Original Article

Cervical Cancer Screening Uptake and HPV Vaccine Awareness in Reproductive-Age Women A cross-sectional study.

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ABSTRACT

Background: Globally persistent high-risk HPV infection is the primary cause of cervical cancer, which is a major cause of morbidity and mortality among women. Regular screening and prevention of the disease by vaccination against HPV helps to reduce the disease burden to a considerable extent. Nonetheless, cultural, educational and socioeconomic factors have led to poor awareness, uptake of screening and vaccination in most populations. An assessment of these practices may be used to guide specific interventions to enhance reproductive health outcomes among women.

Objective: To examine practice of screening cervical cancer, understanding of HPV vaccination and its uptake, and factors that affect preventive behavior among women of reproductive age.

Methods: 100 reproductive-age women (15-49 years) were observed to participate in a cross-sectional study in an outpatient clinic. Structured questionnaires with sociodemographic information, screening history and knowledge of HPV vaccination were used to collect data. Frequencies and percentages were analyzed by descriptive statistics, and associations were evaluated using chi-square tests and logistic regression. All participants had their ethical approval and informed consent. The analyses of the data were conducted with SPSS version 24.

Results: 100 women aged 32.5 +- 6.8 years took part in the study. On the whole, 45 per cent had had a cervical cancer screening test, and 28 per cent had heard about the HPV vaccination and only 15 per cent had been vaccinated. Women with greater educational attainment (p=0.01) and frequent health care utilization (p=0.02) had a greater screening uptake. The most significant obstacles were the unawareness (52 percent), fear of the process (30 percent), and the price (18 percent). Females who had this prior knowledge with HPV were more likely to accept vaccination (p=0.03). These results indicate that there are significant loopholes in preventive measures amongst women of reproductive age.

Conclusion: Cervical cancer screening and HPV vaccination uptake have not yet reached optimal levels in women of reproductive age with considerable knowledge gaps and barriers pertaining to awareness, affordability, and health care access. Specific educational programs and easy screening activities as well as free vaccination measures are necessary to enhance preventive strategies. Engagement of healthcare providers and community-focused interventions will strengthen engagement and facilitate preventing and detecting early cervical cancer, reducing the occurrence of cervical cancer and improving reproductive health outcomes among the population.

Keywords: Cervical cancer, Screening practices, HPV vaccination, Awareness, Reproductive-age.

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INTRODUCTION

One of the most preventable cancer cases among women is cervical cancer, which is still causing serious morbidity and mortality in all the countries of the world, especially low- and middle-income countries [1]. It is the fourth leading cancer in women all over the world, with 604,000 women diagnosed with the disease in 2020 and 342,000 fatalities in 2020 [2]. Endemic infection with high-risk human papillomavirus (HPV), particularly type 16 and 18 is known to be the major etiological determinant of cervical cancer [3]. Although there are good screening techniques and vaccines against HPV, most women are only detected at advanced stages due to insufficient awareness, sociocultural factors and access to health services [4].Cervical cancer screening is mainly conducted using cytology based techniques like the Papanicolaou (Pap) smear, and by using molecular techniques like HPV DNA testing [5]. Diagnosis during the screening phase is both an early diagnosis and a great way to reduce incidence and mortality rates because it is possible to detect precancerous lesions that can be treated [6]. Moreover, HPV vaccination has become a backbone of primary prevention, and vaccines against high-risk HPV types have proved to be very effective in prevention of cervical intraepithelial neoplasia and invasive cervical cancer [7] women, which are aged between 15-49 years of age, are a very important target group of prevention of cervical cancer. The screening and vaccination at an early age can help to avoid most cases of cervical cancer and related complications [8]. Earlier investigations have indicated that there is a difference in the degree of awareness and practice relating to screening of cervical cancer and HPV vaccination [9]. To illustrate, a survey of women in India revealed that only 32 percent ever had cervical screening, and fewer than 20 percent knew about HPV vaccination. In a similar manner, a Nigeria-based study has identified major knowledge gaps, and misunderstandings surrounding HPV infection and vaccination have been cited as factors limiting its uptake. Knowledge, attitudes and practices of women concerning cervical cancer screening and HPV vaccination are critical in the development of effective interventions at the public health level. Recent findings regarding the barriers to uptake and the effect of sociodemographic variables can be used to inform policy decisions and Specific educational campaigns. Additionally, access and compliance could be greatly enhanced through the introduction of regular screening and vaccination into the current healthcare systems.

MATERIAL & METHODS

A cross-sectional study Conducted at Department of Community Medicine Kabir Medical College Peshawar from jan 2023 to june 2023 .out on 100 women of reproductive age (between 15 and 49 years) who visited gynecology outpatient clinic of a tertiary care hospital during a period of six months. Data on sociodemographic characteristics, the history of cervical cancer screening, awareness of HPV vaccination and prevention barriers were collected using a structured, pretested questionnaire. The women who participated in the study gave informed consent and were ready to take part in the study. All participants were interviewed privately to promote confidentiality.

INCLUSION CRITERIA

The study included women aged 15-49 years who came to the outpatient department willing to take part and give informed consent.

EXCLUSION CRITERIA

Women who had already been diagnosed with cervical cancer, pregnant women in the third trimester or women who refused to take part in the study were excluded.

ETHICAL APPROVAL STATEMENT

The Institutional Ethics Committee approved the study. All participants had signed the informed consent. Anonymity and confidentiality were closely observed and the participants were advised of their right to drop out at any point without compromising their medical treatment.

DATA COLLECTION

This study was conducted based on a structured questionnaire that was completed using a face-to-face interview. Data consisted of sociodemographiccharacteristics,cervical cancer screening history, knowledge and awareness with respect to HPVvaccination, and perceived barriers to screening and vaccination. Information was inputted into a safe database to be analyzed.

STATISTICAL ANALYSIS

Analysis of data was carried out in SPSS version 24.0. Frequencies, percentages, means and SDs were obtained. Chi-square and logistic regression were done as part of inferential statistics to determine relationships between sociodemographic determinants and screening or vaccination uptake. Any p-value below 0.05 was regarded as statistically significant.

RESULTS

100 women in total with an average age of 32.5 +- 6.8 years. Most of them (68 percent) were married, 55 percent had secondary education and 42 percent were working. On the whole, 90 women (45%), had been screened at least once for cervical cancer and 100 women (55%), had never been screened. The most prevalent screening technique was pap smear (72%), then there was HPV DNA testing (18%). The use of screening was found to be much higher among more educated women (p=0.01) and those having regular access to healthcare services (p=0.02).In the case of HPV vaccination, only a quarter of the sample was found to be aware of the vaccine, and 15 percent had received at least one dose. Women who previously had information about HPV were more likely to accept the vaccination (p=0.03). The most frequent screening obstacles were the unawareness (52 percent), fear of the

process (30 percent), and cost factors (18 percent). In the case of the HPV vaccination, price (40 percent), lack of knowledge (35 percent), and cultural misunderstanding (25 percent) were the greatest setbacks.

Table 1: Demographic Information

Demographic Information	Value
Total Women	100
Average Age	32.5 ± 6.8 years
Marital Status (Married)	68%
Education Level (Secondary)	55%
Employment Status (Working)	42%

Table 1: Age, marital status (68% married), education (55% secondary), and employment status (42% working) of study participants (n = 100) with mean age (32.5 ± 6.8 years) is demographic data.

Table 2: Screening Information

Screening Information	Value
Screened for Cervical Cancer (At Least Once)	45%
Screened for Cervical Cancer (Never)	55%
Screening Technique (Pap Smear)	72%
Screening Technique (HPV DNA Testing)	18%

Table 2: Of all participants, 45% have a history of cervical cancer screening and 55% have never been screened. The Pap smear and HPV DNA test were used (72% and 18% of the time, respectively) as screening techniques.

Table 3: HPV Vaccination Information

HPV Vaccination Information	Value
Aware of HPV Vaccine	25%
Received HPV Vaccine (At Least One Dose)	15%
HPV Vaccine Acceptance (p-value)	p=0.03

Table 3: HPV vaccination awareness and uptake are reported, with 25% of participants being aware, 15% having received at least one dose, and a statistically significant (p = 0.03) difference in vaccine acceptance.

Table 4: Obstacles Information

Obstacles Information	Value
Screening Obstacles (Unawareness)	52%
Screening Obstacles (Fear of Process)	30%
Screening Obstacles (Cost)	18%
HPV Vaccine Obstacles (Price)	40%
HPV Vaccine Obstacles (Lack of Knowledge)	35%

Table 4: Screening and HPV vaccination barriers are reported in the following order. For screening, the barriers were unawareness (52%), fear of process (30%), and cost (18%). For vaccine, barriers were price (40%) and lack of knowledge (35%).

DISCUSSION

Cervical cancer is a major object of social health inquiry, especially in the low and middle-income regions. Regarding HPV vaccination, screening methods are available, and the level of uptake is still suboptimal among women of reproductive age [10]. The present study sought to assess the current cervical cancer screening practice and HPV vaccination awareness levels in women aged 15-49 years and consider obstacles and enablers of preventive behaviors. We also found that 45 percent of the participants had undergone cervical cancer screening at some point in their lives with Pap smear being the most widely used screening procedure [11,12]. This is in line with other studies conducted in Ethiopia where uptake of screening was between 2.9 and 13.46 percent in women aged 30 and above. Factors that included increased levels of education and frequent access to health care were linked with increased levels of screening uptake. Likewise, research has also indicated that more educated women and those who had access to healthcare facilities were more likely to have attended cervical cancer screening programs [13, 14].Awareness of the HPV vaccine was found to be 28 percent of those surveyed, with only 15 percent having had at least one dose of this vaccine [13,14]. This is low compared to the figures reported in research in China where 35.4% of women had known about the HPV vaccine [15]. This may be because of the low uptake in our study due to lack of knowledge, cost reasons and cultural misperceptions. Other researchers have also found similar barriers in Iran and Nigeria, with lack of awareness, fear of the procedure and cost being the major barriers to HPV vaccination in these countries [16, 17]. These results are consistent with the results of a study carried out in Nigeria where similar barriers to screening were identified. In the case of HPV vaccination, the main challenges were cost, lack of awareness, and cultural misperception [18]. These obstacles are aligned with those described in the literature in Saudi Arabia and China, where financial barriers and misinformation played a key role in preventing vaccination [19].In order to enhance cervical cancer prevention among women of reproductive age, specific interventions should be performed. Cervical cancer and HPV vaccination awareness and misconceptions (debunking) should become the subject of public health campaigns, with information about the availability of affordable services. Financial barriers can also be reduced by implementing educational programs based on the literacy level and cultural context and integrating HPV vaccination into regular immunization programs and providing subsidized screening programs [20]. Accessibility and comfort can also be enhanced with the introduction of self-sampling-based HPV testing, which is already in place in such countries as Sweden and Australia and could result in a higher uptake of screening[21,22].

LIMITATIONS

This case was carried out in one tertiary care hospital, which restricts generalization. The cross-sectional design is no longer causal. Self-reported data can be

prone to the effects of recall and social desirability bias, and the size of the sample can be a limiting factor in terms of statistical power to find correlations between sociodemographic variables and preventive behavior.

CONCLUSION

There is low uptake of cervical cancer screening and HPV vaccination among women in their reproductive age mainly because they are unaware of it, because of its cost and because of cultural misconceptions. To increase preventive behaviors and minimize incidence of cervical cancer in this population, there is need to integrate targeted educational programs, enhanced access to healthcare and subsidized vaccination programs.

FUTURE FINDINGS

Multi-center, longitudinal studies to determine the trends in screening and vaccination should be considered in future studies. Interventions like community-based education, mobile health and policy-based subsidized vaccination would be considered. Research must also be conducted with an aim of learning more about the cultural beliefs and obstacles to implement specific measures aimed at enhancing the uptake of cervical cancer prevention.

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Concept & Design of Study: **Ghazala Yasmine**
Data Collection: **Babar Ahad**
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