

Perceptions, Attitudes, and Practices towards Early Detection, Prevention and Survivorship of Cancer in Oman

Bassim Al Bahrani * and Itrat Mehdi

National Oncology Centre, The Royal Hospital Muscat – Sultanate of Oman

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***Corresponding author:** Bassim Al Bahrani, The Royal Hospital, P O Box 1331, code 111, Muscat, Oman.

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Abstract

Introduction: Cancer is one of the leading causes of disease related mortality and morbidity in the World. At advanced disease stages, the chances of curing cancer are very slim. Early detection and prevention remain the only reliable ways of managing cancer with a reasonably high success rate. In Oman, the total number of cancer cases and cancer incidence are mounting due to lifestyle changes and genetic predisposition towards specific types of cancer.

Objectives: Reflect on the situation of cancer prevention, early detection, treatment, and population perceptions of the disease in the Sultanate of Oman.

Methods: The research was conducted in the form of an analysis, which includes a complex synthesis of all accredited and available information sources about the subject. The information used in this study was extracted from accredited scientific journals, official statistics, and official sites of major healthcare organizations such as WHO, PACT, and others.

Conclusions: The Islamic faith is believed to have an immense influence on the Omani and Arab populations. However, this influence is debatable, as Islamic texts tend to have contradictory connotations. Some of these have a positive meaning and influence, while the others are detrimental to the acceptance of cancer treatment and necessary screenings. Government, healthcare providers, NGO's, Social services, and faith communities must work together to change the public opinion towards cancer detection, prevention, and survivorship, and improve the public perception and knowledge of cancer prevention by all possible means.

Key Words: cancer prevention; public perception; cancer survivorship; oman

Introduction

Cancer is that the most significant worldwide pathologic health problem with wide geographical variation in incidence and it has additionally become an important item in each country's health agenda [1-4]. The World Health Organization (WHO) asserts that cancer is one of the leading causes of morbidity and mortality in the World, increasing steadily [5]. Since 2012, the number of cancer patients has been increasing slowly, with over 14 million new cases occurring almost every year [6]. Simultaneously, the number of cancer-related deaths exceeded that of 8.8 million since 2015 [5]. Cancer is regarded as a Worldwide healthcare challenge for several decades now. It is the fact that there is no effective cure for cancer in its later stages, and early cancer detection or prevention remains the only effective response to the disease with any chance of successful outcome [7-11].

Conversely, cancer and cancer prevention views vary significantly across the countries and regions of the World [12-14]. Even in the more medically and technologically advanced countries in Europe and the USA, several stigmas are associated with cancer. Chemotherapy is viewed as a hazardous and ineffective treatment modality that significantly shortens the overall lifespan and leads to numerous complications and health issues in the future [15-20]. The situation is even worse in the Middle East, where religious views, perceptions, and opinions often interact with medicine and influence the public attitude on cancer and cancer



prevention practices. Education, understanding of disease mechanisms, possible influencing factors, and stereotyping all play an essential role in affecting the populace's perception of cancer. Understanding the population's views and the underlying issues behind attitudes are paramount to developing a coherent and effective preventive strategy to promote health and improve early detection and subsequent outcome [21-25].

This article aims to analyze early response and prevention measures to cancer and the population's perception towards cancer in Oman. The country maintains a comprehensive and developed healthcare system, which is accessible to all the people. According to the Action for Cancer Control program, Oman was expected to have a two-fold projected increase in cancer incidence in the period between 2008 and 2020 [26]. Understanding the reasons behind such a drastic increase and improving the means and chances of early detection and response to cancer is paramount for promoting healthcare and management outcomes in the Sultanate of Oman.

Methodology

The research was conducted in the form of an analysis, which includes a complex synthesis of all accredited and available information sources about the subject. The information used in this study was extracted from accredited scientific journals, official statistics, and official sites of major healthcare organizations such as WHO, PACT, and others. Also, this paper will feature the limited use of Omani national press releases to understand and perceive the views of the population towards cancer, cancer prevention, management, rehabilitation, and survival.

Scope and Limitations

The following analysis was aimed to reflect on the situation of cancer prevention, early detection, treatment, and population perceptions of the disease in the Sultanate of Oman. While this research results can be extrapolated for other countries of the Arabian Peninsula, the research limits itself mainly to the situation in Oman. Another limitation of this research comes from the format of the study. As this is qualitative literature research, it is limited in the use of sources. All information used in this research has been provided by someone else and did not come from a direct quantitative study and research performed on the Sultanate of Oman population.

An additional limitation of the study is that it reflects the population's attitudes and opinions and the overall situation in Oman between the years 2012-2017. As the status may change over the years due to the implementation of specific policies and the general political situation in the country and region, the information provided in the following research may become outdated with time. After a certain period of time, it would require being re-affirmed and re-validated.

The recommendations were based on the information available in the public domain for use and possessed a general connotation, not attached to any specific location within the Sultanate of Oman. Lastly, since this is a qualitative study, the provided information's conclusions and evaluations may be subject to bias and misinterpretation.

Significance of the Study

This study has two purposes. The first purpose is to develop practical recommendations that the Sultanate of Oman could implement to reduce cancer incidence and promote early response and detection of the disease. This makes the research significant for any stakeholders interested in promoting the health plan within the country. Besides, the research results could be interesting to other countries in the Arabic Peninsula, as they share many similarities with Oman, including religion, healthcare practices, traditions, and mutual history.

Other than that, the study results could be invaluable to any researchers aiming to perform a quantitative study about the perception, attitudes, and practice towards cancer early detection, prevention, and survivorship in Oman. The research could provide a suitable theoretical and informational framework to be used as a starting point for the formulation and development of the said study. The accumulation of relevant sources may enable future researchers to locate and use them in their endeavors, thus promoting inter-connectivity in the medical and scientific community.

Lastly, the research helps to create a scientific and historical continuity to the subject of managing and treating cancer in Oman, as it reflects on the progression of the public perception and methods of prevention and treatment of the disease in 2012-2017. In the future, this information would allow tracing said progression in the scope of a wider, all-encompassing review.

Literature Review

The dynamics of cancer incidence in the Middle East differ from those in Europe, the USA, or the Far East, due to a unique combination of factors and the circumstances in these countries. The study by Hilal et al. [15] is dedicated to prostate cancer, yet this study's results can be generalized to other cancer types in this region's entirety. The study found that the factors affecting cancer rates in Arab countries [27-31] generally and Oman as well include relatively young age, lower androgen and antigen levels in Arab men, metabolic syndrome paradox, and Mediterranean diet patterns prevalent in this region. The study suggests that a variety of regional and country-specific factors could be causing or preventing the spread of cancer in Oman. It highlights the positive effect of the Mediterranean diet that includes many vegetables, grain, and low amounts of fat as one of the positive factors that prevent the apparition of cancer in Arabs. At the same time, it provides crucial information on our population's genetic predisposition towards particular types of cancer.

Breast cancer is the most common cancer in women [3,6,9]. A study published by Cohen in 2013 [32] reflects on the cultural perceptions of breast cancer among Arab women. According to Cohen [32], Arab women in Israel have a low early screening attendance rate compared to other groups of patients. Non-attendance is primarily associated with personal religious views and beliefs regarding healthcare, particularly the "health belief" model. This model states that perception of the disease will inevitably lead to perception provoking a reaction of not attending cancer screenings out of fear that it may elicit disease. The research also showed a disparity of views towards cancer as a healthcare problem, ranging widely from traditional to modern and integrated medical views on the subject. The latter is



motivated by education and family background. The primary supporting factor contributing to survival and the desire to live among Arab breast cancer patients inferred to be familial support, common due to the collective and clustered nature of Arab families and religious guidance. This study is essential in our research scope because it reflects on Arab women in highly developed hospital settings, which are compatible with those in the Sultanate of Oman. Simultaneously, any information related specifically to Israeli healthcare was not used in the following discussion due to apparent differences between the two countries, the state religion, and the approach towards healthcare.

Oman is not the only state among the Arabian Peninsula countries that had experienced a gradual increase in cancer incidence. Other developed countries in the region, such as Qatar, have also experienced the same problem, which is largely driven by changes in lifestyle and the increasing Westernization of the youth, and dietary changes and climatic alterations perceivable across the World. Donnelly et al. [33] find that the main factors for women not attending cancer screenings were a lack of doctor's recommendation, fear, and embarrassment. These are culturally-motivated factors stemming from cancer's highly personal nature and the fear of being looked upon as "diseased" among Arab women. This study's results correlate with the findings presented by Cohen [32] pertaining to the attitudes of Arab women towards cancer screenings in Israel, thus showing a cultural pattern of the issue being viewed as taboo. Unlike Israel, Qatar bears more similarities to Oman in terms of quality and national identity of healthcare due to both being Arab nations. This research shows that the cultural views on cancer screenings in women remain similar across several countries in the Middle East and are largely motivated by cultural and religious homogeneity.

The ability to recognize symptoms of cancer is considered paramount to the efforts of early prevention of cancer. Despite overall high-level healthcare compared to the low-income and middle-income countries of the region, Oman has a surprisingly low level of public awareness of warning signs and cancer symptoms. This could be a potential factor to contribute to growing cancer incidence and mortality rates in Oman. A survey performed by Al-Azri et al. [34] showed a surprisingly high rate of ignorance among Omani men and women aged 18 and older. According to the survey, the total awareness of the participants who took the CAM (Cancer Awareness Measure) questionnaire amounted to 40.6%, which is very low. The survey managed to identify the major cultural, practical, and emotional barriers among the respondents. The most pervasive barriers included fear of the doctor finding any cancer symptoms (65.6%) and the failure to talk to the doctor about cancer (46.1%). The most common practical barrier to screening tests involved the inability to make time for an appointment due to work and general business (75.1%). The study also showed that women were more likely to avoid medical help due to fear, shame, and embarrassment. This study highlights a significant barrier for this well-developed and efficient Omani healthcare – being relatively ineffective against cancer. Al-Azri et al. [34] advocate an urgent need for the Sultanate of Oman to improve the public awareness and knowledge of cancer if the incidence and mortality rates for cancer are ever to go down. This research resonates with other survey findings done in other countries, highlighting the fact that public healthcare in countries of the Arabian Peninsula has advanced much faster than public knowledge and perception.

Another study performed by Al-Azri in 2016 [35], titled "Delay

in cancer diagnosis: Causes and possible solutions," addresses the necessity of early detection in cancer treatment. According to the researcher, cancer has a reasonably higher treatment success rate if managed at an early stage. However, more the disease progresses, the more likely it is for treatment to fail. Al-Azri reflects on the results of the CAM survey performed by his team in 2015 and states that one of the main reasons for delays in cancer diagnosis is related to Oman's educational system. Although the standard school curriculum features extensive cancer information, it never addresses any practical means of self-diagnosis and description of the symptoms, which is especially true for breast cancer. This conclusion resonates with the findings of other researches as well. However, Al-Azri highlights another problem that is more relevant to the Omani healthcare system. The hospital system in the Arabian Peninsula countries is surprisingly uniform and consists of a network of local health centers and hospitals. Primary healthcare centers are supposed to identify cancer symptoms and direct the patients for a more in-detail screening to a better-equipped facility. This creates a potential delay, which has the possibility of further complications. Also, the system to diagnose early is far from perfect, as the patient is often required to travel to get a second opinion, sometimes even abroad. This creates a loop in the continuity of care, which in turn causes delays and complications, reducing the probability of successful treatment.

Faith has a major influence Oman's people and on Arabs in general, as Islam is the dominant religion in the region. According to the study conducted by Albar [36], Islam as a religion strives to protect its followers against cancer by prohibiting certain products and activities associated with cancer like the use of tobacco, alcohol, or addictive substances. Tobacco is known to be a major carcinogenic substance, responsible for the majority of lung cancer around the World. At the same time, Islam prohibits excess in food consumption and the consumption of certain fat-saturated meats such as pork. Thus, it contributes to the overall healthiness of Arabs and acts as a pre-emptive measure against cancer. While this effect of the faith can be considered positive, religion may hurt on early response and treatment to the disease. This is due to the fact that the Quran sends several debatable messages regarding diseases, which may have different effects and interpretations. For instance, Islam teaches not to fear death because our time of existence is short and the soul is immortal, while the body is not. At the same time, Quran states that Allah sends troubles and misfortunes upon his servants to test their faith and rewards those who patiently persevere. It is also perceived that all good and bad are from Allah being in one's destiny and should accept it as such. Lastly, according to Albar [36], faithful Muslims who die of disease are considered martyrs in the eyes of Allah. These three factors, in combination, may lead the population to a conclusion that ascend to a different plane of existence, they must not prolong their time in this World and not seek cancer treatment even at the stages when they could still be saved. While it is their personal decision, it does not help decrease the incidence of morbidity of the disease.

Social media plays a vital role in promoting health and education besides forming public opinion towards cancer prevention, cancer screenings, and cancer survivorship. Cancer survivorship, in particular, is being viewed as an example of fortitude, bravery, and dedication to life. An excellent example of this trend is a news article featured in the Times of Oman, which tells the story of Doaa Elseoud, named the most inspiring cancer survivor in Oman



[37]. In the interview regarding her survivorship, Doaa covers crucial aspects of fighting cancer on an individual level – the importance of the support of friends and family, the importance of self-examination and early prevention, value of discipline in enduring prolonged cancer treatments, and the positive influence of faith in her recovery [37]. She also touches on the issue of cancer survivorship in Oman and other Arab countries, describing the issue of perceived shame of cancer survivorship. This causes many women to hide the signs of being treated, such as covering their heads when undergoing chemotherapy and not disclosing the issue with anyone, even close friends and family, thus denying themselves an important source of emotional support and potential health education for others [37].

Prospects for Oman to improve its cancer incidence and survival rates are still promising. The country is making an effort to solve cancer problems through high-quality healthcare and an all-encompassing cancer prevention program. Since 2015, Oman has become the cancer-prevention body hub – an initiative that stretches beyond one single country's borders instead of aiming to encompass the entire region. Other countries contributing to this effort are Kuwait, Bahrain, Saudi Arabia, Ethiopia, Kenya, Tanzania, Egypt, Zambia, and Tunisia [38]. This initiative involves co-operation between different healthcare systems to establish a unified patient database, allowing for faster sharing of data and improving cancer detection and prevention. The countries acknowledge the need for better disease prevention at the early stages because chances of survival during the 3rd and fourth stages of cancer are extremely low [38]. The most common types of cancer in Arabic countries are stated to be breast cancer for women and prostate cancer for men [38].

Discussion

After thoroughly reviewing the data assembled in this research, it is possible to construct a cohesive picture of the situation concerning perception, attitudes, and practices towards early cancer detection, prevention, and survivorship in Arab countries and Oman. This discussion mostly focuses on the healthcare system's identified problems and the public perception of the problem.

Although the country maintains a highly developed healthcare system that is competent and well-equipped for handling cancer patients at all stages of the disease, the current system lacks the optimization required for a prompt diagnosis of disease. This notion is supported by Al-Azri [35], who states that cancer incidence rates largely depend on how rapidly they are diagnosed. The current system does not offer any effective ways of obtaining a second opinion on diagnosis, which is often taken abroad, causing delays in treatment and impairs the continuity of care.

The most common types of cancer encountered in Oman and other Arabian Peninsula countries are breast cancer, prostate cancer, and colorectal cancers. This assertion sustained by Hilal et al. [15], Cohen [32], and Donnelly et al. [33], who states that the Arabs are vulnerable to these particular types of cancers due to genetics, type and nature of food, swift changes from one lifestyle to another one, pollution, and cultural barriers. Breast cancer is most prevalent in women, while prostate cancer in men.

The foremost means of cancer detection and prevention, which is public awareness and health education, is rather exceedingly poor and inadequately developed in Oman and other Arab countries. This is supported by Al-Azri and his CAM survey conducted in

2015 [34], as well as by other sources to various scales. The Omani healthcare education system is disappointingly poor at all levels, from government programs to individual efforts by doctors and nurses. Cohen [32] and Al-Azri [35] both indicate that, in general, doctors fail to convey comprehensive information about cancer to patients and their families. While dedicating some attention to explaining the mechanisms of cancer, the school curriculums in Oman do not pay adequate attention to describe major symptoms and methods of self-diagnosis. This contributes to the existing lack of early diagnosis and prevention efforts.

The population in Oman and other Arab World expresses a wide range of opinions regarding cancer detection and prevention. These range from traditionalist to modern biomedical perceptions and are highly dependent on a particular patient's background [32] and their education and intellectual level. Despite this, most of the population in Oman has a skewed perception of cancer prevention, detection, and survivorship. This is displayed by feelings of fear and shame in patients, being reluctant to undergo screening programs [33]. This fear is associated with inadequate knowledge of cancer and how it can be treated. The common stereotype perception is that cancer is essentially incurable and that chemotherapy is a prolonged and harmful procedure that makes a person suffer more in the long term. These beliefs are correlated to the issue of cancer education, as already mentioned. This lack of knowledge is compounded by rumors and stereotypes. In the Arab society largely dominated by males, women feel particularly conscious about their health and appearance. The women's perception is that cancer is associated with diminished value as a woman and a person, which leads to avoidance of cancer screenings and treatments [33].

At the same time, the Arab society views cancer survivorship as an issue that one should be hiding and ashamed of. Most cancer survivors hide that they were diagnosed with cancer and underwent chemotherapy or other cancer treatment forms. They cover the marks of treatment underneath the clothes or overhead cover. Hair loss associated with chemotherapy is rejected by women, who are expected to have long, beautiful hair. This tendency, however, is changing with time as more progressive and pragmatic views are being adopted. The story of Doaa Elseoud showcases this trend, as cancer survivors are being turned from a shunned entity into becoming the symbols of bravery, endurance, and determination to live [37].

The Islamic faith is believed to have an immense influence on the Omani and Arab populations. However, this influence is debatable, as Islamic texts tend to have contradictory connotations. Some of these have a positive meaning and influence, while the others are detrimental to the acceptance of cancer treatment and necessary screenings. According to Albar [36], Islamic faith tends to have a positive connotation in the prevention of cancer and promotion of a healthy way of life, while at the same time a negative connotation regarding the acceptance of the disease and willingness to depart to another World, rather than clinging for life [36].

These are the major issues with the public opinion and the general state of the Omani healthcare system regarding cancer prevention, detection, and survivorship. The following recommendations would address issues identified in the discussion section and describe the ways of how these issues could be addressed.

Recommendations and Conclusions



The following recommendations are intended to focus on the perceptions and problem of cancer prevention and early detection by making improvements in key areas and involve major stakeholders within the healthcare system, the government, and the faith. Together, these stakeholders should adopt a composite and all-inclusive approach to improve cancer incidence and morbidity rates.

The first step to be taken involves the promotion of healthcare education at all possible levels, ranging from individuals to schools and universities. The curriculum must be revisited to include the basics of self-examination and significant cancer symptoms and the reporting and referral system mechanisms. Besides, from primary healthcare to major hospitals, all healthcare providers must join in periodic campaigns to inform the population about the dangers of cancer, major carcinogenic factors, self-care, self-diagnosis techniques, major symptoms, whom to approach, and a pathway of reporting. The promotion of screening tests must be encouraged. Screening tests should be made available by the Omani government to the population. These combined measures would help shift the viewpoint from traditional harmful stereotypes to a biomedical approach. This should translate in improving the screening attendance rates and the overall attitude towards preventive medicine.

Members of the Religious and Faith communities can promote a positive attitude towards cancer detection, prevention, and survivorship. The leaders of Muslim religious communities must explain to their members in definite terms that there is nothing shameful or wrong with screening tests and that not fighting for survival and doing everything in their power to live is against the will of Allah. One of the ignored tenets of Islam faith states that it is a sin against God to take one's own life or to perform actions that would, in the end, lead to the cessation of life. Inaction against cancer could be preached to be considered just that – a termination of life.

The Islamic faith is believed to have an immense influence on the Omani and Arab populations. Social services, medical personnel, and faith communities are to work together to change the public opinion towards cancer detection, prevention, and survivorship. Working through mass-media and other available channels, it would be possible to improve screenings' attendance and reduce the social stigma that follows cancer patients and cancer patients alike. Education is the answer. If the situation remains as it is, it is bound to worsen and lead to increased mortality and morbidity among the population from cancer.

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