Received: 22 November 2023 | Revised: 1 April 2024 | Accepted: 17 May 2024

DOI: 10.1002/hsr2.2178

OBSERVATIONS

Health Science Reports Open Access WILEY

Response of Bangladesh to the World Health Organization call to eliminate cervical cancer as a public health issue: An observational report

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Abstract

Background: Despite being preventable, cervical cancer remains a leading cause of mortality among Bangladeshi women. This article addresses the trends in Bangladesh's response to the World Health Organization's (WHO) request for the eradication of cervical cancer within the nation.

Discussion: When it comes to cervical cancer, healthcare institutions need to be concerned in terms of protocols for diagnosis and treatment, staff education, and available resources. More than a quarter of all female cancers in Bangladesh are caused by cervical cancer, which can be prevented through better healthcare infrastructure, earlier diagnosis, more qualified healthcare professionals, improved urban and rural hospital infrastructure, community-based clinics, expanded affordable vaccinations, school-based delivery systems, adoption of single-dose vaccine schedules, raising awareness, and compiling a registry of previously affected results. WHO applauds Bangladesh's Ministry of Health and Family Welfare for its efforts to develop the National Strategy for cervical cancer prevention and control, which will guide and strengthen the country's activities to prevent and treat cervical cancer.

Conclusion: The endeavor to eradicate this global disease burden should not be limited to Bangladesh; all nations should participate collectively to prevent the malignancy from returning and threatening human civilization.

KEYWORDS

Bangladesh, cervical cancer, human papillomavirus, response to WHO call

1 | BACKGROUND

Gynecologic malignancy results from cervical cancer, which attacks the cervix. It is responsible for causing death in around 8% of female cancer patients worldwide.[1] Cervical cancer ranks as the fourth most prevalent kind of malignancy among women. The primary etiological factors associated with cervical cancer are human papillomavirus (HPV) types 16 and 18. According to available statistics, in 2020, they had 604,000 newly reported cases and 342,000 recorded deaths.[2] In 2020, most of the world's newly reported cases of disease and

fatalities occurred in low- and middle-income nations. By 2030, cervical cancer is expected to reach 700,000 new points per year, up from 570,000 in 2018. Similarly, the projected annual mortality rate is anticipated to grow from 311,000 deaths in 2018 to 400,000 deaths by 2030.[3]

Bangladesh has a high population density, with 165,158,616 people in the 2022 census. Out of the total population, 83,347,206 individuals are identified as female, with a significant majority of 113,063,587 residing in rural regions.[4] The 2.64% of GDP is allocated to health care spending. Bangladesh spent 74% of its current health expenditure on out-of-pocket costs in 2020. From 65.8% of total healthcare expenditures in 2001 to 74% in 2020, Bangladesh's out-of-pocket payments are predicted to expand by 0.64% yearly.[5] According to the data provided by GOLOBOCAN 2020, the cancer incidence rate per 100,000 people in Bangladesh is 106.2%. In Bangladesh, the data shows 156,775 new cancer cases throughout the defined time; additionally, 108,990 people died from the condition.[6] The World Health Organization (WHO) has approved a new HPV test. This development is particularly significant since nations such as Bangladesh are actively working towards the eradication of cervical cancer. Additionally, a scheme financed by United has successfully tested over one million women for this disease. As per WHO standards, visual examination with acetic acid is used to screen cervical cancer in low-resource countries.[3]

2 | WHO'S RESPONSE TOWARDS CERVICAL CANCER

The World Health Assembly has given its blessing to a global effort to speed up the eradication of cervical cancer.[7] The WHO has approved four HPV vaccinations against types 16 and 18. These particular HPV strains have been identified as responsible for at least 70% of cervical cancer cases. The 9-valent immunization protects against an extra five carcinogenic forms of HPV, which are responsible for an additional 20% of cervical cancer cases. The WHO now recognizes a fourth prequalified HPV test. Infections with the HPV often resolve on their own, and some virus types are more dangerous and linked to cervical cancer. Cervical cancer prevention relies on HPV testing.[8] A total of more than one million women residing in 14 low- and middle-income nations have undergone cervical cancer screening as part of an integrated prevention program. These countries' governments implemented this plan with United, Clinton Health Access Initiative, and international health groups. Budgeting methods for national preventative initiatives were established using WHO tools. These plans utilize HPV testing, which is a more accurate method for visual cervix inspection versus diagnosing the primary cause of cervical cancer.[8]

The implementation programs supported by United Nations in seven countries have achieved remarkable success in meeting 90% of treatment objectives for women diagnosed with precancerous lesions. This achievement was accomplished within 2 years of introducing the WHO's cervical cancer eradication plan, 7 years ahead of the projected timeframe. To effectively combat cervical cancer, a nation needs to maintain a yearly incidence rate that is below four instances per 100,000 women. By age 15, 90% of female individuals have received complete vaccination against the HPV. Research shows 70% of women aged 35–45 have high-performance screening. A remarkable 90% of cervical illness patients obtain proper therapy. Ninety percent of women with invasive cervical cancer are treated.[7] The WHO recommends vaccinating young girls against cervical cancer between the ages of 9 and 14 when the vast majority of them have not yet engaged in sexual activity. The WHO has published recommendations for detecting, treating, and preventing cervical cancer. These include strategies such as immunization, screening, therapy, and effectively managing invasive cancer cases. The WHO collaborates with nations and many stakeholders to formulate and execute all-encompassing initiatives that align with the overarching global plan.[7]

3 | CERVICAL CANCER IN BANGLADESH

Bangladesh, with a population of 165,158,616 million individuals, significantly contributes to cervical cancer diagnoses per year.[4] The projected incidence of cervical cancer incidence in Bangladesh continues to rise by 156,775, with a corresponding mortality rate of 108,990.[6] The elevated mortality-to-incidence ratio seen in both nations suggests a tendency for late-stage disease diagnosis and unfavorable posttreatment survival outcomes. The task of assessing the patterns of cervical cancer occurrence and death is a notable difficulty in Bangladesh, principally because of a deficiency in a comprehensive cancer registry that covers the whole population.[9] Socioeconomic variables have been linked to the decline in cervical cancer rates, including more educational opportunities, a higher average age of marriage among women, delayed initiation of motherhood, and a decrease in the number of children per woman.[10]

Women's healthcare requires cervical cancer screening to identify and prevent this potentially fatal illness. Recent interest has focused on acetic acid-based cervical visual examination. This method includes applying acetic acid to the cervix and visually examining it for abnormalities that may signal cervical cancer or its precursor stages. While more complex screening procedures are available in specific locations, the VIA method is simple, cost-effective, and may be done in low-resource situations. The government has mandated it following the guidelines set out by the WHO for countries with limited resources.[11] The screening program was expanded to include all districts and a selection of Upazilas. As part of the screening drive, medical faculties, hospitals, mother and baby care centers, charity centers, and even specific Upazilas health clinics have improved their staff's skills and knowledge. Patients who tested positive for cervical cancer were sent to a colposcopy clinic, and around 417 visual inspection with acetic acid (VIA) sites were set up in primary, secondary, and tertiary hospitals in 64 districts throughout Bangladesh.[12] A study was published for distribution in 2022 by the National Centre for Cervical and Breast Cancer Screening and Training at Bangabandhu Sheikh Mujib Medical University (BSMMU). According to this study, there are 570 VIA centers, and screening coverage was

11.30% and the positive rate was 5.71% among the approximately 240,000 women who were tested between 2017 and 2022.[13]

The WHO recommends that screenings be performed every 5 years on women aged 30 and up, with the target detection rate being between 30% and 60%. Only 7.5% of women aged 30–49 have undergone cervical screening at least once in their lives, according to the 2019 Health Bulletin. Based on the data provided in the "World Health Organization - Cervical Cancer Country Profiles, 2021", while the overall rate of cervical cancer screening is 7%, only 5% has occurred in the previous 5 years.[11]

Nevertheless, the program has several limits and drawbacks. Without a comprehensive data-gathering strategy spanning many screening and colposcopy services and the lack of a well-defined quality assurance plan, evaluating service quality and devising strategies for improvement becomes very challenging.[14] Recent objectives have been established under the Global Strategy to Accelerate the Eradication of Cervical Cancer as a Public Health Concern 2020–2030, with a specific aim of attaining the eradication target of four per 100,000 cases by 2030. The elimination date may vary across countries due to factors such as acceleration and baseline conditions.[14]

The widespread misconception that screening is just for symptomatic women has kept many women from taking part (86.1%), a lack of comprehension of the significance of screening (37.5%), and apprehensions regarding potential financial burdens (11.5%). This observation highlights the need to implement comprehensive educational initiatives on a broader scale. Bangladesh's Community Health Workers (CHWs) have been shown to play a significant part in the community. According to previous research, they may actively increase cancer awareness. The successful implementation of the program and the establishment of new facilities need the concurrent engagement of the community. When given treatment at the same session, over 20% of Colposcopy centers report that women who have a positive VIA test result are declining treatment. Increasing patient financial responsibility, improving access to treatment and pathology services, and raising service quality contribute to increased program participation. To get around the limitations of the electronic health record system, a paper-based data-gathering method might be developed using the screening registers at various screening and colposcopy clinics. This stopgap measure will tide us over until the automated system is fully operational. Systematic paper-based data collecting, excellent coordination, and cervical cancer screening in Morocco, which uses VIA as its quality assurance technique, have shown that KPI-based reviews can be conducted nationally.[15]

4 | BANGLADESH'S RESPONSE TOWARDS WHO'S CALL

In October 2023, the government of Bangladesh has begun an innovative immunization campaign against HPV with the help of UNICEF, the Vaccine Alliance (Gavi), and the WHO.[16] The goal of this effort is to prevent cervical cancer in as many of the 20 million young women of Bangladesh as possible, which kills thousands of women every year in Bangladesh. Access to quality healthcare is a national goal in Bangladesh. Increased vaccination rates against vaccine-preventable diseases have supported government efforts to reduce maternal and newborn mortality and impairment. With funding from Grameen Phone Limited, the Oncology Club in Bangladesh was the first to lead the initiative to vaccinate the population against HPV. A trial program to vaccinate one hundred females was also initiated by the Division of Gynecological Oncology at BSMMU; the initial ten were administered the vaccines on December 27, 2008.[13]

Bangladesh has emerged as a leader in the fight against the COVID-19 epidemic. Gavi has presented the 2019 Vaccine Hero Award to the Hon'ble Prime Minister of Bangladesh, Sheikh Hasina, for the remarkable achievements of the country's immunization program. UNICEF gave all girls in the Dhaka division an HPV vaccine because of funding from Gavi. The government has pledged to help marginalized populations by coordinating with the Department of Education and creating new initiatives to reach females who are not in school, especially those who are homeless. When all three steps are finished, the HPV vaccination will be a part of the standard immunization program for females ages 10 and up to the fifth grade who are not in school. Such an approach demonstrates Bangladesh's concern for its young people. It bodes well for the country's future health and prosperity.[16]

UNICEF and the WHO are working closely with the government to carry out the immunization campaign. To ensure that no girl is left behind, health personnel have schools, parents, and religious leaders participate in orientation courses and receive thorough training. The government sincerely appreciates the beginning of this immunization campaign for girls in the Dhaka division. The health and happiness of future generations of women will benefit greatly from this initiative. Bangladesh has 1.5 million cancer patients and 150,000 annual deaths, according to the WHO. Another 200,000 cancer cases are expected this year, according to the report. There are no population-based cancer prevalence data. Hence, cancer incidence cannot be estimated.[17]

Hospital-based cervical cancer screening programs do exist. However, they need more coverage. In addition, most of Bangladesh's hospitals may be found in Dhaka. There is only one government cancer hospital in the country, in Mohakhali, at the National Institute of Cancer Research and Hospital. It has been the go-to place for patients from low-income areas due to its large bed capacity (500 beds). Outside Dhaka's capital city, only nine of Bangladesh's government-run medical universities offer oncology services.

Government medical college hospitals in eight divisional cities had a 2019 plan to build a full-fledged cancer institute, but the COVID-19 epidemic scuttled those plans. A few private hospitals have oncology units and offer treatment for cancer, but none of them is a cancer treatment center of excellence. They are also out of reach of most patients financially. As a result, many families can't afford cancer treatment and end up losing everything.

5 | DISCUSSION

The primary incidence of cervical cancer in South Asia is concentrated in Bangladesh. The primary determinant of susceptibility to cervical cancer may develop after an HPV infection-genotypes, especially the HPV16 and HPV18 high-risk ones.[12] In conjunction to HPV, several factors have been recognized as possible causes of increased cervical cancer vulnerability. There is a higher likelihood of cervical cancer development among women if they engage in sexual activity before the age of 18, have multiple children, have short gaps between pregnancies, use oral contraceptives, fail to practice good hygiene practices after menopause, and are generally unaware of the risk factors for this disease.[18] Family history, cervical dysplasia of the vagina or vulva, STIs including chlamydia, tobacco use, weakened immunity, and prenatal exposure to diethylstilbestrol may cause an intensified probability of developing cervical cancer.[19] Cervical cancer risk may be increased if women do not have regular checkups. The social taboo against talking about cancer in the cervix is another factor in the progression of cervical cancer. Bangladeshi women, especially in the context of their intimate relationships, often have a propensity towards hesitation and experience discomfort when engaging in conversations about diseases.[20] Bangladesh has a high risk of cervical cancer, which is exacerbated by language and cultural difficulties. Finally, Cervical cancer is more likely to occur in women who engage in risky behaviors such as heavy smoking or anabolic steroid usage.

Nonetheless, it is imperative to emphasize raising awareness regarding this aspect. There exists a potential correlation between poverty and limited healthcare accessibility. Additionally, it is observed that within Bangladeshi traditional society, women may encounter barriers that hinder their ability to obtain adequate medical care. Inadequate follow-up after the diagnosis of pre-cancerous lesions might raise the probability of getting cervical cancer.[21]

In places with a low per capita income like Bangladesh, where there is limited access to healthcare education, it is imperative to identify a screening method that is relatively uncomplicated, affordable, and requires minimal technological resources. This screening option should be capable of diagnosing the disease in its early stages, explicitly targeting precursor lesions, and facilitating immediate treatment. Moreover, it is crucial to acknowledge the challenges associated with conducting vaginal examinations in Bangladesh, given the low prevalence of screening for cervical cancer among Bangladeshi women and the stigma associated with discussing such topics. Women prefer female doctors and other healthcare professionals because they feel more at ease talking to someone, they can connect to about issues specific to their bodies.[22]

The mortality rate resulting from cervical HPV infection is higher among women in the age groups of 50–54 and 65–74, compared to those aged 15–39. For cancer to be detected at the precursor lesion stage, ideally 13 years before it becomes lethal, screening rates among younger women must be increased.[23] BSMMU and the government of Bangladesh have suggested a cervical cancer screening program. The WHO and the non-profit organization Cancer Help and Network for Support Programs have collaborated to provide cervical cancer screening technical help. Proposals have been made to expand the successful screening effort in 31 districts to all other communities in Bangladesh.

Together with BSMMU, WHO, and the United Nations Population Fund, the Ministry of Health and Family Welfare (MoHFW) has devised yet another plan. Bangladesh's MoHFW has devised a national strategy for preventing and controlling cervical cancer, and the WHO has praised it. The plan, which encompasses the years 2017–2022, is the initial step toward coordinating efforts to combat cervical cancer by harmonizing the objectives and actions of all relevant parties. An estimated 12,000 newly diagnosed cases are detected each year, resulting in over 6000 fatalities and ranking as the second most prevalent form of cancer in Bangladesh. Several crucial elements comprise the recently developed strategy to combat cervical cancer, including expanding access to the HPV vaccine for girls aged 9–13, enhancing screening and treatment programs for the disease, strengthening palliative care services, and launching additional educational campaigns to control the disease. All women in Bangladesh between the ages of 30 and 60 are eligible for screening; the most recent national census estimates that this figure is 30 million.[11] The hope is that this national policy will serve as a road map for preventing and treating cervical cancer. Morbidity, disability, and mortality rates all have been linked to cervical cancer, but it is hoped that this plan will help bring those numbers down. To implement the National Strategy, the MoHFW and WHO will develop comprehensive and efficient measures to combat cervical cancer.

In addition, it is essential to determine what variables place women at a greater risk of acquiring cervical cancer. Consequently, the government must prioritize implementing comprehensive sexual education within the framework of primary education. Additionally, efforts should be made to alleviate poverty, enhance the living conditions of women, mitigate gender-based violence, and empower women economically. Death rates from cervical cancer might be drastically reduced if these various methods are used.

The potential eradication of cervical cancer as a public health concern is plausible if the 90-70-90 goal for 2030 is achieved and maintained. Reaching this target by 2030, improving surgical training methods, increasing global access to anticancer medications, expanding access to preventative vaccines, providing enough funds for cervical cancer screening and treatment, and using resource-based management techniques will be necessary.[24] Most industrialized nations already possessed these basics, while those in the developing world had to overcome several obstacles. Neoadjuvant chemotherapy and extensive surgery help for cervical cancer. Many tumors have progressed, metastasized, or recurred, suggesting a dismal prognosis. The progression-free survival rate has stayed steady at 18 months. In recent decades immunotherapy has targeted faulty metabolic pathways. Due to tumor microenvironment and immune cell signaling pathway studies, adoptive T-cell therapy, therapeutic vaccinations, immune checkpoint inhibition, and therapeutic vaccines have showed promise in gynecological malignancies.[25]

For example, Malaysia is one of the third world countries whose government has prioritized expanding access to quality healthcare and reducing health risks, including cervical cancer. In 1969, the first cervical cancer screening system was developed as a component of Maternal and Child Health services.[26] Although adaptation of this program to WHO requirements has yielded some success, obstacles have also been identified. Three genotypes of the HPV are responsible for over 70% of cervical malignancies; these strains are targeted by three vaccines: bivalent, quadrivalent, and nonavalent. "A one-dose Human papillomavirus vaccine offers solid protection against cervical cancer," according to the WHO. HPV-DNA and pap smear testing are examples of secondary prevention. The WHO/IARC has revealed that HPV screening results in 10–20% greater disease detection rates with higher false-positive rates than Pap smears, mostly due to studies utilizing Hybrid Capture2 HPV tests analyzed in high-income countries with strict quality control standards.[27] Significantly, both HPV-DNA and Pap tests are incapable of predicting the progression of a case. In lieu of these "conventional" approaches, self-sampling is utilized in several nations to increase cervical cancer screening.[28]

It would be a significant step towards enhancing the applicable policies if it could be determined whether or not the screening plan for cervical cancer is on par with those in other developing countries.[29]

6 | CONCLUSION

All countries, not only Bangladesh, need to work together to exterminate this worldwide plague so it never returns to endanger human civilization again. Despite the country's severe limitations in preventative strategy, cancer outcomes in Bangladesh may be improved by access to medical care and education on symptoms. People in urban areas are more likely to be familiar with the condition than those in rural areas. All current efforts to combat cancer must be coordinated so that we can establish a reliable patient register and monitor the disease's progress across the country. The rising cancer rate in the country is outstripping the capacity of current treatment methods. WHO suggests that there should be one cancer center for every one million people. However, just 20 or 22 service centers' serve Bangladesh's estimated 17 crore residents. As the government can only do so much, it is imperative that as many people as possible come forward for screening. The government needs to collaborate with other stakeholders to make this happen. If it becomes essential, we can conduct screenings at the root level. Everyone needs to do their part.

AUTHOR CONTRIBUTIONS

Sejuti Reza: Conceptualization; writing—original draft; methodology. **Syed Masudur Rahman Dewan**: Conceptualization; supervision; writing—review and editing. **Mohammad Safiqul Islam**: Resources; writing—review and editing. **Mohammad Shahriar**: Resources; writing—review and editing.

ACKNOWLEDGMENTS

The authors express their appreciation to the worldwide community of medical researchers and urge to raise voice and develop timely policies to ensure a healthy nation. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICT OF INTEREST STATEMENT

"Mohammad Safiqul Islam" is an Editorial Board member of Health Science Reports. and a coauthor of this article. To minimize bias, he was excluded from all editorial decision-making related to the acceptance of this article for publication.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

ETHICS STATEMENT

The authors have nothing to report.

TRANSPARENCY STATEMENT

The lead author Syed Masudur Rahman Dewan affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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How to cite this article: Reza S, Dewan SMR, Islam MS, Shahriar M. Response of Bangladesh to the World Health Organization call to eliminate cervical cancer as a public health issue: an observational report. *Health Sci Rep*. 2024;7:e2178. doi:10.1002/hsr2.2178