

Awareness and Perceptions of Cervical Cancer among Rural Women of Reproductive Age in Tamil Nadu: A Cross-Sectional StudyK J Jeevitha^{1*}, Kavitha. G², R. Rajakeerthana³¹MBBS DNB (OG) MNAMS, Assistant Professor, Department of Obstetrics & Gynecology, Velammal Medical College Hospital²Professor, Department of Obstetrics & Gynecology, Velammal Medical College Hospital³Assistant Professor, Department of Obstetrics & Gynecology, Velammal Medical College Hospital

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Abstract:

Introduction: Cervical cancer ranks as the second most frequently detected cancer and the third highest cause of cancer mortality among women on a global scale. Developing nations bear the brunt of this burden, with approximately 83% of new cases and 85% of related deaths occurring in these regions. The primary culprit behind cervical cancer is the human papillomavirus (HPV), a sexually transmitted pathogen that can be mitigated through measures such as practicing safe sex and vaccination. The objective of this study was to evaluate the awareness and perspectives of women of reproductive age regarding cervical cancer.

Methods: A cross-sectional study was conducted within a community setting, utilizing an interviewer-administered questionnaire for data collection. The selection of study participants employed a multistage sampling technique. Descriptive statistics, including frequency, mean, and percentage, were computed using SPSS version 20 software for data analysis.

Results: A total of 270 women (n = 270) enthusiastically participated in the study, resulting in a commendable 100% response rate. Despite the high participation, only 65.1% claimed to have heard about cervical cancer. The alarming revelation was that over 80% of these women lacked awareness that Human Papillomavirus (HPV) serves as a causative agent for cervical cancer. This is particularly concerning, given that preventing cervical cancer hinges on thwarting HPV infections. Among those who were familiar with cervical cancer, a mere 21.4% had knowledge of the Pap smear test, with an even smaller fraction (43.9%) understanding that an apparently healthy woman should undergo the test at least three times in her life. This highlights a significant gap in information, not just about the test itself but also regarding its recommended frequency. In essence, only 19.87% of the participants demonstrated a satisfactory level of knowledge concerning cervical cancer and its prevention.

Conclusion: The collective understanding of women regarding cervical cancer was found to be insufficient. However, among those who were acquainted with the subject, their attitudes were relatively positive. Notably, mass media emerged as the primary conduit of information. It is crucial to recognize that addressing public health challenges requires a comprehensive approach. Therefore, it is advisable to launch extensive awareness campaigns to enhance knowledge and foster a proactive stance towards cervical cancer.

Keywords: Reproductive age group women, Knowledge, Attitude, Cervical Cancer.

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Introduction

Cervical cancer, affecting the cervix—the link between the uterus and vagina—is primarily attributed to the human papillomavirus (HPV), a sexually transmitted pathogen. Consequently, implementing successful interventions to prevent HPV infections can serve as an effective strategy to avert the development of cervical cancer [1,2].

Despite being largely preventable, cervical cancer ranks as the third most prevalent cancer among women worldwide, following breast and colorectal cancer [3]. Sadly, the burden of this disease falls disproportionately on women from economically

disadvantaged communities. Developing countries bear the brunt, with approximately 83% of new cases and 85% of cervical cancer-related deaths occurring in these regions¹. Guinea has reported the highest incidence rate, with nearly 6.5% of women developing cervical cancer before the age of 75, predominantly affecting those under 45 years old [3].

Notably, cervical cancer stands as the primary cause of cancer-related deaths in Eastern and Central Africa. However, the majority of these fatalities could be prevented through widespread

access to comprehensive cervical cancer prevention and control initiatives. Such programs encompass HPV vaccination for all girls and screening coupled with treatment for pre-cancer among at-risk women [3].

The study implies that the swift socioeconomic transition observed in numerous countries could potentially lead to a decline in infection-related cancers. However, this decline might be offset by a rise in new cases linked to reproductive, dietary, and hormonal factors [1]. Developed countries exhibit a relatively low burden of cervical cancer, but the scenario is starkly different in developing nations. While the incidence of cervical cancer is diminishing in the former, it is on the rise in the latter [4].

Diverse studies conducted in various countries reveal disparities in women's awareness and attitudes concerning cervical cancer and its prevention. Notably, unlike their counterparts in developed nations, women in developing countries exhibit a lower level of knowledge regarding cervical cancer and its preventive measures. Moreover, certain studies establish a notable direct correlation between women's knowledge and attitudes towards cervical cancer prevention and their subsequent utilization of Pap smear tests.

Cervical cancer screening rates are consistently reported to be significantly low across various studies conducted in low and middle-income countries. This study sought to evaluate the knowledge and attitudes of women of reproductive age regarding cervical cancer and its prevention within rural communities in Tamil Nadu.

Material and Methods:

Study design and Setting: A community based cross-sectional study was carried out in rural areas of Madurai, Tamilnadu. The study populations were all reproductive age group (18 Years to 49 years) women in the study area were included in the study. Sample size was calculated via meticulous process, the estimated prevalence rate, desired 95% confidence level, precision and 5% margin error the final sample size calculated was 270. A multistage sampling technique was used to randomly select villages. Finally, a systematic random sampling technique was employed to select study participants.

Data Collection and analysis: A modified and well-structured interviewer-administered questionnaire, which had undergone pretesting, was utilized for data collection. Initially prepared in English, the questionnaire was translated into the local language, and then back-translated into English to ensure consistency. Correct responses to knowledge and attitude questions were scored, with each accurate answer earning 1 point. The scores

were later transformed into percentages for result interpretation. Mean scores served as a threshold to categorize the women's level of knowledge and attitude concerning cervical cancer and its prevention.

Data processing and analysis involved several steps. The data were coded and entered into a computer using Epi-collect software, followed by exportation to SPSS Version 21 for further analysis. To ensure accuracy, the data underwent thorough processing and cleaning to rectify entry errors, identify outliers, and address missing values. Subsequently, descriptive statistics such as frequency, mean, and percentage were computed using SPSS version 21 software program for the study variables.

Participant knowledge was evaluated by comparing their scores to the mean score level, with those equal to or above considered to have a good level of knowledge, while those below were categorized as having poor knowledge. Similarly, attitudes were assessed using the mean score level, with scores equal to or above indicating a favourable attitude, and scores below indicating an unfavourable attitude towards cervical cancer and its prevention. The findings were then summarized and presented through textual explanations and tabular representations.

Ethical Consideration: The study was conducted with adherence to ethical principle. Ethical approval from institute ethical committee was obtained. Informed and written consent were obtained from the study participants.

Results

Two hundred and seventy women ($n = 270$) enthusiastically took part in the study, resulting in a commendable 100% response rate. The age distribution revealed that 35.3% of participants fell within the 24–32 age group. Regarding religious affiliation, 86.8% identified as Orthodox followers, while 11.7% identified as Muslims. In terms of marital status, 54.5% of participants were married. Additionally, 10.6% of participants reported being unable to read and write. In this study, it was observed that 65.1% of the participants, totalling 176 individuals, were aware of cervical cancer. Among those familiar with cervical cancer, the majority (41.1%), which is 111 participants, obtained their information through mass media. The average knowledge score was 3.13 (Standard deviation = 3.27), with a median of 2. Notably, only 19.25% (52 participants) demonstrated a commendable level of knowledge regarding cervical cancer and its prevention.

When questioned about knowledge of risk factors for cervical cancer among the 176 participants who had heard about it, 59.09% (104 individuals)

admitted not knowing these factors. Various risk factors, such as sexually transmitted diseases, smoking, engaging in sexual activity with multiple partners, family history of cervical cancer, and frequent childbirths, were queried.

Astonishingly, a significant proportion (81.25%, or 143 participants) were unaware of whether cervical cancer is caused by the Human Papillomavirus

(HPV). Similarly, 79% (140 participants) of those who were aware of cervical cancer claimed ignorance about its symptoms.

Common symptoms, such as intra or post-coital bleeding, bleeding after menopause, persistent blood-stained vaginal discharge, and lower abdominal pain, were assessed.

Table 1: Knowledge of participants about cancer cervix

Variable	Frequency	%
Aware of cervix cancer		
Yes	176	65
No	94	35
Do you know about Risk Factors of Cancer cervix		
Yes	72	31
No	104	59
Causative agent of Cancer cervix		
Yes	33	19
No	143	81
Symptoms of cancer cervix		
Yes	36	21
No	140	79

Regarding prevention and treatment, only 59.6% (105 participants) believed cervical cancer is preventable, and 40% (70 participants) believed it is curable.

In terms of screening tests, out of the 176 participants who were aware of cervical cancer, merely 20.45% (36 individuals) were familiar with the Pap smear test. Of those aware of the Pap smear test, less than half (47.2%, or 17 participants) understood that an apparently healthy woman should undergo the test at least three times in her life. The mean attitude score was calculated to be

3.86. Among participants who were aware of cervical cancer, a significant portion (70.45%, or 124 individuals) acknowledged that having multiple sexual partners is a risk factor for cervical cancer. Additionally, over two-thirds (68.1%, or 120 individuals) believed that being HIV positive can elevate the risk of developing cervical cancer.

Conversely, the majority (85.2%, or 150 participants) did not perceive the use of oral contraceptive pills as a risk factor for cervical cancer.

Table 2: Attitude of participants about cancer cervix

Variable	Frequency	%
Cancer cervix is preventable		
Yes	105	60
No	71	40
Cancer cervix is curable		
Yes	70	40
No	106	60
Screening test (PAP smear)		
Yes	36	20
No	140	80

Concerning early marriage, 62.5% (110 participants) of those aware of cervical cancer identified it as a potential risk factor. Similarly, 76.1% (134 participants) recognized cervical cancer as a significant health concern for women of reproductive age, while 48.8% (86 participants) believed that cervical cancer cannot be detected through early screening before symptoms manifest. However, a vast majority (92%, or 162

participants) acknowledged the benefits of early detection for treatment outcomes. Regarding prognosis, 60% (106 participants) of respondents believed cervical cancer to be incurable, while the remaining 40% (70 participants) expressed optimism about its curability. Overall, the study found that more than half (65.3%, or 115 participants) exhibited a positive attitude toward cervical cancer and its prevention efforts.

Discussion

The study findings indicate that a substantial majority, comprising 65.1% or 176 participants, were familiar with cervical cancer. Similar results were observed among studies conducted in developing and underdeveloped countries. While these figures suggest positive strides in disseminating information about cervical cancer in these countries, it is essential to note that awareness alone may not translate into comprehensive knowledge, as evidenced in both the current study and the aforementioned ones. [4] Another study conducted by Chande and Kassim showed that more than 3-quarters of population had heard about Cervical Cancer. [5] Mass media emerged as the predominant source of information, with 41.1% of participants citing it.

In this study, a mere 21% (36 participants) of those who were aware of cervical cancer asserted that they were acquainted with its symptoms. Similarly, findings from a study, it is indicated that 79% of females recognized vaginal bleeding between menstrual cycles as a symptom of cervical cancer, while 66% identified foul-smelling vaginal discharge as a symptom. [6] Shah et al. [7] reported that 94.2% of respondents identified vaginal discharge, 86.9% identified menstrual irregularities, and 66.6% identified pain as symptoms of cervical cancer. Additionally, in a study involving 403 women, found that 64.2% possessed some knowledge about signs and symptoms of cervical cancer. [8,9] The lack of awareness among women residing in both rural and urban areas underscores the necessity for awareness campaigns aimed at enhancing knowledge about symptoms, risk factors, and preventive measures related to cervical cancer. Increased awareness among women regarding cervical cancer is crucial, as it can lead to proactive measures such as seeking medical attention and undergoing early screening. [12]

Concerning risk factors, among those familiar with cervical cancer, 59% (104 participants) does not know about the risk factors for the development of cervical cancer. Similarly, a mere 21% (36 participants) of those aware of cervical cancer were knowledgeable about Human Papillomavirus (HPV) as a causal factor for cervical cancer, reflecting a notably low level of awareness. A prevalent theme in the literature underscores a disparity between knowledge of cervical cancer and the actual utilization of screening services among community women. While a considerable number of women are familiar with cervical cancer, fewer possess awareness of its symptoms, and even fewer have undergone any form of screening. Nevertheless, despite the low uptake, many women exhibit a positive attitude and express willingness to undergo screening. In a study, participants

expressed belief in the effectiveness of early screening and HPV vaccination in preventing cervical cancer; however, despite this belief, the majority of women (86.6%) had never undergone screening. [10] Our review revealed that only 8% of females were aware of HPV vaccination as a preventive measure for cervical cancer. [14] It is imperative for governments in low- and middle-income countries (LMICs) and health development agencies to make population-based HPV vaccinations readily accessible, alongside conducting awareness campaigns to educate the community about the role of HPV in the development of cervical cancer. Otherwise, practices aimed at preventing cervical HPV infections, such as vaccinations, delaying sexual activity, and limiting the number of sexual partners, may not receive adequate attention from the community.

Conclusion

Despite the fair knowledge and positive attitudes towards cervical cancer and screening observed among Indian women, a crucial gap exists in translating this awareness into practical implementation. There is an urgent need for India to enhance its health system capacity to establish an effective cervical cancer screening program. Additionally, community-level initiatives are essential to enhance knowledge about cervical cancer and screening programs. These collective efforts are crucial in preventing a significant calamity, potentially saving thousands of young women and their families from the impact of cervical cancer.

References

1. World Health Organization (WHO). Comprehensive Cervical Cancer Control. A guide to essential practice. Geneva: WHO; 2006.
2. Underwood SM, Ramsay-Johnson E, Dean A, Russ J, Ivalis R. Expanding the scope of nursing research in low resource and middle resource countries, regions, and states focused on cervical cancer prevention, early detection, and control. *J Natl Black Nurses Assoc JNBNA*. 2009; 20(2):42.
3. Arbyn M, Castellsagué X, de Sanjosé S, Bruni L, Saraiya M, Bray F, et al. Worldwide burden of cervical cancer in 2008. *Ann Oncol*. 2011; 22(12):2675–86.
4. Anorlu RI. Cervical Cancer: the sub-Saharan African perspective. *Reprod Health Matters*. 2008; 16(32):41–49.
5. Chande HM, Kassim T. Assessment of women's knowledge and attitude towards carcinoma of the cervix in Ilala Municipality. *East Afr J Public Health*. 2010. Mar 1; 7(1):74–77.
6. Singh S, Narayan N, Sinha R, Sinha P, Sinha V, Upadhye J. Awareness about Cervical Can-

- cer risk factors and symptoms. *Int J Reprod, Contracept, Obstetr Gynecol.* 2018; 7(12):4987-4991. doi:10.18203/2320-1770.ijrcog20184953
7. Shah V, Vyas S, Singh A, Shrivastava M. Awareness and knowledge of Cervical Cancer and its prevention among the nursing staff of a tertiary health institute in Ahmedabad, Gujarat, India. *Ecancermedicalsience.* 2012;6:270
 8. Narayana G, Suchitra MJ, Sunanda G, Ramaiah JD, Kumar BP, Veerabhadrapa KV. Knowledge, attitude, and practice toward cervical cancer among women attending obstetrics and gynecology department: a cross-sectional, hospital-based survey in South India. *Indian J Cancer.* 2017; 54(2):481.
 9. Dhodapkar S, Chauhan R, Thampy S. Knowledge and awareness of Cervical Cancer and its prevention among nursing staff of a tertiary care teaching institute in South India. *Int J Reprod, Contracept, Obstetr Gynecol.* 2014; 3(4):1056
 10. Arulogun OS, Maxwell OO. Perception and utilization of cervical cancer screening services among female nurses in University College Hospital, Ibadan, Nigeria. *Pan African Medical Journal.* 2012; 11:69.
 11. Gokhale S, Rajaram A, Pai G, George LS. Factors affecting cervical cancer screening in a tertiary hospital in South India: A qualitative study. *Indian Journal of Cancer.* 2017; 54(2):636-640.
 12. Hariprasad R, Krishna S, Krishnaprasad R, Gupta S. Knowledge, awareness and prevention of cervical cancer among women attending a tertiary care hospital in Puducherry, India. *Journal of Clinical and Diagnostic Research.* 2014; 8(6):OC01-OC03.
 13. Kamarudin R, Shah SA, Hatta S, Abdul Manaf R, Abdul Manaf NH, Omar J, et al. Factors affecting the uptake of cervical cancer screening among nurses in Malaysia. *International Journal of Gynecological Cancer.* 2012; 22(5):807-813.
 14. Shastri SS, Dinshaw K, Amin G, Goswami S, Patil S, Chinoy R, et al. Concurrent evaluation of visual, cytological and HPV testing as screening methods for the early detection of cervical neoplasia in Mumbai, India. *Bulletin of the World Health Organization.* 2005; 83(3):186-194.