Department of Public Health, School of Pharmacy and Public Health (SPPH)
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Master of Science
Master's in Public Health

Master Thesis

Breast cancer Research in Bangladesh over the past decade-A Narrative Review

Submitted by
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The thesis part of the master's program- Masters in Public Health - was perfumed with the cooperation of Assistant Prof. & Head, Department of Public Health.

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Abstract:

Background:

"Breast cancer research in Bangladesh over past one decade" to find that early detection, KAP, and Accessibility for women to healthcare facilities are critical for reducing morbidity and mortality. As a result, extreme caution is essential.

Objectives:

We wanted to assess females' knowledge, awareness, and perceived barriers to breast cancer in Bangladesh.

Methods:

A narrative review was conducted based on research papers conducted in Bangladesh over one decade. The finding was based on a qualitative study and assessed the last ten years' research papers from Bangladesh on breast cancer.

Discussion:

Cancer is defined as an abnormal growth of cells that begins locally and then spreads to become a malignant tumor. It is the world's second greatest cause of mortality, accounting for 9.6 million deaths reported in 2018 and one in every six deaths worldwide. Bangladesh is a small country with the world's highest population density. The growing population and lack of basic understanding may increase the number of cancer patients, which is unavoidable. Breast cancer is also becoming more common at an alarming rate. According to a recent survey, the incidence of breast cancer in Bangladesh is 22.5 per 100,000 women.

Conclusion:

The primary barrier to Breast Cancer screening uptake in Bangladesh is a lack of awareness of the assessment of asymptomatic women. Health education programs, particularly Breast cancer awareness programs can raise Breast cancer awareness while delaying disease progression.

Background:

The prevalence of Breast cancer in Bangladesh:
In Bangladesh, breast cancer continues to be a fatal kind of cancer among women. Nowadays, it represents a hidden burden that causes 69% of women's fatalities. (Alam et al., 2021) In Bangladesh, breast cancer is estimated to be 22.5 per 100,000 females of all ages; among Bangladeshi women aged 15 to 44, breast cancer is the most prevalent, with a prevalence rate of 19.3 per 100,000. (Rahman et al., 2015)

Globally, the incidence of breast cancer-related deaths is rising at an alarming rate. The World Health Organization (WHO) 2020 report estimates that in 2018, there were 627,000 cancer fatalities and 2,088,849 new cases. More than 55% of these fatalities occurred in lower- to middle-income countries. (WHO-IARC, 2018)

South Asian nations are experiencing an epidemic of breast cancer due to a significant increase in incidence and mortality. In these nations, the prevalence of breast cancer is increasing and affects around 588 million women over the age of 15. (Alam et al., 2021) In the last twenty years, Bangladesh has experienced an approximately five-fold increase in per capita income and a two-fold increase in literacy. (MOH, 2017) (Bangladesh, n.d.) The gross domestic product (GDP) per capita positively correlates with the age-standardized female breast cancer rate. A general decline in physical activity has occurred over the past few decades due to the quick adoption of technology, heavy reliance on electronic communication, and the emergence of online activities. (Salwa et al., 2016) In addition, the incidence of overweight and obesity among Bangladeshi women is rising due to increasing fast food consumption. (Banik et al., 2020) It is important to note that women with higher education levels appear to have a higher risk of acquiring breast cancer than women with lower education levels. (Dong & Qin, 2020) The likelihood of having breast cancer is potentially influenced by age, and that probability rises with advancing age. According to the literature, women who are 20 years old or older have a 10% chance of developing breast cancer, while those who are 30 or 40 years old have a 40% chance (UNFPA & Path, 2012). However, the hormones, particularly estrogens, and the formation and development of breast cancer are heavily influenced by other risk factors, which may also be the unifying denominator behind the numerous reproductive factors connected to breast cancer (Sasco,2010). The genetic mutation of two genes called BRCA1 and BRCA2 influences the development of breast cancer in humans (Mehrgou & Akouchekian, 2016) .

Platform recommended to treatment

lack of awarness
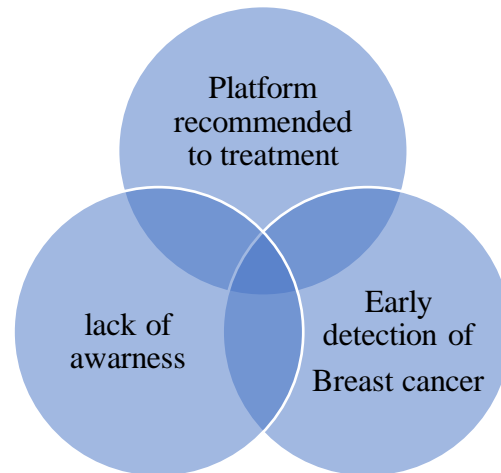
Early detection of Breast cancer

Fig. The diagram shows the association of the Breast cancer (*Bangladesh Society for Breast Cancer Study (BSBCS)*)

Mutations in the p53 gene, different cell cycle checkpoints in the kinase gene (CHEK2), and the phosphatase and tensin homolog (PTEN) gene are some additional genetic factors connected to the development of breast cancer (Riscuta & Dumitrescu, 2012). In addition to genetics, various reproductive and nonreproductive factors also highly predict breast cancer development. In contrast to the nonreproductive factors, which include a personal history of breast cancer, family history, gender, and body mass index, the reproductive factors included menopausal hormone therapy, first pregnancy, breastfeeding, parity, and other such things (BMI) (Mehrgou & Akouchekian, 2016). However, in Bangladesh, when it comes to breast cancer, the common risk factors for breast cancer are highly linked to lack of knowledge, limited access to effective treatment, and community negligence. Despite being a burden on society, fewer and fewer individuals talk about BC. As a result, women have reported having inaccurate information about the causes and related risk factors.

Furthermore, Communities' lack of knowledge on breast cancer self-diagnosis and possible treatments for this led to a delay in starting treatment. In addition, Women find it difficult to communicate with others about any early symptoms or changes in their breasts because of the

unfavorable environment and society (lack of correct information, poor levels of education, and ignorance). Therefore, In advanced-stage presentations are pretty standard in Bangladesh. (Shamsi, 2021) (Almutairi et al., 2019). Several studies have found that 50% of BC patients die due to late cancer presentation; cancer has developed into advanced stages. (Steiness et al., 2018) However, adequate knowledge of risk factors and early detection methods of BC can reduce mortality rates and improve clinical prognosis. In Bangladesh, breast self-examination (BSE) could be used as an effective method of early detection as it is easy, affordable, and most significantly, it can be done by the women themselves in their homes (Montazeri et al., 2008). According to data from the Breast Health Global Initiative (BHGI), if females are sufficiently educated about and practice breast cancer self-examination (BSE), the disease may be diagnosed early and easier to manage the diseases (Amin et al., 2020a).

Before addressing the prevalence of the cycle of awareness, knowledge, environmental factors associated with endocrine disruptors, early detection of the lumps seeking the information at the primary level, and making the entire disease burden a major public health concern, a significant amount of research needs to be conducted in order to find an answer and better solution - root cause analysis also need to include as a part of more effective research outcome. Then preventive action and effectiveness measures for positioning cancer as a public health priority, establishing primary care for BC in Bangladesh, capacity and capability measurement can be found based on the extensive research.

Research Objective:

This research aims to assess the prevalence of Breast cancer and early detection. Using quantitative methods, I will measure knowledge about breast cancer awareness from the past one-decade study that has been conducted into perspective topics to measure the knowledge gap. The results will portray the gap in the research conducted over part one decade. I will also check their awareness of nearby inanimate obstacles (e.g., environmental factors, Lifestyle, and prevention). (Brand et al., 2022)

The research objective is to *measure* the Gap in the knowledge among the population with a higher risk of having breast cancer. How do they perceive the risk of breast cancer, and what are the next steps to the treatment protocol for patients already suffering from cancer?

Methods:

In early November 2022, Information used to write this paper was collected from the sources listed in table 1.

Breast Cancer Research in Bangladesh over one decade: name of the article
1. Knowledge, Attitude, and Practice of Bangladeshi Women towards Breast Cancer: A Cross-Sectional Study. 2. Burden of breast cancer in Bangladesh-current and future and financing treatment with link to willingness to pay. 3. A central database, mass awareness to address breast cancer in Bangladesh. 4. Urbanization in Bangladesh: The Prevalence of Breast Cancer Brings Unique Challenges. 5. Incidence of breast cancer in Bangladesh 6. Evaluation of knowledge, awareness and attitudes towards breast cancer risk factors and early detection among females in Bangladesh: A hospital based cross-sectional study 7. A Cross-sectional Study on Breast Cancer among the Bangladeshi Female Population 8. Perceptions on Breast Cancer and Pattern: Medical Help Seeking Among Breast Cancer Patients 9. Awareness of breast cancer and barriers to breast screening uptake in Bangladesh: A population based survey 10. Epidemiology based study on the risk factors of breast cancer research: the Bangladesh perspective 11. Epidemiology of breast cancer among the female patients in Bangladesh 12. Improving Outcomes from Breast Cancer in a Low-Income Country: Lessons from Bangladesh 13. Two-Phased Strategy for Improvement of Breast Cancer Care in Bangladesh 14. Age distribution pattern of female breast cancer patients in Bangladesh developing early and presenting late. 15. Risk Factors and Barriers of Early Breast Cancer Diagnosis and Treatment Outcome in Tertiary Level Hospitals in Bangladesh 16. Bangladesh Society for Breast Cancer Study 17. A major flaw in "Awareness of breast cancer and barriers to breast screening uptake in Bangladesh: A population based survey" 18. Authors' response to Letter to the Editor on awareness of breast cancer and barriers to breast screening uptake in Bangladesh: A population-based survey 19. Lack of Understanding of Cervical Cancer and Screening Is the Leading Barrier to Screening Uptake in Women at Midlife in Bangladesh: Population-Based Cross-Sectional Survey 20. Risk Factors and Barriers of Early Breast Cancer Diagnosis and Treatment Outcome in Tertiary Level Hospitals in Bangladesh

Table 1. Breast cancer research in Bangladesh last decade.

The following table specifies the process for identifying the literature search where the years considered for ten years, the language is English, and the publication has been published past ten years has been used as a source of data coverage (Oxman AD, n.d.) (Oxman et al., 1994).

The methodology used in this Narrative overview is an unsystematic narrative review. Qualitative methods and numerous comprehensive narrative literature has been conducted conducive to writing this paper and synthesizing the data.

The details of how to get information about breast cancer awareness, knowledge, information sources and early detection are presented in this paper. This Narrative review reports the previous author's findings in a condensed format that typically summarizes the contents of each article

(DePoy & Gitlin, 1998). Some researchers suggest that a proper narrative overview should critique each study included, which was also applicable in this narrative review for the breast cancer conditions in Bangladesh. The broad overview of the past ten years of the article and the summaries will help the thesis to conduct findings which will help the future continuation of policy briefing, the recommendation in respected areas, primary and tertiary levels of treatment care, pinpointing the health trend and most importantly the prevalence and how to come up with a recommended solution path (Islam et al., 2016). According to (*Creswell, J.W. and Poth, C.N. (2018)*, 2018) in the association of narrative research, the qualitative approach is most effective when the researcher wants to analyze the life of an individual or group of individuals.

The numerous publications that have been synthesized for this article's writing found a strong connection between the keywords from the earliest detection of breast cancer element to knowledge and seeking treatment. The most desired result, which is surprisingly true, is that women often neglect the early symptoms as it's not common in Southeast Asia, specifically in Bangladesh, to talk and explore the reproductive organs. Criteria considered for this review included English-language articles that assessed, either retrospectively or prospectively, the role of the breast cancer research—particularly the context KAP (Knowledge, Attitude, and Practice)—may have had in women's initial breast cancer treatment decisions, as well as subsequent treatment behaviors (i.e., delay, adherence, hesitation for the appointments). The range of possible treatment options corresponding to an incident, primary invasive breast cancer diagnosis (Stages 1-4) were informed by the Bangladesh Society for Breast Cancer Study. In evaluating articles from over a decade of research in Bangladesh, we looked for breast cancer treatment behaviors such as (non)initiation, delay, (non)adherence, (non)compliance, (non)receipt, discontinuance, (non)completion, underuse, (non) attendance, canceled/missed/skipped appointments/ follow-up and refusal/decline.

Discussion:

Max Planck defined knowledge as how it shapes one's perspective and end goals in life. The fundamental pursuit of a healthy life starts from knowledge. Such as the ability to know and act at the right time. Knowledge provides self-esteem, a sense of purpose, role identity, life realization and a better-healthy life. A breast cancer diagnosis for a Bangladeshi woman can easily undermine aspects of her identity, disrupt her sense of normalcy and wreak havoc with her sense of control. The prevalence of breast cancer in Bangladeshi women and the research to address that in the past ten years has a gap. That gap in perception study to link with the right knowledge and mindset aiming for a healthy cancer-free life is a long way to achieve. The environment to the genetic factors, the adequate research facility to find the gap and improve the entire situation is the future aim but yet not impossible. The study (Mehejabin & Rahman, 2022a) shows that the prevalence of breast cancer has been 32.8% in Bangladesh for the last five years and is responsible for about 69% of women's deaths. Only in 2018 12,764 new cases were identified. Based on a recent study, the overall incidence of breast cancer was 22.5 per 100,000 women. (Amin et al., 2020b). When asked about their general breast cancer awareness, 64.4% of participants said they knew something about it. 17.2% of all participants said they had no idea what BSE was or how it was done. Almost 91% of participants had never heard of breast cancer screening programs, and 9% thought breast cancer was rare (Islam et al., 2016) (Thorat, 2016). The results of ten-year Research in Bangladesh summarize the participants' knowledge of breast cancer symptoms and risk factors. In the case of breast cancer, 27.6% of participants reported a change in nipple position, 57.8% experienced discomfort in one breast or armpit, 11% showed nipple dimpling, 62% reported breast redness, 71.4% reported a lump beneath the armpit, and 39% reported altered breast size and form. The individuals were also asked about breast cancer risk factors (Shariful Islam & Mohsan Khudri, 2018) (Nasrin et al., 2022) (Amin et al., 2020a). All subjects in this study had unique genetic make-ups and were older. 66% of the respondents had avoided breastfeeding, 17.4% had a painless breast lump, 5.2% had their first child at the age of >30, 65.4% experienced menarche at 11 years, and 90% used oral contraceptives often (Amin et al., 2020a).

The potential obstacles to breast screening should also be identified as a final step. Several participants (64.6%) were ashamed to tell others about their breast cancer diagnosis and had no idea what others, i.e. those in society, thought about it (62.2%). 53% of those surveyed were

concerned about stigma due to their breast cancer diagnosis (Amin et al., 2020c) (El-Shinawi et al., 2013) (Story et al., 2012).

Approximately 53.6% were uncomfortable exposing their breasts, 41.8% were afraid of hospitals and health facilities, 56.6% were concerned about what the doctor would find during screening, and 52.2% had difficulty communicating with the doctor. Most participants (58.6%) lacked understanding and feared mammography (60.8%), a critical procedure for identifying breast cancer. Also, 38.6% of participants were too busy or did not have time for screening, and 53.4% cited inadequate awareness campaigns (Story et al., 2012) (Hossain et al., 2014). Because breast screening programs can detect early-stage breast cancer, it was critical to identify potential screening obstacles. According to the findings, embarrassment was the most significant obstacle to breast detection methods (Al Mamun Khan et al., 2021). Based on the results, the majority of the participants were apprehensive, needed knowledge, and were less confident in solving their issues with healthcare professionals and members of society, which is consistent with previous studies (Sarker & Masum, 2018) (Mehejabin & Rahman, 2022b). The current study's findings show that a lack of knowledge of conducting BSE, seeking treatment, and socio-cultural factors against breast cancer may be the causes of Bangladesh's low level of breast cancer awareness (Nessa et al., 2018). Although the prevalence of breast cancer is increasing, more awareness campaigns and improved knowledge distribution may improve this reality. Healthcare professionals and the government can collaborate to develop an effective policy that can diagnose and raise awareness among females and the general public (Story et al., 2012) (Al Mamun Khan et al., 2021).

Conclusion:

Most female respondents were largely uninformed of breast cancer, lacked knowledge, awareness and experienced hurdles. Personal history, occupation and marital status were found to be more closely related to breast cancer. The most common perceived impediments were shyness, fear, lack of information and lack of awareness campaign. This study findings indicate that appropriate, suitable and socially acceptable breast cancer awareness initiatives will help raise knowledge and awareness, which will address the barriers among females in Bangladesh.

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