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Breast Cancer in Afghanistan: Issues, Barriers, and Incidence

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Abstract

The aim of this review is to discuss the incidence, issues, and barriers to care for women with breast cancer in Afghanistan that can increase mortality in women. Worldwide many people lose their life due to cancer every year. Mortality and morbidity rates due to cancer are estimated to increase in males and females in the future. The predictions are that nearly two-thirds of mortality for patients due to cancer might happen in developing countries due to issues access. Along with mortality and morbidity, cancer can negatively strain the economy and workforce of in underserved or economically challenged communities. Afghanistan is one of the low and middle-income countries that suffers from increased mortality rates due to cancer and its negative consequences. Afghanistan does not have a cancer patient registry and health coverage all over the country is limited. The limited data on cancer and evaluation of the burden of disease in developing countries is challenging. This article reviews data collected from Jamhoriat hospital in Kabul city Afghanistan. It is essential to perform studies on the incidences of cancers in different provinces of developing and economically challenged countries to appropriately formulate strategies and guidelines for the management of risk factors to decrease the burden of cancer on health systems and communities.
Keywords: Health literacy, breast cancer, access, developing countries, breast cancer treatment.

Introduction

The fast, unplanned, unorganized track of globalization in developing countries has changed the course and momentum of chronic diseases, including cancer. In 2018, nearly 18.1 million cases of cancer of various types were diagnosed with 9.6 million cases in low-and middle-income countries (Bray et al., 2018). According to the World Health Organization (WHO) (2020a), cancer cases are predicted to increase to 29.5 million, with 16.5 million mortalities annually in low-and middle-income countries. In developing countries, the incidence rate and mortality rate s

for cancer continue to rise when compared to developing countries (Torre et al., 2016).

Studies highlight that approximately 65% of cancer-related deaths occurred in developing countries in 2012 (WHO, 2022a), with a predicted 75% cancer-related deaths in developing countries by 2030 (WHO, 2020). Factors that lead to the difference between developed and developing countries are comprehensive preventive measures, early diagnosis, higher awareness, and optimal treatment (Sung et al., 2021).

According to the Institute for Health Metrics and Evaluation (2019), Afghanistan has 38.8 million people with a life expectancy at birth of 63.2 years for females and 63.6 years for males. In 2006, Afghanistan had 7.26 healthcare frontline workers (doctors, nurses, and midwives) per 10,000 people, and it was predicted that the number of healthcare professionals would increase to 9.12 doctors, nurses, and midwives over five years (WHO, 2022b). These estimates are still below the critical threshold of 23 doctors, nurses, and midwives per 10,000 population to deliver primary care (WHO, 2016).

In Afghanistan, as in other developing countries, data on the burden of cancer is limited. The health system models in Afghanistan and other developing countries focus on communicable diseases, malnutrition, and mother-child health (Shah et al., 2019). The management of cancer is challenging due to poor health system infrastructures, the lack of data management technology or disease registries, and poverty with the inability to provide optimal treatment to the patients.

In Afghanistan, to promote the management of cancer, it is essential to (a) improve capacity building in research and comprehensive strategies in oncology health services, (b) create high-quality data sources such as cancer registries to track the management and outcome of cancer management strategies and (c) allocate financial resources for cancer-related services (Prager et al. 2018). Also, promote programs to increase level of health literacy and access to affordable care.

Without organized financial resources to support the delivery of high-quality cancer-related services, addressing cancer mortality in developing countries is not feasible. On average nearly 37% to 50% of total healthcare expenses in developing countries are out-of-pocket (World Bank, 2017), making it challenging to create and fund infrastructures for the treatment and care coordination of chronic diseases such as cancer. According to the Institute of Health Metrics and Evaluation (2022) allocation of financial resources is not proportionate to the actual burden of cancer and other chronic disease in many countries. Furthermore, according to the Institute for Health Metrics and Evaluation (2019), the Afghan government spent $2.87 US dollars per person in the healthcare sector, whereas out-of-pocket expenses were $45.34 US dollars per person in 2018 (Institute of Health Metrics and Evaluation, 2022).

Currently, cancer management guidelines, palliative care, and universal health coverage in Afghanistan do not contain cancer preventive measures such as early diagnosis and screening processes for breast cancer and cervical cancer. According to the World Health Organization (2022c), nearly 30% to 50% of cancer cases can be avoided by applying evidence-based cancer preventive strategies and eliminating the risk factors. In Brazil, a study showed that screening through mammography improved the early detection of breast tumors from 14.5% to 43.2% (da Costa Viera et al., 2015). Alternatively, in countries such as Pakistan and Afghanistan with insufficient screening programs, early detection of breast cancer, and lower level of health literacy cause delays in early detection of breast cancer (Khan et al., 2021).

The purpose of this review article is to review research on the incidence of breast cancer for women in Afghanistan, and the effects of barriers to care, low health literacy, and influence of social media in relation to outcomes.

Breast cancer In Afghanistan

Annually, 1.7 million cases of breast cancers are diagnosed worldwide, and nearly 60% of deaths due to breast cancer happen in low- and middle-income countries (Torre et al., 2015). Alternatively, deaths due to breast cancer are decreasing in developed countries (Bray et al., 2018). In developing countries, higher rates of deaths due to breast cancers are multifactorial with limited patient awareness and access to

health care services, lack of access to cancer screening, lack of comprehensive preventive measures, low levels of health literacy, and a lack of understanding of environmental factors associated with the development of breast cancers (Francies et al., 2020; Jemal et al., 2012). According to Khan et al. (2021), people's lower awareness of breast cancer causes delays in seeking help and lack of attention to risk factors. Breast Cancer Awareness Month is an example of a strategy to improve public awareness to prevent delays in seeking care (Karabay et al., 2017).

According to the World Health Organization (2020b), the total number of cancer patients in Afghanistan in 2018 was 19,450, with total deaths of 14,746 which shows a nearly 76% mortality rate. Afghanistan does not have an organized cancer patient registry, and basic health services coverage, unrelated to cancer, was 39.3% in 2019 (Institute for Health Metrics and Evaluation, 2019).

In Afghanistan, data collection is challenging as the hospitals do not have digital medical records. Medical records are mostly incomplete and missing documents. A survey was conducted regarding the types of cancers in women in Afghanistan using Jamhoriat Hospital Cancer Registry. Data was collected for the year 2018 on women 18 to70 years old. Ethnicities from different provinces in Afghanistan who sought care in Jamhoriat hospital were included.

According to a review of the Jamhoriat Hospital oncology ward registry, there were 10,300 reported cases of confirmed cancer in 20018 the number of breast cancer cases was 3062, cervical cancer 694, carpus uteri 611, stomach 568, esophagus 563, and others 4802, (See Figure 1). The data revealed that breast cancer was the highest incidence compared with all cancers among the data reviewed for the target population.

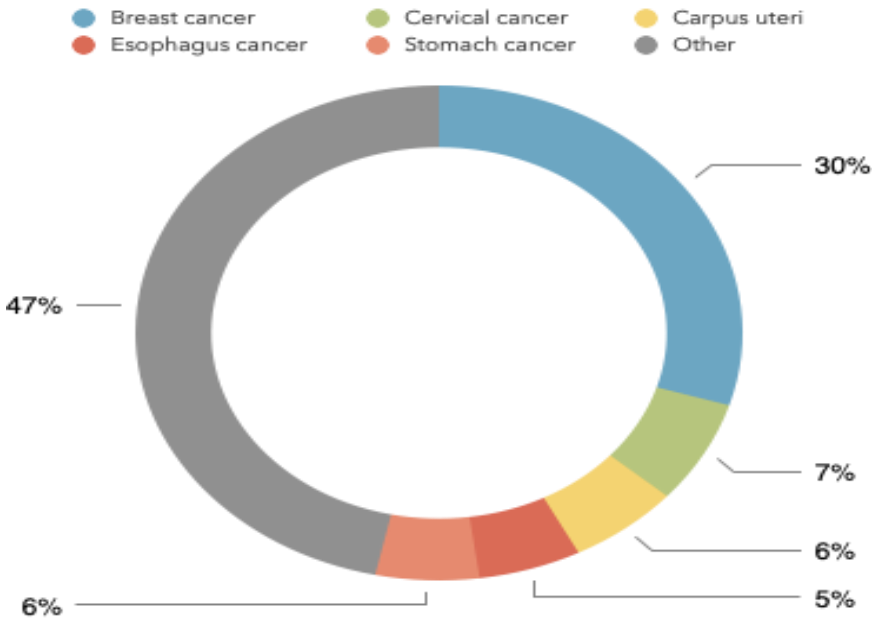

Figure 1

Data was collected from the cancer registry of one hospital in Kabul City. The possibility of missing data is high because the hospital does not have electronic medical records. The generalizability of the collected data is limited due to the unique population data for the target patient demographic. Data was from 2018 does not allow any comparisons from this data to the present incidence rates for cancer in the Afghan population.

Cancer Prevention Strategies

Some cancer prevention strategies have originated from observational studies in epidemiology that show a correlation between a particular type of cancer and reversible environmental and lifestyle

risk factors. Observational epidemiological studies cannot show conclusive, critical results. Therefore, more substantial evidence is needed to support the association of risk factors and certain types of cancers. Some results from randomized clinical trials have been used to evaluate the relationship between inevitable modifiable environmental exposures and cancer (Song & Giovannucci, 2016).

For example, preventive strategies to decrease the rate of tobacco use, infections (oncogenic strain of papillomavirus, Epstein-Barr virus, and Helicobacter pylori) (de Martel et al., 2018), and exposure to radiation (Dahal & Budoff, 2019) can potentially decrease various types of cancer. Low and middle-income countries can use the above preventive initiatives to proactively decrease the financial burden of developing multiple types of cancers in their high-risk population. To continue this review of cancer treatment in Afghanistan, it is necessary to cover risk factors for one of the most prevalent types of cancer in Afghanistan, breast cancer.

Breast Cancer Risk Factors

Breast cancer has several biological tumor subtypes that lead to the complexity of the disease (Harbeck & Gnant, 2017). Despite years of research on breast cancer, multiple questions are still unanswered. According to the Interagency Breast Cancer and Environmental Research Coordinating Committee (2013), most breast cancers can be caused by a combination of multiple factors over several years. Studies highlight that intrinsic risk factors can contribute to a limited percentage of breast cancer (Wu et al., 2016). Some of these intrinsic risk factors include female sex, family history, race, genetic mutation, the density of breast tissue, and previous exposure to radiation (Łukasiewicz et al., 2021).

Alternatively, modifiable and preventable risk factors such as obesity, alcohol use, smoking, lack of physical activity, and radiation exposure are accountable for approximately half or more incidences of breast cancer (Dartois et al., 2016). These breast cancer modifiable risk factors can be mitigated through lifestyle changes at the individual level and methods at the system level to decrease the risk of breast cancer (Daly & Olopade, 2015). In developing countries, the lack of comprehensive preventive practice guidelines to address modifiable risk factors along with a lack of patient awareness (low health literacy levels) have led to higher numbers of patients presenting to a health care facility with advanced stages of cancer. These risk factors make treatment challenging and expensive with a poor survival rates (Allemani et al., 2015). The lack of available healthcare services and low health literacy in developing countries are critical contributors to a higher proportion of patients seeking care at later stages, leading to a higher burden in cost and disease-related mortality. Low health literacy, insufficient screening programs, and lack of access to treatment are major contributing factors to poor outcomes in breast cancer in developing countries (da Cost Vieira et al., 2017).

Barriers and Influences

Barriers Related to Low Health Literacy

Studies highlight that patients with limited health literacy cannot appropriately comprehend the information provided by healthcare providers. Moreover, these patients cannot actively participate in decision-making, preventive, and self-care, which leads to frequent hospitalizations with the progression of cancer to advanced stages, higher cost of care, and poor outcomes (Liu et al., 2020).

Studies show that nearly 50% of women diagnosed with breast cancer had low health literacy skills and little knowledge about their disease (Halbach, 2016). Moreover, studies show that people with suboptimal health literacy have limited knowledge about their health and receive limited preventive care (Naghibi et al., 2016). A low level of health literacy leads to poor health outcomes and increases the financial burden on the health systems (Mahdavi et al., 2017).

Even though studies and strategies are limited regarding the impact of low health literacy in patients with breast cancer, some available interventional studies in patients with chronic diseases have shown optimistic results. For example, in a randomized trial, Reisi et al. (2017) indicated that education interventions based on the self-efficacy model in type II diabetes showed promotion of self-care and improved glycemic control. Alternatively, studies showed that patients

with limited health literacy are noncompliant with cancer preventive screening and treatment (Oldach & Katz, 2014). According to Sentell et al. (2015), women with a limited level of health literacy have lower breast cancer screening rates in the United States.

In Afghanistan, a study showed that women's help-seeking behavior positively correlated with their health literacy level. Women with a higher level of health literacy reported seeking care from a healthcare professional compared to women with a limited level of health literacy and either seeking care from non-healthcare professionals or not seeking care at all (Harsch et al., 2021). When discussing health literacy, it is also necessary to investigate the impact of social media on level of health literacy.

Impact of Social Media on Health Literacy

Social media is a term that entails websites and online formats that enhances communities to get, distribute, and create information via communication about various topics (Peck, 2014). Typical social media networks such as Facebook, Twitter, Instagram, and YouTube communicate topics of common interest among people and organizations.

According to Roberts et al. (2017), social media is a critical platform to make health information available, accessible, and affordable to a vast population easily and quickly. In 2016, a survey showed that 1.86 million use Facebook, 600 million use Instagram, and 317 million use Twitter monthly (Pew Research Center, 2022b). These social media formats can be used to appropriately distribute updated information on the risk factors, prevention, and treatment of breast cancers to women in developing countries with limited resources. In some conservative cultures, people avoid discussing or listening to discussions about female sex organs. Thus, social media can create room for privacy, and Afghan women can comfortably listen and read about breast cancer messages and increase their awareness of the need for preventive screening.

Levin-Zamir and Bertschi (2018) highlight that extensive health promotion initiatives and campaigns often do not yield optimal results when engaging various population groups with communication strategies that ignore the particular characteristics of different cultures and populations. Additionally, challenges of message distribution may not be addressed to fit the needs of the target population.

Furthermore, Levin-Zamir and Bertschi (2018) suggest some critical health literacy fundamentals that could foster more widespread health initiative promotions and enhance communications by conveying the message through social media in a format that the audience can comprehend and that aligns with their cultural values. Social media is an essential communication tool, and can assist healthcare providers in promoting health initiatives to a vast group of people efficiently and economically (Roberts et al., 2017). Social media is also widely used via smartphone technology worldwide, offering another avenue of access for prevention.

According to Pew Research Center (2022), nearly 62% of smartphone owners have used their phones to search for health information in 2015, which shows social media is an a potentially effective tool for health promotion initiatives and the disseminating information to bolster health literacy in the developing countries. Today social media and access to the internet are widely available to populations in low-and middle-income countries with increased access to both computer and smartphone technology (Roberts et al., 2017).

Barriers of Access to Care

Cancer patient management and treatment need comprehensive and multidimensional structures because all cancers are not the same. Some cancers treatment strategies involve surgical resection, chemotherapy, and radiotherapy (Shah et al., 2019). Unfortunately, Afghanistan does not have the infrastructure and lacks a comprehensive cancer treatment center. Afghanistan's health sector needs to focus on strategies and policies to increase and improve the availability, accessibility, and affordability of cancer treatment and post-therapy care continuum of care, improving follow up care and treatment coordination. Chemotherapy requires meticulous care and multidisciplinary interventions to manage the chemotherapy side effects and complications and evaluate patients' response to the treatment. Further testing is required using magnetic

resonance imaging and positron emission tomography scanning. Data on the precision of available imaging resources and costs and classes of available anticancer drugs in developing countries including Afghanistan are not known (Ocran Mattila et al., 2021).

Barriers of Access to Radiotherapy

The International Atomic Energy Agency (IAEA) Directory of Radiotherapy Centers (2008) database lists nearly 90% of available radiotherapy centers worldwide. Industrialized countries have one radiotherapy per 120,000 people, middle-income countries have one radiotherapy machine per one million people, and low-income countries currently have one radiotherapy machine for nearly five million people. Afghanistan is on the list of 51 countries that do not have access to radiotherapy facilities for cancer patients (IAEA, 2008).

Radiotherapy is one of the most economical treatments that is widely utilized worldwide where nearly 50% of patients with cancer receive radiotherapy (Basker et al., 2012). A study in Canada showed that for every 1000 newly diagnosed cancer patients, 52% needed radiotherapy during their disease course (Delaney et al., 2005). Moreover, the International Atomic Energy Agency (2010) report showed that nearly 60% of patients need radiotherapy during their treatment in low and middle-income countries. Even though approximately 85% of the world's population resides in developing countries, only less than 35% of radiotherapy facilities are available and accessible in developing countries.

Discussion

In Pakistan, like Afghanistan, breast cancer is the most common cancer among women, comprising nearly 30% of all female cancers (Sobani et al., 2012). According to the Karachi Cancer Registry, breast cancer entails 34.6% of all cancer types in women in Pakistan. Studies show breast cancer is more prevalent in women in Pakistan compared to other neighboring countries. One in every nine females has breast cancer (Bhurgri et al., 2007; Sobani et al., 2012). In general, Afghanistan and Pakistan have cultural similarities. In Afghanistan, women are hesitant to discuss anything about their breasts and therefore may not seek care if they notice a problem. For example, if there is a swollen mass in the breasts, in many cases, they will not talk about it to someone or seek care. In some cases, if the mass is malignant, it is usually too late when the women bring the issue to someone's attention. According to Qureshi et al. (2018), when the women in Pakistan do not have adequate information about breast cancer, cultural barriers significantly increase the possibility that patients do not seek care until it is too late, and outcomes are not optimal.

Making mammography and other advanced resources available can be challenging for Afghanistan due to their economic climate. However, the ministry of public health and non-governmental organization need to continue working on strategies to facilitate diagnostic and therapeutic options for patients, and promote programs to improve health literacy. Throughout history, even developed countries 50 years ago did not have the same access to therapeutics and diagnostics as they do now. These countries used their limited resources appropriately to assist patients which resulted in decreased mortality rates in breast cancer. For example, in 1975 cancer survival rates in the United States were improved compared to 1950 (Jatoi et al., 2005).

In addition to improvement in access to radiotherapy treatments, women in Afghanistan can benefit from educational intervention to improve awareness of risk factors, need for breast cancer screening, and raise their level of health literacy. The use of social media platforms can also assist in spreading the word to women in Afghanistan about the importance of screening for breast cancer. Jatoi et al. (2005) analyzed the data before 1974 in the United States and indicated that improvements in survival of breast cancers were enhanced by effective breast cancer education programs, breast cancer awareness programs, and effective diagnostics. Therefore, applying similar strategies in developing countries such as Afghanistan can be beneficial until people gain access to routine mammography and other auxiliary therapeutics.

Conclusion

Developing countries like Afghanistan with limited resources need to promote a primary preventive initiative to decrease the rates of

cancers in the communities, which is economical. In primary prevention, people have to know the causes and risk factors of breast cancer, and social media is an essential platform to efficiently disseminate health-related information to vast numbers of people. Furthermore, improving health literacy among the population can lead to compliance with screening and seeking care on time. Social media is an effective tool to disseminate breast cancer-related information in conservative communities and developing nations where women have limited access to informative resources. Future research needs to investigate the importance of improving cancer care infrastructures in developing countries like Afghanistan for improved access to care, up-to-date treatment methods and strategies, and access to state of the art equipment, resulting in improved patient outcomes and reduced mortality rates.

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