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A study to evaluate the knowledge regarding the management of cervical cancer among women in selected rural areas of Pune district

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Abstract
Introduction: Paradise lies under the feet of mother - From this, we can judge women's respect and importance in our life and society. Women are the basic unit of our society. They play their roles with great responsibilities in the upbringing of a healthy solid society. A good solid society is a good harbinger of development. For this reason, at least, society should start considering their situation and health problems more carefully. Two major classifications of the disease impose a large burden on human health. These are communicable and non-communicable diseases. Cervical carcinoma is one of the most common and dreaded diseases of women, and in India, it accounts for 16 per cent of total cervical cancer cases occurring globally. The situation is more alarming in the rural areas where the majority of women are illiterate and ignorant about the hazards of cervical cancer.
Methods: This was a questionnaire-based cross-sectional study conducted among the women. A semi-structured questionnaire was developed. After obtaining permission from the Institutional Ethics Committee, the questionnaire was administered to the women in the language of their preference. Women were educated after the data collection and a hand-out was provided. Data was analyzed using SPSS Version 10. Independent 't' test was used to compare mean knowledge scores across sociodemographic groups. 400 samples for the study were selected by using a non-probability convenient sampling technique.
Results: Baseline knowledge analysis revealed that a considerable proportion of participants had poor knowledge (33%) about cervical cancer, indicating a lack of understanding and awareness.
Conclusion: The knowledge of participants is poor about cervical cancer. This finding is consistent with previous studies that have identified knowledge gaps among women regarding cervical cancer.

Keywords: Nursing interventional package, screening, treatment, cervical cancer

Introduction

The fundamental unit of our cultural system is the woman. They carry out their duties with heavy responsibility in the development of a strong, wholesome community. Society needs to start paying more attention to their circumstances and health issues if nothing else. The illness that has a significant negative impact on human health may be divided into two main categories. These illnesses are both communicable and non-communicable [1].

Non-communicable diseases (NCDs), often known as chronic illnesses, are defined by a prolonged course and a combination of behavioral, and physiological, matters as genetic factors. The most common types of noncommunicable diseases (NCDs) include diabetes, cancer, heart attacks, strokes, and chronic respiratory problems such as asthma and a condition called chronic obstructive pulmonary disease [2]. 31.4 million NCD fatalities worldwide take place in these countries. NCDs impact people of all ages, in all nations, and all places. Despite having been shown that NCDs are often linked to older age groups, statistics indicate that 17 million deaths from these illnesses happen before they reach the age of 70. 86% of these unanticipated fatalities are thought to occur in low- to middle-income nations [3]. Non-communicable diseases (NCDs) are associated with risk factors such as bad eating habits, tobacco smoke exposure, excessive alcohol use, and physical inactivity. These factors may affect people of any age [4].

Carcinoma of the uterine cervix is a major health problem faced by Indian women, and every year, approximately 120,000 women develop this disease [5]. India accounts for 15.2 percent of the total cervical cancer deaths in the world [6].

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Need of the study

About 41 million fatalities annually are attributed to non-communicable diseases (NCDs); 15 million of those fatalities are classified premature (occurring before the age of 70), whereas more than 85% of the deaths occur in low- and middle-income countries [7]. In India, non-communicable diseases (NCDs) account for 62% of all fatalities; avoidable premature deaths, which are responsible for a startling 48% of all deaths, are especially concerning [8]. In 2016, cancer, diabetes, urogenital, blood, and endocrine disorders, chronic respiratory disorders, and cardiovascular illnesses were the major causes of death from noncommunicable diseases. Results from the Disease Burden Initiative at the state level in India show large rises in the rates of disability-adjusted life years for two particular NCDs, ischemic heart disease and diabetes, between 1990 and 2016 [9].

Unlike many cancers, cervical cancer can be prevented. This is because the cervix is easily accessible. This prevention can be achieved using relatively inexpensive technologies to detect abnormal cervical tissue before it progresses to invasive cervical cancer. Most developed countries like the United States saw dramatic reductions in the incidence and death rates from cervical cancer following the implementation of organized screening programs. Accessibility to treatment, early detection, reduction in parity, and other risk factors have contributed to this decline. It has been estimated that only about 5% of women in developing countries have been screened for cervical dysplasia in the past five years, compared with about 85% in developed countries [10].

Its impact on the lives of women worldwide is indisputable. It is the second leading cause of death from cancer among women in developing countries [11].

Aim of the study

This study aims to evaluate the knowledge levels regarding the management of cervical cancer among women residing in selected rural areas of Pune district.

Materials and Methods

Descriptive Survey Approach was considered as the appropriate measure to assess the level of knowledge regarding cervical cancer among women. The objective was to assess the level of knowledge regarding cervical cancer management among women in rural areas. A questionnaire-based cross-sectional study design was used. The study's samples were women who resided in a specified rural area of the Pune District and satisfied the selection criteria. The study's primary goal was to gather a large sample that would demonstrate statistical significance while still being cost-effective. 400 samples for the study were selected by using a non-probability convenience sampling technique, taking into account the investigator's sample knowledge of the PHC and the availability of time.

Population and Sample: The primary objective was to secure a sample size that was sufficiently sizable to demonstrate statistical significance while also maintaining practical efficiency. Taking these factors into account, 400 women between the ages of 25 and 50 were chosen as the sample size. This selection was based on factors such as time constraints, as well as the investigator's familiarity with the Primary Health Care Center, and the accessibility of potential participants.

Tool Description The study tool was divided into 2 parts:
Part A: Demographic variable questionnaire
Part B: Survey instrument designed to assess the knowledge of the management of cervical cancer.

Data Collection: Selected the target population of women in the selected rural area of Pune district. Obtained ethical approval and informed consent from the participants. Developed a structured questionnaire that assesses knowledge management of cervical cancer. Finally, the baseline information on knowledge about the management of cancer of the cervical cavity was collected.

Results

In the present study, the demographic variables were collected and analyzed to gain insights into the surveyed population. When it came to age, 182 participants, or 45.5% of the sample, were in the 18-29 age range, which included the bulk of participants. The next significant age group was 30-39 years, with 97 participants, making up 24.25% of the total. Additionally, 104 participants (26%) were aged between 40-49 years, while 11 (2.75%) were in the 50-59 years range. A smaller proportion, comprising 6 individuals (1.5%), were aged 60 years or above.

Regarding education, the survey found that the largest segment of participants had completed primary education, with 167 individuals (41.75%) falling into this category. The secondary education group consisted of 129 individuals (32.25%), while 84 participants (21%) had graduated from college. A smaller proportion, representing 20 individuals (5%), had pursued post-graduate studies.

When it came to occupation, the survey participants were primarily housewives, with 198 individuals (49.5%) identifying as such. Business-related occupations accounted for 133 participants (33.25%), and 69 individuals (17.25%) reported being retired.

The survey also gathered information about family income. The majority of participants (44%) reported a family income between 25,000 and 49,999, totaling 176 individuals. 51 participants (12.75%) reported a family income below 24,999, while 95 individuals (23.75%) fell into the 50,000 - 74,999 income range. A smaller proportion, consisting of 25 individuals (6.25%), reported a family income between 75,000 and 99,999. The highest income category, comprising 53 individuals (13.25%), represented those with a family income of 100,000 or more.

Regarding marital status, 254 people (63.5%) were single, making up the bulk of participants. The married group consisted of 122 individuals (30.5%), while a smaller proportion of participants were either widowed (12 individuals, 3%), divorced (12 individuals, 3%), or separated (0 individuals).

Regarding sexual orientation, the vast majority of participants identified as heterosexual, with 395 individuals (98.75%) reporting this orientation. A small percentage of participants identified as lesbian (5 individuals, 1.25%), while none identified as bisexual or other.

In terms of insurance status, 188 participants (47%) reported having private insurance, while 94 individuals (23.5%) were covered by Medicare. An additional 104 participants (26%) reported having medi-claim, and 14 individuals (3.5%) were uninsured. None of the participants fell into the "other"

category.

Primary language usage varied among the participants, with 195 individuals (48.75%) reporting Marathi as their primary language, followed closely by Hindi, which was reported by 181 participants (45.25%). A smaller percentage reported English as their primary language (19 individuals, 4.75%), and a minority reported other languages (5 individuals, 1.25%).

Regarding access to healthcare services, the majority of participants (43.75%) reported easy access, with healthcare facilities located within 30 minutes of their home or

workplace. A moderate level of access, within an hour of home or work, was reported by 112 individuals (28%). A smaller proportion (23.25%) reported limited access, with healthcare facilities located more than an hour away. A minority of participants (10 individuals, 2.5%) reported having no access to healthcare services.

Finally, the survey assessed family history of any type of cancer, with 382 participants (95.5%) reporting no family history of cancer, while 18 individuals (4.5%) reported a positive family history of cancer.
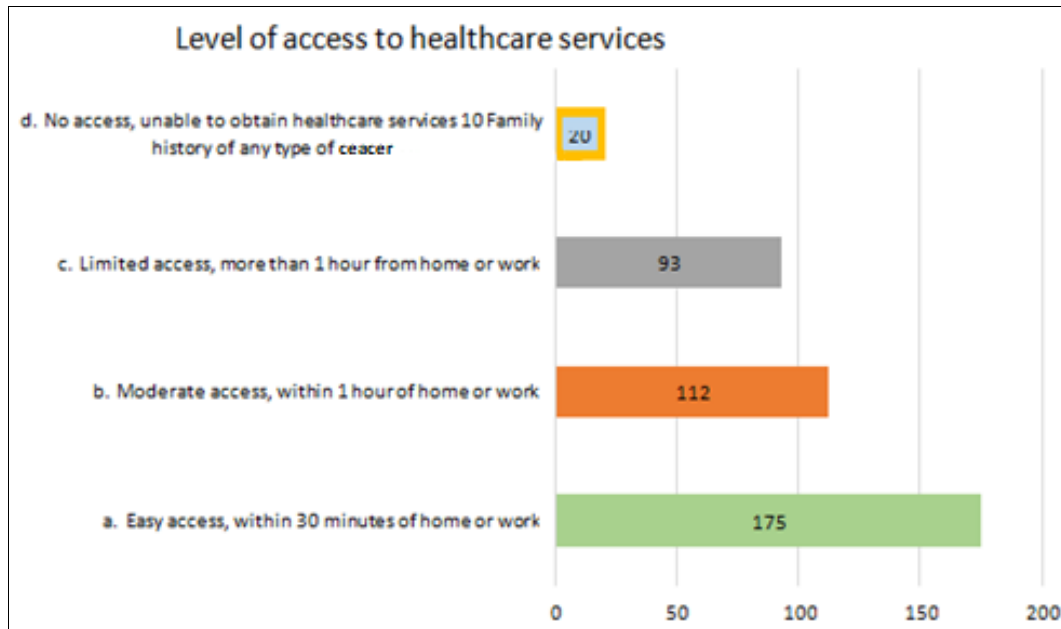

Fig 1: Bar graph showing the level of access to Healthcare services

Table 1: Analysis of data related to baseline knowledge regarding screening and treatment of cervical cancer among women before intervention

Baseline Knowledge	Frequency	Percentage
Poor Knowledge	132	33
Average Knowledge	176	44
Good Knowledge	109	27.25
Mean	12.73	
SD	8.60	

The findings of analyzing women's pretest expertise on cervical carcinoma screening and treatment prior to intervention demonstrate the following:

- Limited information: Of the participants, 132 (33%) lacked sufficient knowledge on cervical tumor screening and care.
- Average Knowledge: Of the participants, 176 individuals (44%) have average knowledge about the subject.

Good Knowledge: According to the statistics, 109 individuals (27.25%) had adequate knowledge about cancer of the cervical cavity screening and care.

Furthermore, the average score for all participants on the pretest knowledge was determined to be 12.73, which represents the mean score. The degree of dispersion or variability of the scores above the mean was represented by the standard deviation (SD), which was computed to be 8.60. These findings suggest that a significant portion of

women exhibited either poor or average knowledge about the diagnosis and treatment of cervical cancer.

Descriptive statistics to compare categories of pretest knowledge regarding management of cervical cancer among women

Table 2: Descriptive statistics to compare categories of baseline knowledge regarding the management of cervical cancer among women

Pretest knowledge Categories	Frequency	Mean	Median	S.D.	Min value	Max value
Poor Knowledge	132	2.74	3.0	1.904	0	7
Average Knowledge	176	11.65	13.00	2.524	8	14
Good Knowledge	109	24.97	25.0	0.164	24	25
Overall pretest knowledge score		12.73	12.00	8.60	0	25

There were three categories of women's pretest awareness regarding the disease's screening and treatment: Poor Knowledge, Average Knowledge, and good knowledge.

The Poor Knowledge category consisted of 132 participants. On average, these participants had a pretest knowledge score of 2.74, demonstrating a very low level of understanding of cervical cancer detection and treatment. The median score for this category was 3.0, suggesting that about half of the participants scored below this value. The standard deviation of 1.904 indicated a considerable variability in the scores within this category. The range of scores ranged from 0 as the minimum to 7 as the maximum,

reflecting the limited knowledge and diverse performance among participants in this category.

The Average Knowledge category included 176 participants. On average, these participants achieved a pretest knowledge score of 11.65, representing a moderate level of understanding. The median score for this category was 13.00, indicating that half of the participants scored above this value. The standard deviation of 2.524 suggested a moderate level of variability in scores within this category. The range of scores for the Average Knowledge category extended from a minimum of 8 to a maximum of 14, showing a relatively wider spread of scores compared to the Poor Knowledge category.

There were 109 individuals in the Good Knowledge group that demonstrated a deep understanding of cervical cancer screenings and care. These participants obtained an impressive average pretest knowledge score of 24.97. The median score for this category was 25.0, indicating that most participants achieved near-perfect scores. The standard deviation of 0.164 revealed a minimal variability in scores within this category, highlighting the consistency of knowledge among participants. The Good Knowledge category has a minimum score of 24 and a maximum score of 25. Narrow scoring range that demonstrated the high degree of expertise and knowledge shown by participants in this area.

With a median rating of 12.00, the total pretest understanding rating for all participants was determined to be 12.73. The 8.60 standard deviation suggested significant variation in all knowledge areas. The whole range of results, which went from 0 to 25, represented the variety of expertise among the participants.

Descriptive statistics-wise, the item assessment displays women's pretest knowledge on cervical cancer diagnosis as well as treatment. There were three categories of women's pretest awareness regarding the disease's screening and treatment: Poor Knowledge, Average Knowledge, and Good knowledge.

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Relationship between the demographics that women choose and their knowledge about cervical cancer testing and therapy

The analysis finds that age group ($p < 0.05$), family income ($p = 0.01$), marital status ($p = 0.02$), primary language ($p = 0.01$), degree of access to healthcare services ($p = 0.006$), and the awareness of women about cervical cancer prevention and treatment is substantially connected with a family history of any kind of cancer ($p = 0.01$). These results demonstrate how crucial it is to take these demographic factors into account when diagnosing, treating, and educating the public about cervical cancer.

Discussion

A baseline examination of participants' knowledge for this study revealed that 33% had very little information regarding cervical cancer detection and management. This result is consistent with earlier research on cervical cancer, which has frequently shown poor awareness levels. Similar results were obtained in their research, where the majority of participants showed inadequate awareness of cervical cancer. These results suggest a common knowledge gap among women about cervical cancer, demonstrating the need for focused educational initiatives. This finding is in line with North Korea's study in which less than 40% were aware of the symptoms of cervical cancer. This consistency might be because, the overall level of knowledge between the two studies was inadequate. It might be also due to the lack of health education programs regarding cervical cancer which is believed to be the problem of most developing countries [12].

According to the baseline knowledge study, 33% of participants knew very little about cervical cancer, which suggests that they were not aware of the disease or understood it. This conclusion aligns with other research identifying women's awareness gaps about cervical cancer. However, there was a notable increase in knowledge levels after the nurse interventional package's deployment [13]. The majority of those surveyed (94%) showed strong knowledge, whereas the fraction of those with weak understanding dropped significantly to 3.5%. These outcomes demonstrate how well the intervention addressed and filled up any misunderstandings or knowledge gaps. This result is in line with research on a different illness by, in which a comparable percentage of individuals showed inadequate understanding. These findings imply that, regardless of the particular illness under investigation, a dearth of understanding and appreciation may be

widespread among the community examined. The results highlight the need of educational activities to close knowledge gaps and dispel common misunderstandings about the aforementioned condition as well as cervical cancer [14].

Conclusion

The survey revealed that nearly all of the participants had negative views on cervical cancer diagnosis and therapy. A lack of understanding about the need for early detection and treatment, social standards, or cultural norms may be the root cause of this negative mindset.

Most of the women had poor knowledge and had not undergone screening for cervical cancer. As mass media was the common source of information, they could be used to raise the awareness of women to promote early detection. There is a need for community-based studies to know the practices of doctors and assess [1]: If they are educating the women about cervical cancer and its screening [2]. Whether they offered screening services to the eligible women who consulted them for any other health problem. Mass media was the major source of information regarding cervical cancer. However, any public health problem cannot be solved in isolation. Thus, governmental and non-governmental organizations and other concerned bodies need to work in collaboration to increase the level of women's general awareness of cervical cancer and its prevention. Besides, the government should work on collaborating health institutions with other sectors on awareness creation campaigns. There is also a need for educational intervention and awareness programs not only to augment HPV immunization programs but also to screen for primary prevention and control of cervical cancer in India.

Conflict of Interest
None

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