Cervical Cancer Prevention In Bangladesh: Awareness And Accessibility To Preventive Methods: A Systematic Review

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Abstract

Cervical cancer (CCa) is considered the fourth most common cause of female cancer mortality worldwide, even though it is a preventable disease through screening and treatment practices. In Bangladesh, more than 10,000 women die from cervical cancer. It has been responsible for approximately 22-29% of cancer deaths in the country alone. The mortality rate can be reduced through the approach of early screening methods, early diagnosis and treatment programs. Risk factors such as smoking, multi-parity, sexually transmitted diseases (STD’s), unprotected and early age onset sexual activity, multiple sexual partners and low socioeconomic status have major impacts on the burden of cervical cancer. The main goal of this study is to investigate the availability and accessibility to educational materials and preventive methods to decrease both incidence and prevalence levels of cervical cancer. More precisely, it is an in-depth look at how various methods of increasing awareness (i.e. use of governmental guidelines or social media) can encourage women to visit their physician or local health center to get preventive care for cervical cancer in Bangladesh.

Keywords: cervical cancer; awareness; preventive; education; screening.

1. Introduction

Cervical cancer is currently the fourth leading cancer in women worldwide. It is responsible for up to 22-29% of cancer deaths in Bangladesh [1]. Despite increasing awareness in the country, preventive care of CCa is still in the early stages. In 2004, the United Nations Population Fund (UNFPA) launched a phased manner approach to national CCa screening program, initiating as pilot program in 16 of 64 districts. This was then expanded to 44 districts at the end of 2007 [3]. While human papillomavirus (HPV) vaccines have been available since 2006, their availability in the country has not occurred till 2016. The Bangladesh Ministry of Health (BMH) has been able to conduct a two-year demonstration program in the Gazipur district, supported by the Global Alliance for Vaccines and Immunizations (GAVI), in an attempt to create a national HPV vaccination program [4].

Before we proceed towards the diagnosis and effective treatment plans for CCa, it is essential to have a profound understanding of the causes and symptoms of the disease. Major risk factors for CCa include the HPV infection, exposure to diethylstilbestrol (DES), and women over the age of 40 years, an immunocompromised system and no access to screening practices [3]. Screening methods include the commonly used Pap smear and visual inspection with acetic acid (VIA), which the World Health Organization (WHO) has deemed to be the most cost-effective screening method for developing nations [4]. Usually, both Pap smears and HPV testing occur concurrently to women over 30 years of age, with intervals of five years between tests if normal results [1, 3]. If abnormal, there are three types of standard treatment options used: surgery procedures such as loop electrosurgical excision procedure (LEEP), radiation, and chemotherapy depending on the type and stage of the cancer [3, 15].

Patients can present asymptomatically until the disease is in its advanced stages, thus decreasing survival rates [1]. Lack of knowledge can prevent women to associate symptoms of abnormal bleeding (i.e. after sexual intercourse, pelvic exam or in between menstrual cycles), frequent urination, along with dysuria and foul discharge varying in color or consistency to other health issues as the menstrual cycle or a
urinary tract infection [1]. This lack of knowledge can result in delayed diagnosis and death if not treated in the appropriate time. With all of this in mind, the purpose of this study is to investigate the availability and accessibility to educational materials and preventive methods to decrease both incidence and prevalence rates of CCa in Bangladesh.

2. Material and Methods

There is a plethora of information available online on CCa, but we restricted our research to peer-reviewed journals to enhance the credibility of the paper. We used electronic databases: PubMed, ELSEVIER and Ovid. We confined our search to studies of primary care prevention, vaccination methods, awareness and education of the disease, specifically in Bangladesh. The major keywords included in our investigation are cervical cancer, preventive, vaccinations, management, education, and screening in Bangladesh.

**PubMed Search Strategy:**

(Cervical Cancer [Title/Abstract]) AND (Prevention [Title/Abstract]) AND (Awareness [Title/Abstract]) OR (Education [Title/Abstract]) OR (Socioeconomic Factors [Title/Abstract]) OR (Bangladesh [Title/Abstract]) AND

Limited to literature published from July 1, 1998 through Jan 1, 2018, English language and Humans.

Fig. 1. Strategy Text Box: which describes the technique that was used to search for articles and to execute the CCa systematic review.

We retrieved thousands of articles based on these keywords and identified 1,156 research papers meeting initial search criteria. However, after applying exclusion criteria listed in figure 2, we were left with only 22 applicable articles.

**Exclusion Criteria**

Age (younger than age 15 years), unmarried women, actively on menstrual cycle, dysfunctional uterine bleeding, irregular menses, hysterectomy, human papillomavirus infection, exposure to diethylstilbestrol (DES), pregnancy or lactation, psychosis, previous diagnosed or currently diagnosed cervical cancer.

3. Results

3.1 Screening

The VIA method is an affordable screening test where the sensitivity and specificity performed by medical personnel are 79% and 57.4% respectively. In a previously published study, the sensitivity of these tests was 94.4%, which was significantly higher than that of Pap smears (55.5%). Thus, VIA testing is a credible alternative to Pap smears and healthcare personnel can be easily trained in the procedure [22]. Even though all women who get VIA screening at these centers are documented, it is difficult contacting them to confirm compliance for referred colposcopy. However, it was estimated that out of 5,013 VIA positive women who were referred to colposcopy, 4,371 women actually followed up with the clinic. This indicates a compliance rate of 87.2%; but this could not be validated [3].
Current national guidelines do not recommend screening for women under 30 years of age; however, around 23% of women of this age group were diagnosed with CCA staged 2/3 [3]. Since 2010, VIA screening has been made available at 252 facilities from primary to tertiary care in the country. However, colposcopy and cervical biopsy are only available at seven teaching hospitals [3]. For a country with approximately 58.7 millions females over the age of 15, these are inadequate facilities and resources to deal with the burden of CCA [4].

3.2 HPV Vaccinations

In 2006, the HPV vaccines (Gardasil by Merck and Cervarix by GlaxoSmithKline) were introduced to the medical field; however, the vaccines were not available in Bangladesh until 2016. These vaccines were able to cover the HPV strains 16 and 18, as they are widely known to be the causes of cervical neoplasia (CIN) or invasive CCA. In 2016, the BMH initiated a two-year vaccination program in the Gazipur district in order to jump start a national HPV vaccination program [4]. The aim of the introductory program was to vaccinate 10-year-old females in schools, following the WHO guidelines, as well as evaluating accessibility, cost, coverage and feasibility of the vaccines. At the end of 2016, around 95% of females of that age were given 2 doses of vaccination, six months apart [19]. As for females who were not enrolled in or missed school on the day vaccinations were given, the vaccines could be received through the expanded program on immunization sites located at some community clinics [5, 6, 18].

In a cross-sectional study conducted in 2011, 8% rural and 12% urban women had received education on CCA from a physician. However, only 1 in 5 rural and 1 in 20 rural women had heard about a vaccine that could prevent CCA. Once informed, women were willing to receive the HPV vaccine, either for themselves (urban: 93.9%, rural: 99.4%) or for their daughters (urban: 91.8%, rural: 99.2%) [7]. In a more expanded design of this study in 2015, a questionnaire was distributed among 110 college educated women, between the ages of 16 to 25 years, showing that 74% of the participants knew of CCA. Out of these participants, 45% were recommended the vaccine by their physician; 17% of them have a background in healthcare, thus knew about the disease; 5% were influenced by media advertisement on the vaccine and 33% received the information from a relative [12].

3.3 Cultural and social factors

Since Bangladesh is a developing country, certain factors such as living with a varying per capita income, rural living areas, access to education, low literacy rate and religious beliefs play vital roles in the awareness levels of CCA. Many studies performed in low per-capita income populations indicate the lack of awareness and education of CCA as being the main reasons for the low screening and vaccination rates [8, 9, 21]. In one study, 86.1% of 709 women stated that the main reason for not getting screened was having no symptoms and not knowing what to look for with regards to the disease [21]. In low per-capita income populations, it was determined that the lack of education, low income margins, expenses associated with screening and treatment, the long distance to health centers, demographic factor of age, marital status, and occupation were the barriers for CCA screening [8, 9, 21].

Education plays an important role in understanding CCA. A study conducted in 2013 found that only about half of the sampled population could read and, therefore, relied heavily on audio-visual materials for awareness. It concluded that 37.4% of women attending VIA screening camps had learned about CCA from advertisement on television, 25.5% heard about CCA from cable line advertisements, and 21.4% from mike announcements [17]. In one staggering study, couples stated that they were only aware of the word ‘cancer’, irrespective of the location of cancer in the body. Apart from this, 10-12% of the women understood that cancer could be detected and treated earlier to prevent death. In a comparison between VIA and cytology-based screening, a study showed that 38.2% of 650 women had less than five years of education, where 48.9% had 8-10 years of education [15].

Culturally in Bangladesh, rural women tend to get married at younger ages and the average age of first sexual contact is 15 years [4]. With early age of sexual intercourse occurring, it has led to the early HPV exposure, thus increasing the incidence of CCA. Hence, the demonstration program in the Gazipur district can be beneficial in introducing the vaccines in the targeted age group of females aged ten years [4]. Surprisingly, only 0.5-3% of women stated religious concerns as a reason for not being screened, despite Bangladesh being a conservative Muslim nation [8, 21].

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4. Discussions

Many studies have indicated that women who are diagnosed with CCa can live a healthy life, if detection and treatment occur in a timely manner. By launching the CCa screening program in 2004, Bangladesh was able to decrease the burden of this disease [8]. Even with the population gaining more awareness of CCa, the incidence of screening was directly proportional to the literacy and higher per capita income. By having a lack of knowledge of CCa, women were more reluctant to partake in screening methods, thus increasing the incidence of the disease, once developed [18]. Additionally, the low availability of screening services in many rural areas directly influences the inadequacy levels of screening among the studied population [15].

Comparison studies between VIA and Pap smears in diagnosing CCa concluded that VIA is an appropriate screening tool to diagnose pre and early stages of CCa in the present socioeconomic condition of Bangladesh, with reasonable sensitivity, positive predictive and negative predictive value [15]. Recent data collection was able to support the idea that community-based awareness programs are more likely to increase screening uptake. However, this program should include both low level literacy areas and women who do not work [8]. It was also found that the main source of knowledge about the disease was from exchanging information between relatives and neighbors, along with advertised media programming on television [18]. Regardless of the limitations of VIA testing, implementing it in developing countries may provide a realistic approach to building resources that can offset the cost of both HPV and Pap smear testing. VIA is beneficial because CCa screening in Bangladesh is an expensive and difficult process due to multiple required visits to a healthcare personnel [15].

5. Conclusion

Cervical cancer is a preventable disease; however, only a small portion of the population of Bangladesh is aware of the various screening and prevention procedures. Thus, it is paramount that education about cervical cancer occurs on a more widespread scale for women’s health. It is pertinent that the health department adopt various programs, such as audio-visual media advertisements, cost-effective to free routine VIA clinic screenings and HPV vaccinations, to allow an increase in awareness to occur. By establishing a method that is able to provide more awareness and education, it is believed that more women will be willing to participate in early screening methods. Early screening approaches to improve cervical cancer outcomes include providing education, promoting awareness in the community and allowing easier accessibility to healthcare services for primary prevention to occur.

References


