



Promoting Saudi Oncology Nursing Education Opportunities, Training Experiences, and Research Field

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ABSTRACT

In the Kingdom of Saudi Arabia, the incidence of cancer is escalating. Whilst the precise root of this trend is uncertain, it may at least in part be related to longer life expectancies and alterations in attitudes towards life. The severe lack of oncology healthcare workers, including nurses, is one of the major obstacles to providing adequate cancer and palliative care. The Islamic religion, culture, and distinctive traditions of the Kingdom of Saudi Arabia may make working as an oncology nurse in Saudi oncology care settings particularly challenging. Based on research describing the difficulties nurses faced when delivering cancer care within the Saudi Arabian healthcare system and its cancer care services, this article gives an overview of cancer care and oncology nursing in the Kingdom of Saudi Arabia. The advent of novel cancer therapeutics has brought about a transformation in the domain of cancer management, including the nursing profession's involvement in supporting patients undergoing combined or integrated treatment. In order to effectively assist their patients throughout the cancer journey, ensure patient safety, and enhance understanding of innovative medications, it is imperative that oncology nurses possess up-to-date knowledge and expertise in the field. As per the definition provided by the National Cancer Institute Dictionary, Oncology is a specialized field of medicine that focuses on the identification and management of cancer. The field of oncology encompasses three primary modalities for treating cancer: medical oncology, which employs chemotherapy, hormone therapy, and other pharmacological agents; radiation oncology, which utilises radiation therapy to treat cancer; and surgical oncology, which involves surgical interventions and other therapeutic approaches to achieve cancer remission. Oncologists are medical professionals who specialise in the treatment of cancer. The healthcare practitioners collaborate closely with their peers in the field, including radiologists, pathologists, and nurses, to deliver a holistic approach to cancer patient care.

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INTRODUCTION

According to Oncology Nursing Society "Oncology nursing is a nursing specialty that aims to lower the risks, incidence, and burden of cancer by promoting healthy lifestyles, encouraging early detection, and improving the management of cancer symptoms and side effects over the course of the disease [1]." Lubejko posits that the objective of oncology nursing is to assist individuals who are susceptible to or have already been diagnosed with cancer in attaining optimal quality of life and outcomes [2]. Oncology nursing includes nurses who work in a wide range of jobs and settings.

As advances in radiation, cellular, medicinal, and surgical interventions for cancer prevention, diagnosis, and treatment continue, oncology nurses play a crucial role in developing, implementing, and educating patients and healthcare professionals on the latest cancer therapy advancements. The primary aim of nursing in the field of oncology is to provide comprehensive and patient-centered care to those who are afflicted with cancer and their loved ones. This includes managing symptoms linked to cancer such as pain, fatigue, nausea and so on, as well as providing emotional support, education, and counseling to assist patients and their families in navigating the challenges associated with a cancer diagnosis and treatment.

In Saudi Arabia, nursing education has undergone numerous changes [3]. Due to the lack of nursing leaders and trustworthy workforce statistics throughout the past few decades, Saudi Arabia's nursing landscape has not developed and grown in line with global nursing trends which has increased the prevalence of cancer there. The healthcare system in Saudi Arabia, especially the nursing system, education and workforce, oncology nursing, cancer, and cancer treatment and support urgently need

promotion, support and the best attention from her government, politicians and stakeholders. In the event that the challenges facing the healthcare, cancer care, and oncological nursing systems are not expeditiously addressed, there is a possibility that the country may experience a decline in global appeal. In his article titled "The Incidence Rate of Esophageal Cancer in Saudi Arabia: An Observational and Descriptive Epidemiological Analysis," Almatroudi³ highlights the global prevalence of cancer and specifically draws attention to esophageal cancer as a rapidly fatal form of cancer in Saudi Arabia. As per the 2019 report by the World Health Organisation (WHO), cancer has been identified as the primary or secondary leading cause of death in multiple countries, in as many as 112 out of 183 nations. Furthermore, it has been ranked as the third or fourth leading cause of death in 23 additional countries. According to the International Agency for Research on Cancer (IARC) in 2018, it is estimated that there were approximately 9 million deaths globally that were attributed to cancer. Esophageal carcinoma is a prevalent form of cancer that ranks as the eighth most commonly occurring cancer worldwide. It is also the sixth leading cause of cancer-related mortality. As per the findings of a report published by Globocan, it has been observed that Saudi Arabia and Iraq have recorded the highest number of new cancer cases and fatalities associated with esophageal cancer in men, among the Gulf regions [4]. Esophageal cancer was found to be the leading cause of new cancer cases and deaths in women in Iraq, with Saudi Arabia following closely behind, across all age groups.

The aforementioned claims and assertions highlight the significance of appropriately training cancer healthcare professionals for the advancement of a nation's healthcare system. As such, this literature review will examine the challenges faced in oncological nursing education, training, and research. It will also emphasise the critical need to prioritise and improve the training of cancer care nurses in Saudi Arabia, given its paramount importance.

REVIEW OF RELATED SCHOLARSHIP

Saudi Oncology Nursing and International Health

The field of oncology nursing has gained significant prominence in Saudi Arabia due to the surge in cancer cases observed in recent times. The shortage of Saudi citizens in the oncology nursing workforce makes oncology nursing in KSA a significant concern for healthcare leaders.

The study conducted by Alrasheedi et al. (2018) titled "Factors influencing nurses' intention to work in the oncology specialty: multi-institutional cross-sectional study" investigates the various factors that affect the intention of nurses to pursue a career in the field of oncology [5]. Intention refers to the cognitive process of planning to enter, continue, or leave the oncology specialty. The project focused on two research concerns aimed at supporting the development of a proficient Saudi oncology nursing workforce that can deliver effective palliative care:

- 1) What are the career intentions regarding oncology nursing among three distinct groups of Saudi Arabian nurses?
- 2) What influences nurses' intentions toward a career in oncology nursing?

The study conducted by Alrasheedi and colleagues provides novel perspectives on the challenges encountered by the oncology nursing workforce in Saudi Arabia and proposes potential solutions [5]. In the context of developing a strategic plan for the future of the oncology nursing workforce in Saudi Arabia, it is imperative to consider key research findings. These include the relatively low level of interest in the oncology specialty among nursing students, the possibility of losing current oncology nurses, and the significant influence of attitude on the decision to pursue a career in oncology nursing.

According to Bray et al.'s estimations, Cancer is widely acknowledged as a significant global health issue and is among the primary causes of mortality on a global scale [6]. In recent times, noteworthy progress has been achieved in the domain of cancer prevention and treatment. Notwithstanding, the incidence of cancer is on the rise. In the year 2018, there was a global estimation of around 9.6 million deaths caused by cancer and 18.1 million new cases of cancer.

The study titled "Cancer Management in Saudi Arabia: Recommendations by the Saudi Oncology Health Economics Expert Group (SHARP)" conducted by Alkhudiar et al. analysed the key factors influencing the existing cancer management system in the country. The researchers suggested prioritising care based on values, while considering the available data, patients, and costs. At the conclusion of their study, Alkhudiar and colleagues provide a summary of the recommendations put forth by SHARP regarding the four primary domains of cancer care that are affected by regulation, purchasing, therapy, and patient care. The aforementioned suggestions align with the objectives of Saudi Vision 2030, which aims to enhance cancer care and therapy by adopting a comprehensive and integrated strategy that emphasises value-based care, prioritising patient outcomes.

Challenges in Oncology Nursing Education and Training In Saudi Arabia

Given the rising incidence of cancer in Saudi Arabia, it is imperative to prioritise efforts towards mitigating cancer care disparities and advancing cancer control measures [7]. Nursing professionals occupy a crucial role in the healthcare system and possess a unique advantage to interact with patients, communities, and fellow healthcare professionals and providers. The dynamic and ever-changing nature of cancer treatment calls for the expertise of oncology nurses who possess specialized knowledge and skills to deliver clinical care and support research initiatives aimed at promoting evidence-based practises.

The scholarly article authored by Oti et al. titled "Strengthening Oncology Nursing Education and Training in Africa during the Year of the Nurse and Midwife: Tackling Challenges to Enhance Cancer Control in Africa" assesses the present state of oncology nursing education and training in Africa. The article primarily focuses on identifying the challenges that need to be addressed to improve cancer control in the region. [8]. The authors have undertaken a study that focuses on the present scenario in Africa, a neighbouring continent. They have deliberated on methods to improve the education and training of oncology nurses to effectively tackle the obstacles in cancer control. This study aims to investigate the proliferation of oncology nursing education and training in Africa, focusing on select countries as representative examples. In the year 2020, the global community recognised and celebrated the International Year of the Nurse and the Midwife. A comprehensive map was produced during this period to delineate the diverse educational and training prospects accessible for oncology nursing in Africa. The map mentioned earlier provides a valuable chance to incorporate the essential contributions of oncology nurses and create a feasible plan for progress and growth in this field, with a specific focus on achieving long-term goals up to 2030 and beyond. The findings of the study indicate that the primary obstacles encountered by oncology nurses in Africa pertain to financial constraints, insufficient management practises, and regulatory concerns.

According to the study conducted by Oti et al., there exists a notable association between policy and funding opportunities. The accessibility of financial resources for educational programmes in cancer nursing is notably impacted by the current socioeconomic and political climate of a given nation. It is unfortunate that a considerable portion of the population is obligated to assume the economic responsibility for their personal academic pursuits. The hegemony of the medical field and the existence of professional boundaries may lead some financial establishments to deprioritize the funding of nursing education, as they may perceive nurses to have a comparatively lower influence on patient care plans and results.

The article titled "Overview of Cancer Care and Oncology Nursing in the Kingdom of Saudi Arabia" by Wazqar et al. delved into the prevalent obstacles faced by oncology nurses in Saudi Arabia [9]. Based on their research, the presence of elevated job demands, understaffing, linguistic and communicative obstacles, and cultural disparities can all contribute to stressful work environments, which may have an adverse effect on the standard of care given to patients. The authors propose that nursing administrators and managers take into account certain factors and implement appropriate measures to improve the work environment for Saudi oncology nurses and raise the level of nursing care provided to cancer patients and their families.

Shortage of Well-Trained Oncology Nurses in Remote Areas

Within the Kingdom of Saudi Arabia (KSA), there exists a considerable dearth of seasoned nursing and healthcare practitioners specialising in cancer care, particularly in the expansive and secluded rural areas where roughly 20% of cancer patients are situated [12]. In rural and remote areas, cancer patients often receive healthcare services from non-oncology specialists, including general physicians, family physicians, and staff from gynaecology obstetrics units. Regrettably, this circumstance results in a postponement of the diagnosis and solely steers patients towards oncology treatment centres located in prominent urban areas within the Kingdom, once their cancers have progressed to advanced stages (stage 4), thereby contributing to an elevated cancer fatality rate. The study conducted by Waqar, et al is a significant contribution to the field [9]. Despite the presence of proficient oncologists and state-of-the-art interventions in the Kingdom of Saudi Arabia, a considerable number of cancer patients tend to delay seeking medical attention until their condition has progressed significantly. This delay in seeking medical care poses a significant challenge to the successful treatment of cancer in these patients.

Lack of Educational Facilities among CancerCare Workers

According to scholarly research, several factors may contribute to delays in cancer diagnosis and treatment in Saudi Arabia. These include insufficient educational programmes for cancer care workers provided by local healthcare organisations, inadequate access to accurate health information regarding cancer risk factors and treatments, misunderstandings about supportive palliative care and the appropriate use of pain-relieving narcotics, and low levels of knowledge and health literacy concerning

cancer and its prevention among the Saudi population. As per the research conducted by Wazqar et.al, it has been observed that Saudi Arabia (KSA) has demonstrated a significant dedication towards imparting education and training to healthcare professionals in the domains of cancer and palliative care [9]. At present, a notable percentage of oncologists who are practising in the Kingdom of Saudi Arabia have acquired their academic and professional credentials from educational establishments situated in North America. Despite the advancements achieved in cancer and palliative care education, a dearth of oncology healthcare providers, comprising oncology nurses, persists. The insufficiency of resources poses a significant obstacle to patients seeking access to specialised oncology screening, therapy, and healthcare services. Hence, it is advisable that the Kingdom of Saudi Arabia's government assumes a proactive stance in endorsing the education of healthcare practitioners in the management of cancer.

Performance: Skill and Competence Deficit

In their study entitled "Challenges and Policy Opportunities in Nursing in Saudi Arabia," Alludian et al. identified four primary themes that highlight the difficulties encountered by the nursing profession in Saudi Arabia. These themes include availability, performance (encompassing skills, competencies, and motivation), distribution, and governance and management. The authors note that South African nurses exhibit deficiencies in both their skillset and knowledge base. The study revealed that a significant number of nurses in Saudi Arabia exhibit deficiencies in their knowledge and comprehension, which may impede their ability to provide superior healthcare services. It is imperative for nurses in the Kingdom of Saudi Arabia to consistently enhance their knowledge and competencies throughout their academic pursuits, professional experience, and tenure in the field. One potential strategy for tackling this issue involves the adoption of uniform competency-based educational programmes throughout all institutions of higher learning situated within the Kingdom of Saudi Arabia.

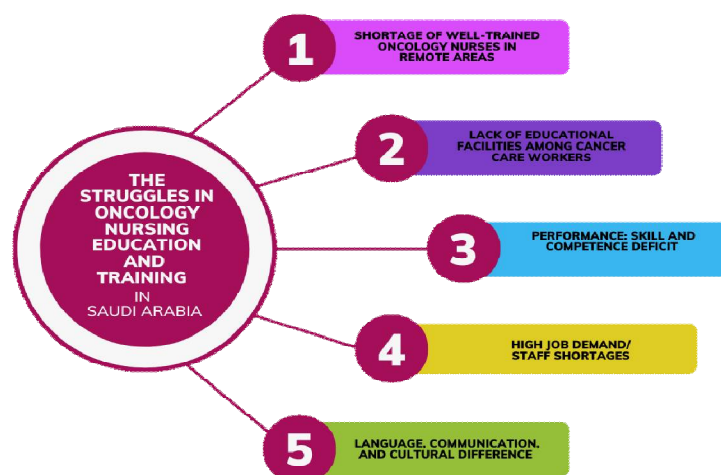


Figure 1: Need for Saudi Arabian Nurses to Undergo Comprehensive Cancer Care Training - a graphical representation.

Alqahtani et al. conducted a study which revealed that nurses in the Kingdom of Saudi Arabia (KSA) demonstrate inadequate knowledge, assessment skills, and pain management abilities [11]. The study conducted by the researchers pertains to the quantitative analysis of the knowledge and attitudes of oncology nurses towards pain management in hospitals located in Saudi Arabia. The findings of this research provide valuable insights into this pertinent issue. The National Academy of Medicine, previously known as the Institute of Medicine, addressed concerns by publishing a study in 2010 titled "The Future of Nursing: Leading Change, Advancing Health." The study emphasised the importance of improving nursing education and practise by implementing nursing competencies. Subsequent to that time, the field of nursing has taken measures to enhance its practise by means of educational guidance, mentorship, preceptor-led instruction, and systematic assessments of competence to ensure proficiency. Throughout the entire cancer trajectory, nurses consistently deliver exceptional care by evaluating levels of proficiency and addressing any deficiencies in their practise.

To Demonstrate an Advanced Degree of Expertise

The prioritisation of enhancing the training of cancer care professionals is a critical imperative. Pirschel's essay titled "Competencies Create Expert, Accountable Nurses Delivering Quality" asserts that the provision of cancer care within the nursing profession necessitates a heightened level of education and training in order to adequately address the unique requirements of patients. The intricate and demanding

nature of the care required for cancer patients may exceed the capabilities of novice oncology nurses [10]. Within the field of oncology, patients and their families depend on nurses in a manner that is specific to the provision of cancer care.

Oncology nurses are recognised for their multifaceted responsibilities, including serving as educators, advocates, careers, and essential intermediaries between patients and healthcare professionals [11]. In order to guarantee the safety of patients and provide care that is grounded in empirical evidence, it is imperative that oncology nurses uphold a standard of knowledge and proficiency that is of the utmost calibre. This entails comprehending the complexities of cancer therapy, cooperating with interdisciplinary groups, and incorporating safeguarding procedures into their routine execution.

To Demonstrate an Advanced Degree of Knowledge especially on Breast Cancer

Insufficient knowledge among nursing professionals may impede their capacity to efficiently advocate for life-saving techniques. Downs-Holmes and Silverman have identified a spectrum of risk factors that are correlated with the onset of breast cancer [13]. Several factors have been identified as potential contributors to the development of breast cancer, including but not limited to, increasing age, hormone replacement therapy (HRT), high dietary fat intake, excessive alcohol consumption, smoking, and a positive family history of breast cancer. According to Herman et al., it is imperative for nurses to have a thorough understanding of the aforementioned risk factors and preventive measures in order to effectively educate patients [14]. Competent nurses have a pivotal function in facilitating timely detection of breast cancer and can serve as effective educators, fostering knowledge acquisition and consciousness regarding the ailment.

In their publication titled "Do Saudi Nurses in Primary Health Care Centres have Breast Cancer Knowledge to Promote Breast Cancer Awareness?", Yousuf et al. emphasised the importance of Saudi oncology nurses maintaining current knowledge on cancer, particularly with regards to breast cancer [15]. The research findings emphasised that breast cancer is a prominent contributor to cancer-related deaths in Saudi Arabia. Additionally, nurses are instrumental in promoting knowledge and awareness of the disease among women in various communities. Globally, breast cancer is the most prevalent cancer among females, and in the Kingdom of Saudi Arabia, it has the highest incidence rate, accounting for 27.4% of all female cases, with an average age of 47 years.

Breast cancer is a prominent contributor to cancer-related mortality. In order to effectively identify women who are at an elevated risk of developing breast cancer, nurses in the Kingdom of Saudi Arabia must possess a comprehensive understanding of the relevant factors and risk indicators. In the event that nurses are not adequately trained and educated, and if research facilities are not established for them, it is possible that the Kingdom of Saudi Arabia may experience an unprecedented increase in cancer-related mortality rates.

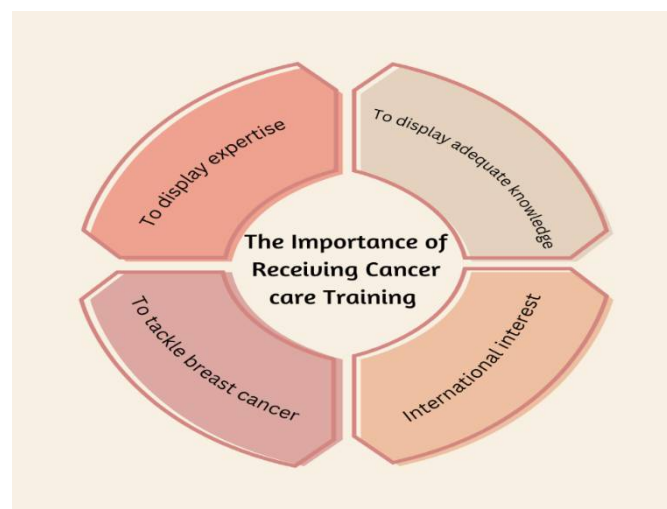


Figure 2:Importance of receiving cancer care training.

Essence of Promoting Oncology Nursing Research in KSA

In order to enhance cancer nursing in Saudi Arabia, it is imperative to engage in both pedagogical and scholarly pursuits. The utilisation of research that identifies optimal methodologies can aid in the advancement of cancer care guidelines that are grounded in empirical evidence. Furthermore, conducting research has the potential to address knowledge deficits and enhance policy-making and practical

judgments concerning cancer treatment. It is imperative to provide backing for initiatives that augment cancer nursing education, employment, and research in Saudi Arabia due to their significance.

The study conducted by Alghamdi and colleagues involved the assessment of oncology literature originating from Saudi Arabia over a decade-long period [16]. A comparison of the periods 2008-2012 and 2013-2017 revealed an increase in the quantity of publications pertaining to the field of oncology. The quality of the research remained consistent. The aforementioned discoveries highlight the significance of augmenting the cancer research strategy at the national level in Saudi Arabia. Anticipated is a persistent augmentation in the calibre and volume of cancer investigations, fortified by enhanced global partnerships and ameliorated funding prospects. Acquisition of funding is frequently accomplished via specialised research centres or particular academic institutions. Numerous cancer centres located in Saudi Arabia provide a diverse array of clinical trials, which are conducted in conjunction with global partners as well as autonomously. The proliferation of oncology research is in concurrence with the general proliferation of healthcare research, encompassing fundamental sciences, across the nation.

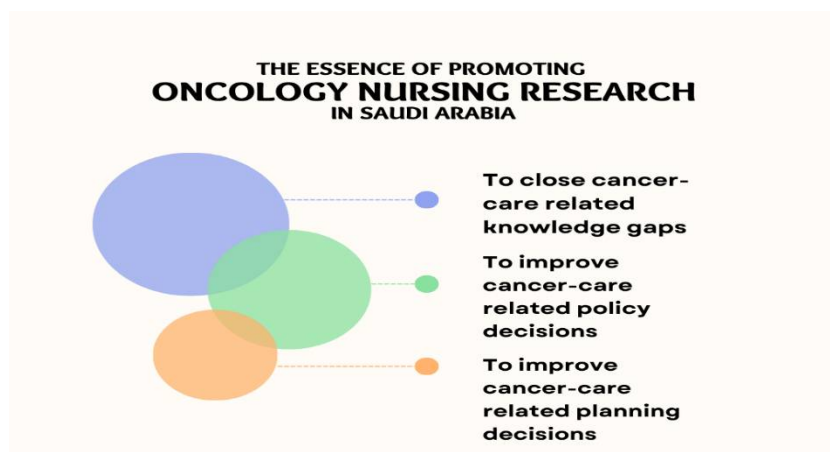


Figure 3:Essentials of promoting Nursing Education on oncology.

Impact of Well-Trained Oncology Nurses to KSA Health Care System

The pivotal role of nurses in transforming healthcare systems is widely acknowledged. The individual's educational and training background provides them with the necessary competencies to administer top-notch healthcare services. Additionally, their training also instills in them leadership qualities, decision-making abilities, and expertise in health service design. The ideals of oncology nursing professionals are subject to continuous evolution, owing to the impact of societal changes, scientific and technological advancements, and diverse perspectives. Professional values of a nurse can be influenced by various factors such as cultural background, prior experiences, educational qualifications, training received, and level of nursing competence.

The article titled "Oncology Nursing Workforce Capacity Building in Rural Rwanda: Strengthening Specialised Cancer Care through Nursing Education and Skill Development" by Muhayimana et al. emphasises the significance of tackling the rising global cancer prevalence [17]. In light of the dynamic nature of the field and the imperative for oncology nurses to mitigate this challenge, it is crucial to equip them with contemporary knowledge and skills in science, technology, and cross-cultural competence. This holds particular significance in nations such as Saudi Arabia, where there is a strong emphasis on upholding cultural and religious principles. In the context of cancer care, it is imperative for nurses to maintain up-to-date knowledge in order to competently execute their daily nursing duties.

Reduction of Burdens (Burn-outs) Associated with Cancer: The article titled "Oncology Nursing Education and Practise: Looking Back, Looking Forward and Rwanda's Perspective" authored by Uwayezu et al. underscores the significance of incorporating oncology nurses in cancer screening and care initiatives as a means to mitigate the impact of cancer [18]. The researchers performed a statistical examination of the worldwide cancer scenario and underscored the significance of highly educated oncology nurses in this context. It is projected that by the year 2030, there will be a significant rise in the incidence of cancer, with approximately 22 million new cases and 13 million fatalities anticipated globally. Low- and middle-income nations are anticipated to encounter substantial impediments, as they are projected to be responsible for 60% of fresh instances and 70% of fatalities.

The provision of nursing care in the field of oncology necessitates specialised training, which ought to be succeeded by advanced education. The possession of cancer care-related knowledge and skills by nurses

can have a substantial impact on the quality of care provided to patients and their families. Nurses can mitigate the challenges associated with cancer by engaging in cancer screening and care initiatives. KSA healthcare nurses who have received comprehensive training and have access to state-of-the-art research facilities are likely to experience improved levels of efficiency and effectiveness, while also mitigating the risk of burnout.

The global power to KSA oncology nurses: Through prioritising the oncology nursing system, the Kingdom of Saudi Arabia's government and healthcare system can enhance their global reputation and bolster their international position. Samadi and Young's article "The Global Power of Oncology Nurses in Low- and Middle-Income Countries" highlights the capacity of nurses to offer worldwide aid and exert influence, as demonstrated by their response to the COVID-19 pandemic [19]. The article underscores the remarkable endeavours of nurses in low- and middle-income countries (LMICs) who provide care for individuals who are susceptible to or have been impacted by cancer, despite the obstacles they encounter. These efforts are informed by the lessons learned from the pandemic.

The COVID-19 pandemic has demonstrated that we are all members of a unified global health community. The World Health Organisation has underscored the significance of global collaboration and cooperation in the context of the COVID-19 pandemic, particularly in the implementation of national cancer control policies on a global scale. The role of oncology nurses is of great importance in the global health workforce, as they contribute significantly towards reducing cancer incidence, morbidity, and mortality, while also improving the overall well-being of patients. The capacity of oncology nurses in low- and middle-income nations to shape global health policy is influenced by a range of factors, including but not limited to the quality of education, level of economic development, degree of gender parity, and migration of healthcare workers.

CONCLUSION

The present study conducts a review of pertinent literature to examine the importance of promoting cancer nursing education, training, and research within the context of Saudi Arabia. The present study involved an assessment of interrelated scholarly literature, which explicated the concept of oncology nursing, education, and research, established a significant linkage between Saudi oncology nursing and global healthcare, and underscored the significance of Saudi oncology nursing. The review's analytical analysis indicated that the studies focused on various topics related to oncology nursing, including the significance of education and training in promoting oncology nursing in KSA, the role of nurses in enhancing patient outcomes, and the importance of research in advancing oncology nursing in KSA. The assessed articles offer perceptive evaluations of the state of oncology nursing in Saudi Arabia and suggestions for improving education, training, and research.

At the zenith of the study, the investigation identified the noteworthy and conspicuous challenges confronting the oncology nursing framework, along with the hindrances obstructing the progress of cancer care instruction, preparation, and exploration. The challenges and shortcomings identified in the provision of cancer care in rural areas include a shortage of adequately trained oncology nurses, limited educational resources for cancer care workers, deficiencies in performance skills and competence, and a failure to exhibit a high level of expertise and knowledge when caring for patients, particularly those with breast cancer. In order to advance the education, training, and research of cancer care, it would be beneficial for the Kingdom of Saudi Arabia's government and healthcare system to address the aforementioned challenges. Upon the completion of each segment, recommendations were presented to aid the KSA administration in addressing these concerns.

In order to enhance cancer care and patient outcomes, it is imperative for Saudi Arabia to accord precedence to oncology nursing education, employment, and research. In order to address the challenges encountered by the oncology nursing workforce, it is imperative that nursing schools, healthcare providers, and regulatory bodies collaborate in a concerted effort. The Kingdom of Saudi Arabia possesses a distinctive prospect to significantly enhance the quality of cancer care dispensed to patients, while simultaneously propelling the domain of oncology nursing to new heights on a global scale. This can be achieved through the provision of research funding, the promotion of evidence-based policies, and the resolution of cultural impediments.

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