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A Study to Assess the Knowledge Regarding Warning Signs of Cervical Cancer Among Women at a Tertiary Care Teaching Hospital, Kuppam

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Abstract: Cervical cancer remains a major public health concern, and early detection through awareness of warning signs is crucial for prevention. This study aimed to assess the knowledge regarding warning signs of cervical cancer among women at a tertiary care teaching hospital in Kuppam and identify factors influencing their knowledge levels. A quantitative approach with a descriptive cross-sectional design was employed. The study was conducted among 95 women, selected through a convenient sampling method. Data were collected using a self-structured questionnaire. The findings revealed that 42.1% of women had adequate knowledge, 26.3% had moderate knowledge, and 31.6% demonstrated inadequate knowledge. Statistically significant associations were found between knowledge levels and education (Chi Square = 30.304, p < 0.001), occupation (Chi Square = 40.557, p < 0.001), number of children (Chi Square = 23.453, p = 0.001), type of family (Chi Square = 12.157, p = 0.016), access to healthcare facilities (Chi Square = 14.803, p = 0.022), and source of health information (Chi Square = 24.3, p = 0.002). The study highlights a significant gap in knowledge. Targeted health education programs are essential to improve women's knowledge and promote early detection.

Keywords: *Cervical Cancer; Knowledge; Women; Warning Signs; Health Education.*

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I. INTRODUCTION

Cervical cancer is a significant global public health issue, ranking as the fourth most common cancer in women worldwide, with an estimated 604,000 new cases and 342,000 deaths in 2020 alone [1]. Despite advancements in preventive measures like the Human Papillomavirus (HPV) vaccine and regular screening, it remains a leading cause of cancer-related mortality, especially in low- and middle-income countries (LMICs) [2]. In India, cervical cancer is the second most common cancer among women, accounting for nearly 17% of all cancer deaths in Indian women. The National Cancer Registry Programme (NCRP) reported approximately 96,922 new cases and 60,078 deaths in 2020 [3]. This high burden is attributed to low awareness, inadequate screening and vaccination coverage, and socio-cultural barriers limiting healthcare access [4].

Awareness and knowledge about the warning signs of cervical cancer are crucial for early detection and timely intervention, significantly reducing mortality [5]. Early-stage cervical cancer is often asymptomatic, making regular screening vital. When symptoms like abnormal vaginal bleeding, post-coital bleeding, pelvic pain, or unusual vaginal discharge occur, they necessitate prompt medical attention [6]. Knowledge levels are influenced by demographic factors such as age, education, socio-economic status, and healthcare access.

Cervical cancer continues to claim lives largely due to a lack of awareness about its warning signs and risk factors. Early detection improves survival rates, yet many women remain uninformed, leading to delayed diagnoses. In LMICs like India, where healthcare access and literacy vary widely, knowledge is often inadequate [7]. This study, therefore, aimed to assess the level of knowledge regarding warning signs of cervical cancer among women attending a tertiary care teaching hospital in Kuppam, a semi-urban area in Andhra Pradesh, India, and to explore the association between knowledge levels and selected demographic variables. Identifying these knowledge gaps and influencing factors can help tailor effective awareness and educational programs.

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II. MATERIALS AND METHODS

➢ *Research Approach and Design*

A quantitative, descriptive cross-sectional research design was employed.

➢ *Setting and Population*

The study was conducted at a tertiary care teaching hospital in Kuppam, Andhra Pradesh, India. The study population comprised women aged 18-45 years visiting the tertiary care teaching hospital.

➢ *Sample Size and Sampling Technique*

A sample size of 95 women was determined using Cochran's formula, considering an expected prevalence of adequate knowledge from a previous study and allowing for a 10% non-response rate. A convenient sampling technique was used.

➢ *Inclusion and Exclusion Criteria*

Women aged 18-45 years, willing to give informed consent, able to communicate in Telugu or English was included and women with a current diagnosis of cervical cancer, healthcare professionals, and women with cognitive impairments affecting their ability to respond were excluded.

➢ *Data Collection Tool*

A self-structured questionnaire was developed, consisting of two sections:

Section A: Demographic variables (age, education, occupation, family income, number of children, type of housing, marital status, type of family, access to healthcare, participation in health education programs, source of health information).

Section B: Knowledge regarding warning signs of cervical cancer (20 items). Each correct answer was scored as 1, and incorrect as 0. Knowledge scores were categorized as: Inadequate (0-10 points, 0-50%), Moderate (11-15 points, 51-75%), and Adequate (16-20 points, >75%).

➢ *Validity and Reliability*

Content validity of the tool was established through consultation with experts in nursing, medicine, and statistics. A pilot study was conducted on 10 women, which confirmed the feasibility of the tool and methodology. The reliability of the knowledge questionnaire was tested using Cronbach's Alpha, yielding a value of r = 0.71.

➢ *Ethical Considerations*

Ethical clearance was obtained from the Institutional Research Committee (IRC) & Institutional Human Ethics Committee of PESIMSR, Kuppam. Permission was obtained from the Medical Superintendent of PES Hospital and Principal of PES College of Nursing. Informed written consent was taken from each participant after explaining the study's purpose and ensuring confidentiality and anonymity.

➢ *Data Collection and Analysis*

Data were collected and analyzed using SPSS. Descriptive statistics (frequency, percentage) were used to describe demographic variables and levels of knowledge. Inferential statistics (Chi-square test) were used to determine the association between the level of knowledge and selected demographic variables. A p-value < 0.05 was considered statistically significant.

III. RESULTS

➢ *Demographic Profile of Participants*

A total of 95 women participated. Slightly more than half (50.5%) were aged >25 years. Nearly half (49.5%) had higher education, while 10.5% had no formal education. Homemakers constituted 49.5% of the sample, and 32.6% were professionals. The majority (84.2%) were married. Most families (58.9%) had a monthly income between ₹10,001-₹20,000. Regarding family structure, 42.2% had one child, and 52.6% lived in nuclear families. Most women (42.1%) had healthcare facilities within 1-5 km. A large majority (75.8%) had participated in health education programs, and the most common source of health information was Anganwadi workers (43.2%).

➢ *Knowledge Levels Regarding Nutritional Supplements*

The assessment of knowledge revealed that 42.1% (n=40) of women had an adequate level of knowledge, 26.3% (n=25) had a moderate level, and 31.6% (n=30) had an inadequate level of knowledge regarding the warning signs of cervical cancer.

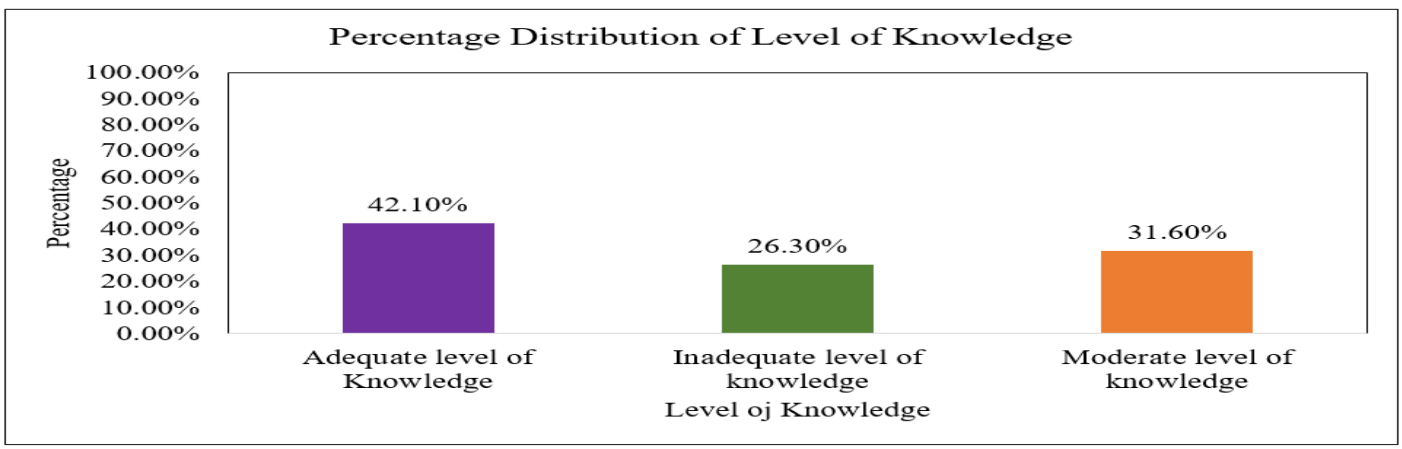

Fig 1 Knowledge Levels Regarding Nutritional Supplements

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- *Association between Knowledge Levels and Demographic Variables*

The Chi-square test revealed statistically significant associations between the level of knowledge and several demographic variables. These included education level (χ^2=30.304, p<0.001), occupation (χ^2=40.557, p<0.001), number of children (χ^2=23.453, p=0.001), type of family (χ^2=12.157, p=0.016), access to healthcare facilities (χ^2=14.803, p=0.022), and source of health information (χ^2=24.3, p=0.002). No significant association was found between knowledge level and age (χ^2=3.123, p=0.21), marital status (χ^2=1.381, p=0.847), family income (χ^2=6.477, p=0.372), type of housing (χ^2=4.288, p=0.368), or participation in health education programs (χ^2=0.935, p=0.627).

IV. DISCUSSION

This study aimed to assess the knowledge regarding warning signs of cervical cancer among women in Kuppam and identify associated demographic factors. The findings indicate a considerable knowledge gap, with nearly one-third (31.6%) of women demonstrating inadequate knowledge and another quarter (26.3%) having only moderate knowledge. This is concerning, as adequate knowledge is a prerequisite for early detection and seeking timely medical intervention, which are crucial for improving cervical cancer outcomes [8]. Similar studies in India and other LMICs have also reported varying but often suboptimal levels of awareness about cervical cancer [4, 7, 9].

The significant association between higher education levels and better knowledge underscores the role of education in health literacy and awareness [10]. Women with professional occupations also exhibited higher knowledge, likely due to better access to information and potentially higher educational attainment. This aligns with findings that occupation can influence health-seeking behaviors and knowledge [11].

Interestingly, women with only one child demonstrated significantly higher knowledge. This could be attributed to increased interaction with healthcare services during antenatal and postnatal periods for their first child, providing more opportunities for health education. Women living in nuclear families also had better awareness compared to those in joint families, possibly reflecting greater autonomy in decision-making and information seeking.

Access to healthcare facilities within a short distance (≤1 km) and receiving health information from healthcare providers were positively associated with better knowledge. This highlights the critical role of accessible healthcare services and healthcare professionals as primary sources of credible health information [12]. The finding that Anganwadi workers were a common source of information, yet not always associated with the highest knowledge levels, suggests a need to strengthen their training and resources for cancer education.

The lack of significant association with age, marital status, family income, housing type, and even participation in health education programs (in this study) suggests that these factors alone may not directly impact knowledge levels, or that existing health education programs may not be effectively targeting cervical cancer awareness or reaching all demographic segments. It emphasizes the need for more specific, targeted, and effective educational interventions rather than general health programs.

V. CONCLUSION

The study reveals a critical gap in knowledge regarding cervical cancer warning signs among women in Kuppam, with nearly a third possessing inadequate knowledge. Education, occupation, number of children, type of family, access to healthcare, and source of health information were significantly associated with knowledge levels. Women with higher education, professional occupations, fewer children, those in nuclear families, with easy access to healthcare, and who received information from healthcare providers demonstrated better awareness. These findings underscore the urgent need for targeted educational interventions, particularly for less educated, unemployed, and rural women. Strengthening community outreach, integrating awareness programs into routine healthcare visits, and leveraging healthcare providers as key educators are crucial steps to bridge the knowledge gap and promote preventive healthcare behaviors for cervical cancer.

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