% of women globally to be screened regularly for cervical disease with a high-performance test, and for 90% of those needing it to receive appropriate treatment. Alongside vaccination of girls

against the human papillomavirus (HPV), implementing this global strategy could prevent more than 62 million deaths from cervical cancer in the next 100 years.

“Effective and accessible cervical screening and treatment programmes in every country are non-negotiable if we are going to end the unimaginable suffering caused by cervical cancer,” says Dr. Princess Nono Simelela, Assistant Director-General for Strategic Programmatic Priorities: Cervical Cancer Elimination. This new WHO guideline will guide public health investment in better diagnostic tools, stronger implementation processes and more acceptable options for screening to reach more women and save more lives.”⁸ The situation is more alarming in the rural areas where the majority of women are illiterate and ignorant about the hazards of cervical cancer as well as healthcare resources are scarce. Poor prognosis due to late diagnosis is common in similar resource-constrained settings around the world, where women present with advanced stages of Human Papilloma Virus (HPV) caused cervical cancer and lack treatment facilities.⁹ Cervical cancer intervention focuses on primary and secondary prevention along with screening, are the best methods to decrease the burden of cervical cancer.¹⁰

Cervical cancer is highly preventable and curable if detected early. Detection of risk factors among women may help lower the severity of cervical cancer.

MATERIALS & METHODS

Study design and setting – the study was conducted using descriptive cross sectional research design. The data was collected from women residing in Pattadakal and Gaddanakeri villages, Badami, Bagalkot district, Karnataka. These villages are at a distance of 40 Kms and 14 kms respectively from Bagalkot city. The population of Pattadakal is 1,73,181 and the population of Gaddanakeri is 8394.

Participants - In the present study, participants were women between ages of 35-50 years. The sample consisted of 500 women selected by convenient sampling technique.

Sample size estimation: Based on prevalence, sample size was calculated from findings of the pilot study on outcome variables.

$$\text{Sample size (N)} = 4PQ/I^2$$

Where, P – Prevalence, Q = 100-P, I = Error

$$N = 4 \times 18.3 \times 81.7 / 12.96$$

$$N = 500$$

Data collection:

Data collection was carried out from 6/7/24 to 20/7/24 in Pattadakal and Gaddanakeri, Bagalkot, Karnataka, India. Data was collected from women between 25-45 years of age through self-report method. Before enrolment of subjects and data collection, formal authorization was obtained from the principal of the nursing institution and gram panchayats, of concerned villages. The study was explained to prospective participants and on paper, consent was taken from them. A self structured questionnaire was

given to participants who were able to read and write Kannada and English and the participants who cannot read and write Kannada or English, the researcher read questions and asked them to mark their options.

DATA COLLECTION INSTRUMENTS:

Section 1: Socio-demographic Performa – Comprised of 6 items to assess the socio-demographic factors of women.

Section 2: Self structured questionnaire to assess risk factors of cervical cancer: It comprised of 20 items. Each item followed with 2 options (yes/no); '1' mark was given for presence of characteristic and '0' mark was given for absence of characteristic.

INCLUSION AND EXCLUSION CRITERIA:

Inclusion criteria: the study includes the women who are willing to participate and who are:

- between the age group of 25-45 years
- available at the time of data collection
- Know to read/write/ understand either Kannada or English

Exclusion criteria

- Women who have undergone hysterectomy
- Women who are diagnosed with cervical cancer
- Women who are mentally ill and not able to provide data

STATISTICAL ANALYSIS:

Information was analyzed using SPSS version 18. Data were entered in MS excel sheet and then transferred to SPSS. Univariate analysis was done for description of data with frequency distribution and percentage distribution. Chi square test was used to determine the socio demographic factors associated with risk factors of cervical cancer among women between 25-45 years of age.

ETHICAL CLEARANCE:

Ethical clearance certificate was obtained from BES, Bagalkot College of Nursing Ethical clearance committee, Bagalkot (BES-BCON-IEC-2024-25-07).

RESULT

The socio-demographic data obtained from women was organized using frequency distribution.

Distribution of socio-demographic variables

Majority of women were between the age group of 25-34 years, 19.8% were between 35-39 years of age, 22.2% were between 40-45 years. Greater part of women have completed their pre-university education

(29.4%), 18.4% of women completed their primary and high school education, 14.2% women completed their graduation, 14.2% were having no formal education. Most of participant's family monthly income was between Rs 10,001-Rs 15,000 (51%), 24% women were having family monthly income of Rs 15001-20,000, 13.8% were having Rs 5001-10000, 9.2% were having Rs 20,001 and above and 2% were having ≤5,000 rupees per month. 77.8% of women were married, 16% were unmarried, and 6.2% were widow / separated. Major parts of women were housewives (37.2%), 29.8% were coolie and 33% were working in other occupations. Majority of women consumed mixed diet (62.8%), about 37.2% were vegetarian.

Risk factors for cervical cancer:

The women were divided into 4 categories based on the level of scores. Level of risk for cervical cancer among women (Table 1) depicts that most of (49.4%) women were at low risk, 32% women were having no risk for cervical cancer, 13% women were at medium risk and 5.4% at high risk getting cervical cancer.

Table 1: Categorization of risk for cervical cancer among women.

LEVELS	SCORE	PERCENTAGE
No risk	0	32%
Low risk	1-4	49.40%
Medium risk	5-10	13%
High risk	>10	5.50%
N= 500		

Item wise distribution of chances risk for cervical cancer showed that, women who were experiencing pain at lower back (27.2%) and using cloth during menstruation (27.2%), who get pelvic pain during sexual intercourse (26%), who delivered the baby at young age (23.2%), and women who had the economical status less than 15,000 rupees(21.8%), were at risk for getting cervical cancer.

Table.2. depicts that, a significant association was found between risk factors of cervical cancer and age ($\chi^2 = 30.03$, $P < 0.05$), educational status ($\chi^2 = 95.4$, $P < 0.05$), family monthly income ($\chi^2 = 124.5$, $P < 0.05$), marital status ($\chi^2 = 24.1$, $P < 0.05$), occupation ($\chi^2 = 39.6$, $P < 0.05$) and type of diet ($\chi^2 = 21.9$, $P < 0.05$) at the position of significance of 0.05.

Table 2: Association between risk factors and socio-demographic variables.

N=500

Variable	Df	Chi-square value	Table value	P Value
Age	9	30.03	16.91	0.00*
Education	12	95.4	21.02	0.00*
Family monthly income	12	124.5	21.02	0.00*
Marital status	6	24.1	12.59	0.00*
Occupation	6	39.6	12.59	0.00*
Type of diet	3	21.9	7.81	0.00*

 $\alpha=0.05$, *Significant, DF: degrees of freedom

DISCUSSION

The study results showed that women experiencing pain at lower back and using cloth during menstruation get pelvic pain during sexual intercourse, who delivered the baby at young age, having irregular menstrual period and family monthly income less than Rs 15,000 were at risk for getting cervical cancer. A systematic literature review analyzed by Xiao Li.et.al, revealed that factors like sexual behavior, age at marriage, number of sexual partners, number of pregnancies, sexually transmitted diseases and delivery history were found to be risk factors for cervical cancer.¹¹

A cross sectional study conducted by Adoch W. and associates¹² exposed that, women (50%) with vaginal bleeding between menstrual periods, pelvic pain, and vaginal bleeding during/after sexual intercourse were found to be at risk for undergoing cervical cancer. A cross-sectional study published by Oringtho S. and associates¹³ revealed that women with early onset of sexual intercourse (15%), infection by the human papillomavirus (7%), and smoking (1.4%) were at risk for cervical cancer.

A significant association was found between risk factors of cervical cancer and age ($\chi^2 = 16.91$, $P < 0.05$), educational status ($\chi^2 = 95.4$, $P < 0.05$), family monthly income ($\chi^2 = 124.5$, $P < 0.05$), marital status ($\chi^2 = 24.1$, $P < 0.05$), occupation ($\chi^2 = 39.6$, $P < 0.05$) and type of diet ($\chi^2 = 21.9$, $P < 0.05$).

A retrospective study was conducted by Cetina Perez and associates¹⁴ to analyze the association between socio-demographic characteristics with survival rate in women with cervical cancer revealed that there was significant association ($P < 0.05$) between cervical risk factors and age and educational status. A record based retrospective study conducted by Aanchal Jain and associates¹⁵ revealed that risk for cervical cancer was found to be significantly associated ($P < 0.05$) with age and educational status. A prospective study conducted by Md. Jobair Khan and associates¹⁶ concluded that there was significant association

between cervical risk factors and age ($P<0.05$), educational status ($P<0.05$), marital status ($P<0.05$) and occupation ($P<0.05$) of women.

CONCLUSION

The study reveals that most of the women are at risk for getting cervical cancer. Prior screening and detection of risk factors can minimize and prevent the occurrence of cervical cancer among women.

It is recommended that future research can investigate the knowledge and awareness on cervical cancer to minimize the morbidity of cervical cancer and focus on women while visiting the community and should educate them regarding prevention of cervical cancer.

Declaration by Authors

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