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# Self-management Practices and Associated Factors among Adult Patients with Cancer under Treatment: literature Review

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*Abstract:* The prevalence of cancer is increasing globally, and the number of individuals with cancer has increased particularly in Saudi Arabia in recent years. Adherence to self-management practices is the cornerstone of cancer control and prevent acute and chronic complications. This article to identify what is known about the self-management practices and to identify the factors that enable or hinder the work of self-management practices among patients with cancer. Published literature written in English on self-management practices and associated factors among adult patients with cancer were identified through a search of publicly available databases such as CINAHL, MEDLINE, PubMed, and Google Scholar. Search terms used were self-management practices, factors affecting self-management, adult patients with cancer, and cancer treatment. Self-management practices include diet, exercise, lifestyle change, support groups, spirituality, and medicine. Several factors affect self-management type. Self-management practices and associated factor among adult patients with cancer include age, gender, income, cancer type and, treatment type. Self-management practices in supporting patients.

Keywords: Adult patients with cancer, cancer treatment, factors affecting self-management, self-management practices.

# I. INTRODUCTION

Cancer has become one in all the foremost common diseases worldwide and also the second leading reason for death (Charalambous et al., 2017). Globally, the burden of cancer continues to grow with 21.4 million new cases, 13.2 million deaths, and 28.7 million survivors calculable for 2030 worldwide (Howell et al., 2019). Cancer is that the first or second leading reason behind death before age seventy years in ninety-one of 172 countries including the KSA, and it ranks third or fourth in an extra twenty-two countries (Bray et al., 2018). Self-management is a person's ability to manage the symptoms, treatment, physical, psychosocial, and lifestyle changes as a section of living with a chronic condition (Shneerson et al., 2015). Self-management involves interacting with healthcare providers, monitoring health status, making healthcare-related decisions, and managing the impact of the illness on physical functioning, well-being, and social relationships (Ose et al., 2017).

## **II. LITERATURE REVIEW STRATEGIES**

The search strategies adopted was aimed to retrieve published studies related to adult patients with cancer under treatment, cancer self-management practices, and factors associated with self-management practices in patients with cancer. Searches were conducted using the following electronic databases: CINAHL, MEDLINE, PubMed, and Google Scholar. The following keywords were used in combination: 'self- management practices', 'factors affecting self-management', 'adult patients with cancer', and 'cancer treatment'. The search was limited to English-language publications and included studies over a 10-years period, to ensure current literature. Focusing on these studies allowed

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the investigator to better find gaps and highlight opportunities for enhancing research in future. However, studies that focused on pediatric patients with cancer and chronic diseases, such as diabetes were excluded from the search.

## III. OBJECTIVES OF THE LITERATURE REVIEW

The goal of this literature review is to identify what is known about the self-management practices and to identify the factors that enable or hinder the work of self-management practices among patients with cancer, to relate this to the ongoing research and to identify gaps in this knowledge.

#### IV. FINDINGS FROM THE LITERATURE REVIEW

#### A. Impact of Cancer

Cancer is characterized by uncontrolled cell growth and acquisition of metastatic properties (Sarkar et al., 2013). Patients with cancer face unique short-term and long-term challenges to physical and mental health, family functioning, and maintenance of a healthy lifestyle (Naughton & Weaver, 2014). For many, a cancer diagnosis and treatment results in disruptions in daily activities, physical pain, diminished energy, changes to physical appearance, limitations in functional ability, altered social relations, confrontation with mortality and existential issues, and changes in one's sense of self, future, and world (Zebrack, 2011). Cancer and treatment accompanied by profound physical, emotional, social, occupational, and financial stressors, as well as associated increases in anxiety and depressive symptoms (Stanton, 2012). Physical symptoms vary across cancer types and treatment modalities but commonly include fatigue, sleep disturbances, pain, nausea and/or vomiting, diarrhea, neuropathy, skin rashes or toxicity, cachexia, arthralgias, myalgias, lymphedema, impaired sexual functioning, and cognitive problem (Naughton & Weaver, 2014). These symptoms impact quality of life varies depending on a number of factors, including the type and stage of cancer at diagnosis, the patient's prognosis, the type of treatments received, the patient's age, and comorbidities (Naughton & Weaver, 2014). A cancer can have a wideranging impact on mental health and the prevalence of depression and anxiety among people with cancer is high (Pitman, Suleman, Hyde, & Hodgkiss, 2018). Feelings of hopelessness, loss of control and uncertainty around survival and death can also have a detrimental impact, particularly in patients with a poor prognosis. Anxiety around a cancer can also lead to sleep disturbance, which may increase the risk of depression (Howell et al., 2014). The stigma surrounding both mental illness and certain types of cancer, such as lung cancer, can lead to feelings of guilt and shame, which could contribute to the onset of depression (Ball, Moore, & Leary, 2016). A variety of factors related to the cancer and its treatment are likely to impact on the development of depression and anxiety, including the type of cancer, stage and prognosis. Cancer treatments including immunotherapy and chemotherapy may induce depression through particular biological mechanisms, such as inflammatory pathways, and some medications used to treat chemotherapy-induced nausea can reduce dopaminergic transmission, which is implicated in the development of depressive symptoms (Smith, 2015). The physical symptoms of specific cancers can also contribute to depression e.g. incontinence and sexual dysfunction associated with prostate cancer (De Sousa, Sonavane, & Mehta, 2012). Cancer pain is more common in patients with advanced cancer. Nearly half of cancer patients report interference in daily activity caused by pain. Pain, even when treated, is often severe enough to impair their ability to function (Tegegn & Gebreyohannes, 2017). Pain negatively impacts on patients with cancer quality of life, affecting their ability to recover and regain the functional levels possessed prior to their diagnosis. Additionally, persistent pain impedes employment prospects and negatively influences social interactions and emotional well-being (Brown, Ramirez, & Farquhar-Smith, 2014). Cognitive impairment also is commonly observed in patients with cancer (Wefel, Vardy, Ahles, & Schagen, 2011). Cognitive impairment can have a negative impact on daily functioning, quality of life, and capacity to work among patients with cancer and those in remission (Pendergrass, Targum, & Harrison, 2018). Fatigue is now recognized as one of the most common and distressing side effects of cancer and its treatment (Bower, 2014). Cancer-related fatigue (CRF) has been defined as a distressing, persistent, subjective sense of physical, emotional, and/or cognitive exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with usual functioning (Bower et al., 2014). Higher levels of fatigue affect quality of life, functional status and symptom management (Brearley et al., 2011). Sleep disorders affect 30% to 50% of patients with cancer and survivors, often in combination with fatigue, anxiety, or depression (Denlinger et al., 2013). Sleep disorders are common in patients with cancer as a result of multiple factors, including biologic changes, the stress of diagnosis and treatment, and side effects of therapy eg, pain, fatigue (Palesh et al., 2013). Patients with cancer have lower levels of mental and social function compared to the general population (Barbara Given & You, 2012). The diagnosis of cancer has a significant impact, not just on the patient, but on their spouse, family, and broader social network (Allemani et al.,

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2015). For spouses and other family caregivers, there is documented evidence to suggest that cancer impacts on biological, psychological, and social domains (Levesque, 2016).

#### B. Cancer Care in Kingdom of Saudi Arabia

Kingdom of Saudi Arabia (KSA) is the largest country in the Arabian Peninsula. It is located in South-Western Asia, extending from the Red Sea in the West to the Arabian Gulf in the East. Kingdom of Saudi Arabia is a country with a culture and traditions rooted in Islamic teachings and Arab customs (AlAsmri, Almalki, Fitzgerald, & Clark, 2019). Latest census data, Saudi has a population of 32.6 million and it is expected to reach 39.1 million by the year 2030 (Alattas, 2019). Kingdom of Saudi Arabia is the world's biggest crude oil producing country (Alkhenizan, 2014). Oil producing capacity has caused a rapid socio-economic shift over the past 50 years leading to a noticeable influence on the population's health and lifestyle (Wazqar, Kerr, Regan, & Orchard, 2017). This development has encouraged the government to establish a plan for improving the medical care of its citizens (Althubiti & Nour Eldein, 2018). Health care services in KSA have been given a high priority by the government. During the past few decades, health and health services have improved greatly in terms of quantity and quality (Alkhamis, 2012). The Saudi government has dedicated a vast amount of its finances towards enhancing healthcare, with the principle aim of offering free and accessible health services to both every Saudi citizen and foreign individual employed within the public sector (Wazqar et al., 2017).

The Ministry of Health (MOH) is the major government agency entrusted with the provision of preventive, curative, and rehabilitative health care for the Kingdom's population (Alshammaray, Duraisamy, Albalawi, & Ratnapalan, 2019). The Saudi Government's vision for 2030 is to significantly mitigate the challenges faced by the health sector in preventing cancers through analyzing independent risk factors, improving health, and control cancer outcomes through treating the symptoms of cancers (Ahmed et al., 2018). Specialized oncology care settings are located in cities where about 80% of the Saudi population live. Previously, cancer care services could only be found in the larger cities, such as Jeddah, Riyadh, and Dammam. Recently, more cancer care settings have been established in smaller towns, including Madina, Qaseem, and Makkah with further expansion planned (Wazqar et al., 2017). There were already over 15 cancer centers in the country, each with its own palliative care system (Almobarak, 2016). One of the difficulties with regards to cancer care in the Kingdom is that institutions sufficiently equipped to deal with such conditions are located far from one another (Alshammary, Abdullah, Duraisamy, & Anbar, 2014). However, nursing and other health professional expertise in cancer care is still lacking in the vast remote or rural areas of the KSA where 20% of patients with cancer live (Wazqar et al., 2017). In most Islamic countries in the Middle East including KSA, about 70% of all cancer patients see a physician when the tumor has already reached grade III or IV, when curative treatment is not effective anymore (Silbermann & Hassan, 2011). Consequence most cancer patients seek medical attention only when the disease is in an advanced stage, beyond cure but causing severe pain (Silbermann et al., 2012). In addition, the family receives the cancer diagnosis and treatment plan before the patient. One of the reasons for the conservative attitude toward disclosure relates to the nature of the disease cancer which is still viewed as a death sentence (Silbermann & Hassan, 2011). For this reason, the imperatives for strengthening the underdeveloped palliative care system become even more pressing (Alshammary et al., 2014). Palliative care in KSA is still in its nascent stages. Even after two decades, palliative care is not widely available across KSA (Alshammaray et al., 2019).

In 1992, the King Faisal Specialist Hospital and Research Center in Saudi Arabia established a palliative care facility which gradually expanded across the KSA (Alshammaray et al., 2019). Palliative care also began to be offered in Jeddah in 1998, specifically for patients suffering from cancer (Almobarak, 2016). Currently there were more than 15 cancer centers and well-established palliative care units with integrated home-based care, providing services for 500 patients a year. The units are made up of multidisciplinary teams incorporating a variety of professionals such as physicians, nurses, social workers, dieticians, physical therapists, home care health nurses, health educators, pharmacists and religious authorities (Silbermann et al., 2013). The existence of an effective palliative care system significantly benefits cancer patients that are in terminal stages, and suffering from considerable pain (Alshammary et al., 2014). However, more work is needed to raise awareness of palliative care, and to improve pain management legislation (Silbermann et al., 2013). Palliative care patients certainly need medical and spiritual management to improve the quality of their day-to-day living (Hamdan et al., 2020). Islamic culture adopts the end of life care and legally governs Saudi Arabia based on the Holy Qur'an (Alshammaray et al., 2019). Religion and medicine could have a great impact on cancer survival (Hamdan et al., 2020).

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## C. Cancer Self-Management Practices

Self-management involves daily behaviors that individuals perform to handle a health condition (Schulman-Green et al., 2011). Engagement of cancer patients in self-management practices have become a priority of cancer care reform initiatives (Cheng, Sit, & Cheng, 2017). Almost all of the participants in a study was conducted in China viewed lifestyle modification as their top self-management priority to improve their health. They described engaging in healthy behaviors, such as increasing physical activity and maintaining a balanced diet (Cheng et al., 2017). Furthermore, self-management practices vary depending on the needs of patients with cancer (Cheng et al., 2017). In a study by Heinze and Williams (2015), the self-management category most commonly reported was diet/nutrition/lifestyle category included such selfmanagement actions as eating fibre for constipation, reading to alleviate difficulty sleeping, and playing tennis to cope with depression and the least common category was herbs/vitamins/complementary therapy. The importance of patients actively engaging in self-management practices to relieve the burden of side effects, both physical and psychological (Williams, Mowlazadeh, Sisler, & Williams, 2015). Others have shown that the helpful self-management strategies reported included diet and nutrition changes; lifestyle changes; and mind, body control, and spiritual activities (Williams, Lantican, Bader, & Lerma, 2014). One other study shown the first category of the self-management strategies was the most used and found helpful. The categories were diet/ nutrition/lifestyle change (eg, food modifications, eating habits: vegetarians; use of nutritional supplements; naps, sleep, and rest); mind/body control (eg, reading, adjust mood); biologic treatments (vitamins); Chinese herbs or medicines for fever, constipation, and sleep aids; and other: hot towel bath for fever (Williams et al., 2010).

Self-management incorporating numerous health and lifestyle practices (Shneerson, Taskila, Greenfield, & Gale, 2015). Fifteen women with metastatic breast cancer interviewed about their self-management practices they reported self-management practices included caring for one's health and communication with family, friends, and providers. Behaviors associated with caring for one's health included managing symptoms, engaging in exercise and/or nutrition regimens, adhering to the treatment regimen, making treatment decisions, learning about cancer, and maintaining quality of life. Communication with family members and friends included evaluating and ensuring support in the home (e.g., housekeeping), keeping home life as normal as possible, and managing financial resources. Communication with health care providers included coordinating medical services, searching for cancer resources, and advance care planning (Schulman-Green et al., 2011). Exercise and dietary practices have been found to be popular forms of self-management practices in patients with cancer and previous studies have estimated complementary therapy use to be as high as 40 % (Shneerson et al., 2015). According to Shneerson et al (2015), ninety-two percent of respondents had used some form of self-supported self-management practices. The most common self-management type exercise was undertaken by 84% of respondents. This was followed by diet (56%), complementary and alternative medicine (30%), spirituality/religion (30%), support groups (16%) and psychological therapies (7%).

In contrast, younger respondents were more likely to use the self-management practices diet, exercise, complementary and alternative medicine and psychological therapies than older people, although no differences with regard to age were found when examining spiritual/religious practices or support groups (Shneerson et al., 2015). The most helpful self-management practices also were found in the categories of medicines (prescribed, over-the counter); diet and nutrition (e.g., diet change, small frequent feedings, spices, nutritional supplements); and lifestyle change e.g., rest, naps (Williams et al., 2015). Hence, it is important for patients with cancer to implement these self-management practices to improve their health and well-being. Aside from the self-management practices, there are factors associated with self-management practices among patients with cancer, which is described in the next section.

#### D. Factors and Barriers Associated with Self-management Practices in Patients with Cancer

The ability to self-manage chronic conditions is directly affected by factors related to one's community and home environment and resources (Grady & Gough, 2014). Self-management practices vary among patients with different demographic and personality characteristics, disease experiences, and needs. Age, educational background, type of surgical procedure, and self-efficacy have been shown to influence patients self-management practices after mastectomy and during chemotherapy (Wu, Howell, Fang, Chen, & Yuan, 2020). In one study respondents on higher incomes were more likely to exercise than those on lower incomes, while women and breast cancer respondents were more likely to use complementary and alternative medicine or undertake spiritual/religious practices than men or other cancer types. Age

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was significantly associated with self-management uptake, with younger respondents being more likely to use psychological therapies, complementary and alternative medicine, diet and exercise, compared with older respondents. Respondents who had received chemotherapy were more likely to undertake all types of self-management practices apart from spiritual/religious practices (Shneerson et al., 2015).

Another study showed that self-management skills increased with age, that females were better at self-management than males. Also, found that patients with Central Nervous System (CNS) tumors exhibited self-management skills less frequently than patients with leukemia (Syed et al., 2016). Physiological, psychological, and psychosocial factors are barriers to successful self-management practices in patients with cancer (Ostby, Armer, Smith, & Stewart, 2018). Furthermore, patients with lack of Breast Cancer-Related Lymphedema education and decreased self-efficacy confidence were contributed to unsuccessful self-management Breast Cancer-Related Lymphedema (Ostby et al., 2018). In study was conducted by Wu et al (2020), show the factors influencing self-management practices are, modified radical mastectomy, higher level of avoidance coping toward the disease, lower level of confrontation and acceptance-resignation, anxiety, and lower level of self-efficacy. Self-management behavior in cancer patients varies because of different personal characteristics and disease adaptation levels. Factors, including physical and socioeconomic status, such as self-efficacy, social support, and coping style are important factors associated with self-management practices of cancer patients (Geng et al., 2018). In a secondary data analysis was completed from a cross-sectional study results show that self-efficacy and social support impose significant direct effects, as well as indirect effects via copying style affect three self-management practices: communication, exercise, and information seeking (Geng et al., 2018). In qualitative study results describing barriers to survivor' active self-management were identified: emotional barriers (eg, fear of recurrence), symptom-related barriers (eg, loss of taste), structural barriers (eg, access to appropriate health services), and self-evaluative barriers eg, interpersonal self-evaluative concerns (Dunne et al., 2016).

On the other hand, a secondary qualitative analysis of the findings from mixed methods, longitudinal study show the barriers to engagement in self-management appeared to stem from perceptions of the impact and associated severity of side effects experiences as well as the perceptions about the efficacy of chosen self-management activities and perceptions of control in minimizing the consequences of cancer treatment. Severe, episodic or unexpected side effects coupled with perceptions of uncertainty, lack of control and lack of adequate preparation to engage in self-management were identified as key barriers to engagement (Kidd, 2014). The experience of self-management among women who had a diagnosis of metastatic breast cancer was described as frustrating and emotionally challenging because of fear and uncertainty around treatment options and making the right decisions. Participants reported also, several barriers to self-management practices. Often mentioned were symptom distress, limited time and energy to acquire information, and competing priorities. Another barrier was lack of understanding of cancer and its trajectory (Schulman-Green et al., 2011).

## V. GAPS IN RESEARCH

This literature review is important because the cancer continues increasing in the KSA and self-management practices of patients with cancer is needed to develop healthcare policies and self-management support programmes that are tailored to the needs and abilities of patients and their relatives, while also fitting in the healthcare system. Whereas especially now, healthcare policies have increasingly steered towards out-of-hospital care and patient self-management, presumably affecting self-management experiences. Self-management practices in patients with cancer can be contributes to their overall health and well-being. This is an important in attempting to improve patients with cancer health and their experiences of living with cancer. Self-management practices have frequently been studied in the context of chronic diseases, worldwide such as diabetes. Several studies have assessed the topic, but among these studies, there is a lack of conceptual clarity. The present study will assess the level of self-management practices among patients with cancer under treatment and determine factors that significantly associated with self-management practices among those patients.

# VI. CONCLUSION

Self-management practices include diet, exercise, lifestyle change, support groups, spirituality, and medicine. Several factors affect self-management practices among adult patients with cancer include age, gender, income, cancer type and, treatment type. This literature review presented findings of studies on the self-management practices and associated factors. The researcher discussed evidence from various studies on the multiple self-management practices and several factors affecting self-management practices.

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