



A Comprehensive Evaluation of Health-Related Life Quality Assessment Through Head and Neck, Prostate, Breast, Lung, and Skin Cancer in Adults

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Health assessment data assists the well-being and patient care teams' process in drawing up a care and assistance plan and comprehending the requirements of the patient. Comprehensive and precise data about the Quality of Life of cancer patients play a significant part in the development and organization of cancer patient care. Quality of Life has been used to mean a variety of various things, such as health situation, physical function, symptoms, psychosocial modification, well-being, enjoyment of life, and happiness. Chronic diseases such as cancer are among the disorders that severely affect people's health and consequently their Quality of Life. Cancer patients experience a range of symptoms, including pain and various physical and mental conditions that negatively affect their Quality of Life. In this article, we examined cancer and the impact that this disease can have on the Quality of Life of cancer patients. The cancers examined in this article include head and neck, prostate, breast, lung, and skin cancers. We also discussed health assessment and the importance and purpose of studying patients' Quality of Life, especially cancer patients. The various signs and symptoms of the disease that affect the Quality of Life of patients were also reviewed.

Keywords: cancer, health care, assessment tools, life quality approach, life quality and expectancy

INTRODUCTION

People's health is a goal of common, financial, conservational aspects, and personal aspects. Besides additional issues, health knowledge is one of the most significant causes of well-being (1). A health assessment is usually comprised of queries, to which patients reply, that inquiries around individual accounts, dangers, life-changing actions, well-being aims, and general well-being. Health assessment data helps well-being and patient care teams' process, provide a plan of care and assistance, and comprehend the requirements of patients (2). Collecting data to make valuable and essential changes to people's health is the chief directive of assessing well-being care requirements (3). Reviewing and researching patients' quality of life can give us essential information about patients' responses to cancer and cancer treatments, and in the communication of diverse responses and the general QoL, the data gained can also affect the appropriate care options (4).

The idiom Quality of Life is extensively used to evaluate quality of life and well-being matters (5). The purpose of studying quality of life is to gain the essential data for political and health plans (6). Emotional suffering in cancer patients is more profound than physical suffering (7–9). Quality of Life has various more profound meanings such as health situation, physical functions, psychosocial alteration, well-being, life pleasure, and happiness. This idiom was intended to narrow the emphasis to the effects of well-being, disease, and cure on quality of life (10). The emotional performance of cancer patients has been widely studied due to its excessive influence on patients' quality of life. Nervousness and depression are disturbing and limiting signs in patients with cancer (11). Cognitive function is another area that is affected by cancers. Cognitive dysfunction includes reduced capacity, particularly in memory, that harms the function and focus of the patient (12–14). The importance of diagnosing and treating depression has been known not only to improve quality of life, but since it might negatively affect compliance with cure, the length of time in the hospital and capacity for self-care (11, 15). Cancer and its treatment cause physical incapacities and psychological and social injury that can be diagnosed and identified in order to improve the quality of life relating to well-being (16, 17). Health-related quality of life (HRQoL) raises multidimensional valuation that contains at least the physical, emotional, and social areas and might contain further areas such as cognitive functioning, sexuality, and spirituality. Some instances are role functioning, social functioning, sense of health, pain, and fatigue (18). According to research, the side effects of treatment depend on the person's condition and type of cancer and its treatment affects the patient's QoL (19–21). There are variances between HRQoL and QoL–QoL is a comprehensive idea covering all aspects of social life; however, HRQoL emphasizes the effects of disease and the influence of that disease's treatment on QoL. HRQoL is occasionally confused with health position or functional position (22). Imaging systems and their uses can evaluate all the identifiable characteristics of the cancers mentioned in this article (23). In this article, we discuss the quality of life of patients with head and neck, prostate, breast, lung, and skin cancers that have been affected by their disease, mainly concentrating on numerous factors associated with QoL. These analyses were done by overall and comprehensive evaluation of contemporary studies plus valuable data discussions and vital relativity. In this article, due to limited resources, we examined some main scales through the quality of life, such as physical functioning, emotional functioning, social functioning, cognitive functioning role functioning, nausea and vomiting, appetite loss, fatigue, pain, dyspnea, and diarrhea in the adult age group. It is worth mentioning that due to the importance of these five cancers (Head and Neck, Prostate, Lung, and Skin), their prevalence among adults according to diverse statistics, and lack of sufficient

data in these areas, they were analyzed at priority which undoubtedly will play an important role accordingly.

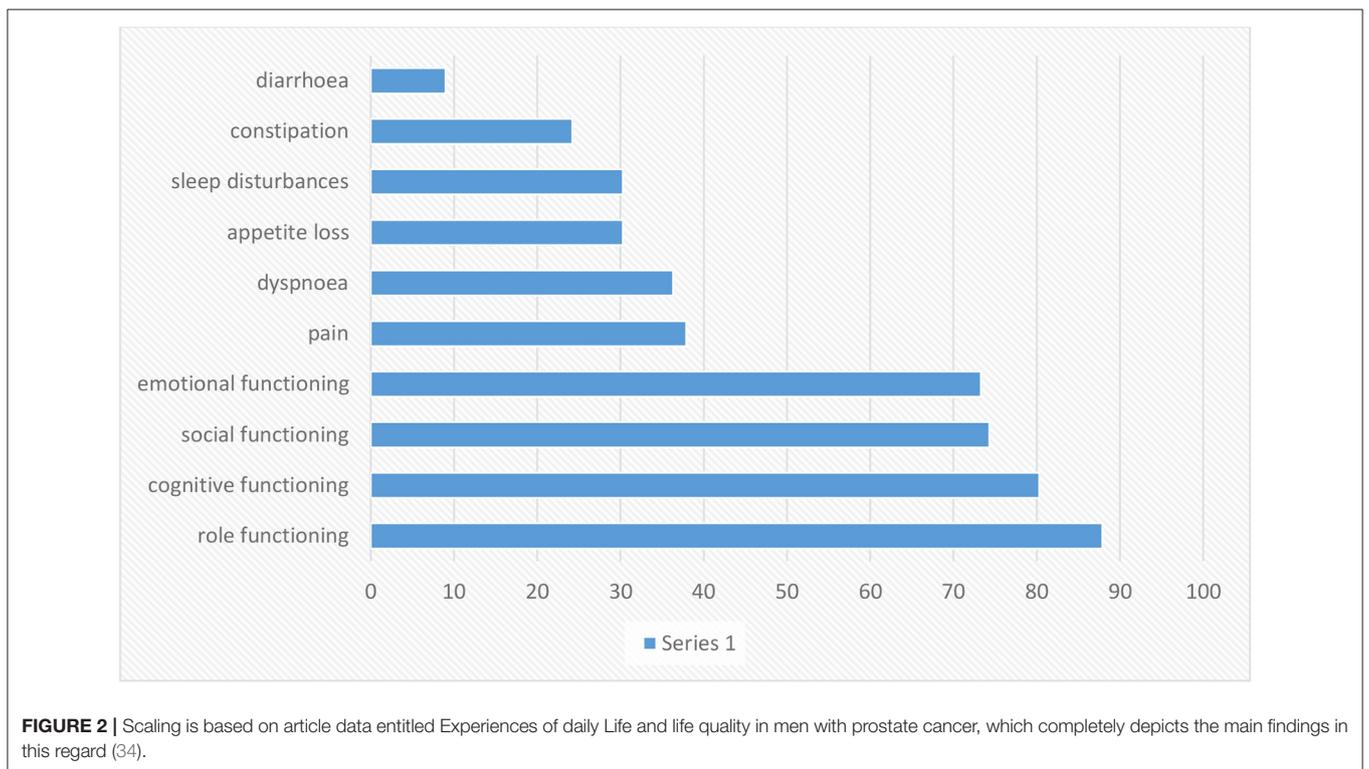
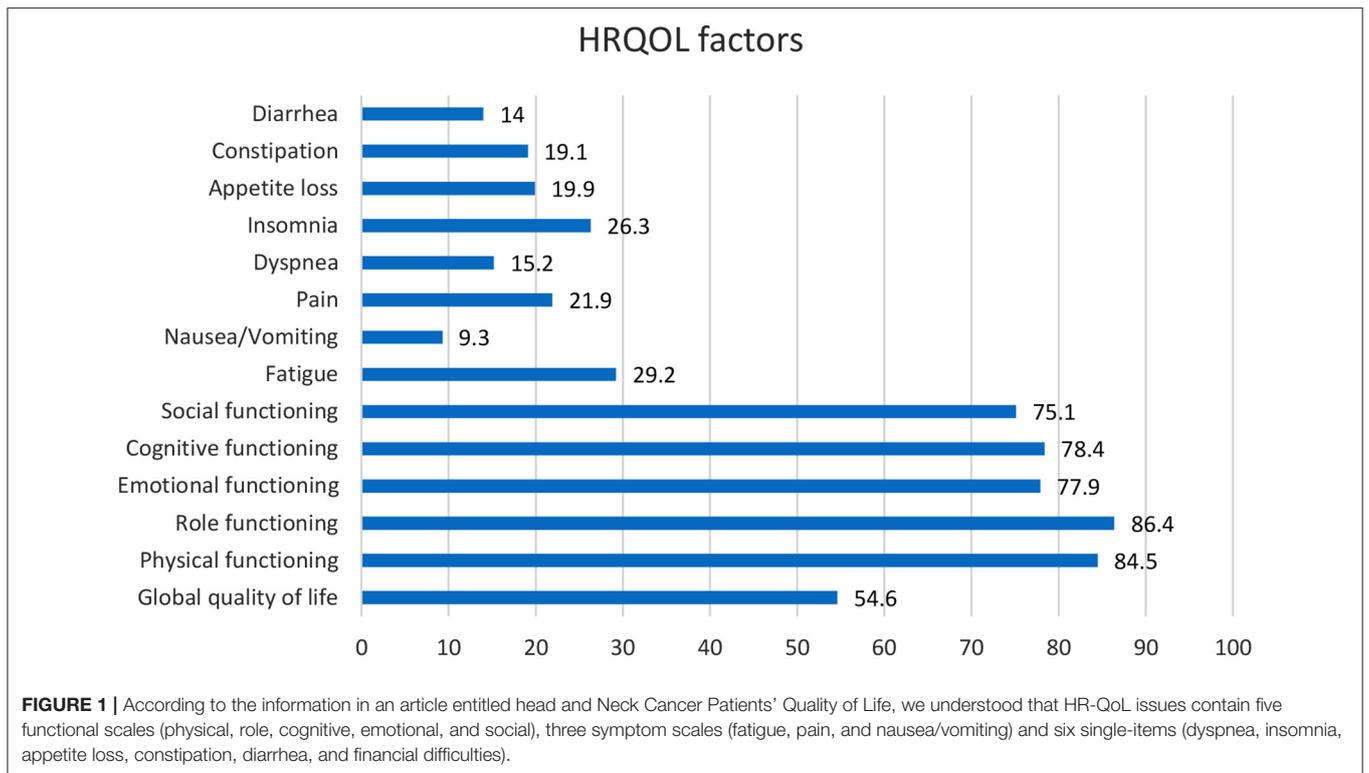
HEAD AND NECK CANCER

The head and neck are two of the most significant vital diagnostic parts of the body of their complex structure and many physical procedures (24). Head and Neck cancer (HNC) references a group associated with tumors of the nasal cavity, oral cavity, throat, larynx, middle ear, and sinuses (25). HNC's risk factors include poor health in the oral cavity, environmental pollutants, gastroesophageal reflux illness, nutritional issues, and the usage of marijuana (26). One of the most important causes of HNC cancer is the use of chromium in different areas (27). The signs of this cancer might contain a swelling or pain that does not relent, a sore throat that does not resolve, trouble swallowing, and a variation or roughness in the voice (28). Health-associated matters are among the several issues that might affect QoL. Subsequently, HNC influences bodily structures that endanger everyday actions like talking, deglutition and breathing, drinking, and treatment might terminate abnormalities that harmfully affect psychosocial functioning (29). There was a confined decline of physical and role functioning and several head and neck symptoms in the first months of the disease, with development subsequently (**Figure 1**). But after a long illness duration, only physical functioning, taste/smell, dry mouth, and sticky saliva were significantly worse, contrasted with baseline. As women developed through the stages of cancer, and when combined with treatment it was related to additional symptoms, and worse functioning (30). The functional cognitive, physical, and emotional scales were the most affected. Pain, fatigue, and sleep disorders were the most widespread symptoms (31) (**Figure 1**). Head and neck cancers can change the appearance of patients because of their tumors, which in turn cause more emotional damage than other cancers (32). HNC patients experience weight changes owing to the disease (33) (**Figure 2**). According to an article entitled head and neck cancer patients' quality of life, health-related life quality factors have been included in **Figure 1** below. The patients studied in the report are patients who have been identified through HNC and are experiencing antineoplastic treatment to treat cancer. The cure is comprehensive for 6 months. These patients were employed for expediency in the section of dentistry of the Mato Grosso Cancer Hospital, Cuiabá, MT, Brazil (35). Scaling is based on article data entitled head and Neck Cancer Patients' Quality of Life. Quality of life analysis of patients with head and neck cancer using the UW-QoL, EORTC QLQ-C30/QLQ-H&N 35, and FACT-H&N instruments expressed by mean, median, and standard deviation (35).

PROSTATE CANCER

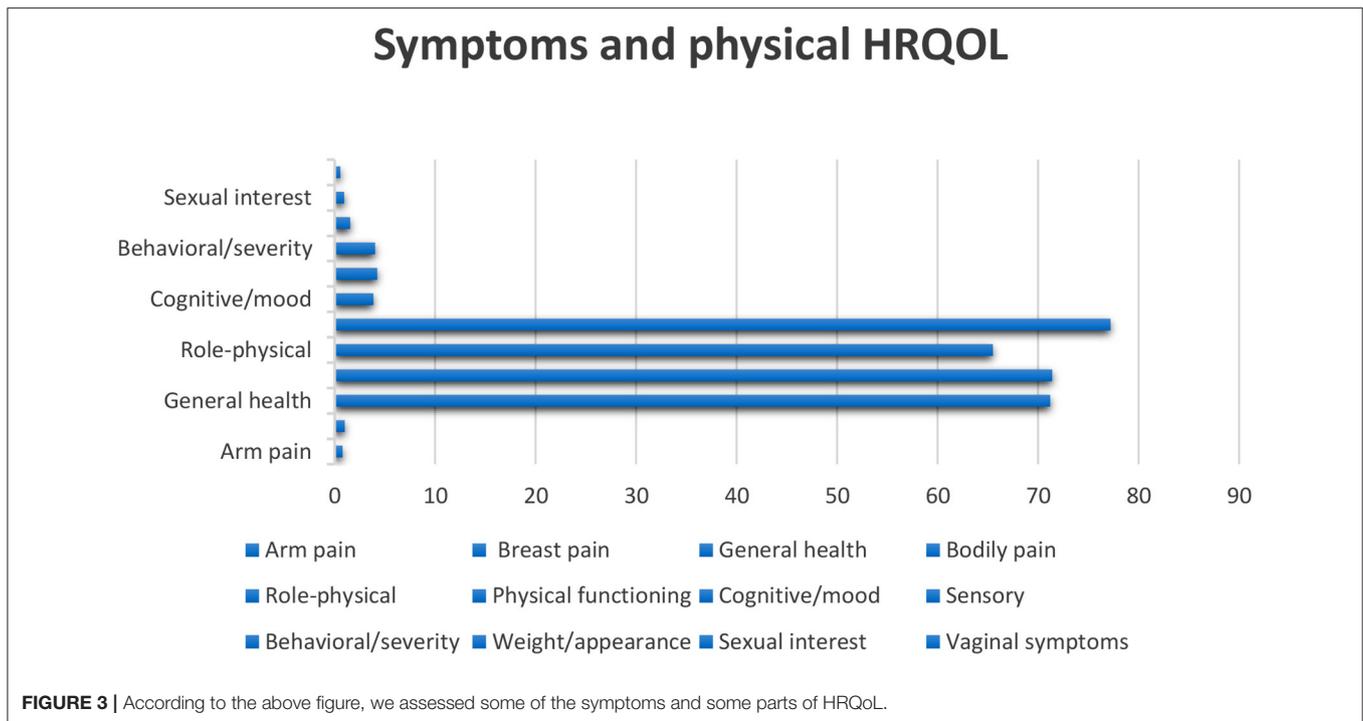
Prostate cancer morbidity and fatality measures often diverge. The second most common reason for cancer death in men is prostate cancer (36). There are no primary symptoms for most cases, and then late symptoms might include exhaustion due to anemia, bone ache, paralysis from spinal metastases, and

Abbreviations: QoL, Quality of life; HNC, Head and neck cancer; HRQoL, Health-related quality of life; PC, Prostate cancer; NSCLC, non-small cell lung cancer; SCLS, Small cell lung cancer; NMSC, No melanoma skin cancer; BCC, Basilar cell carcinoma; PC, Prostate cancer.



renal failure from the bilateral ureteral obstacle (37). The danger of rising prostate cancer is related to advancing age, African American heritage, and positive family history of the disease,

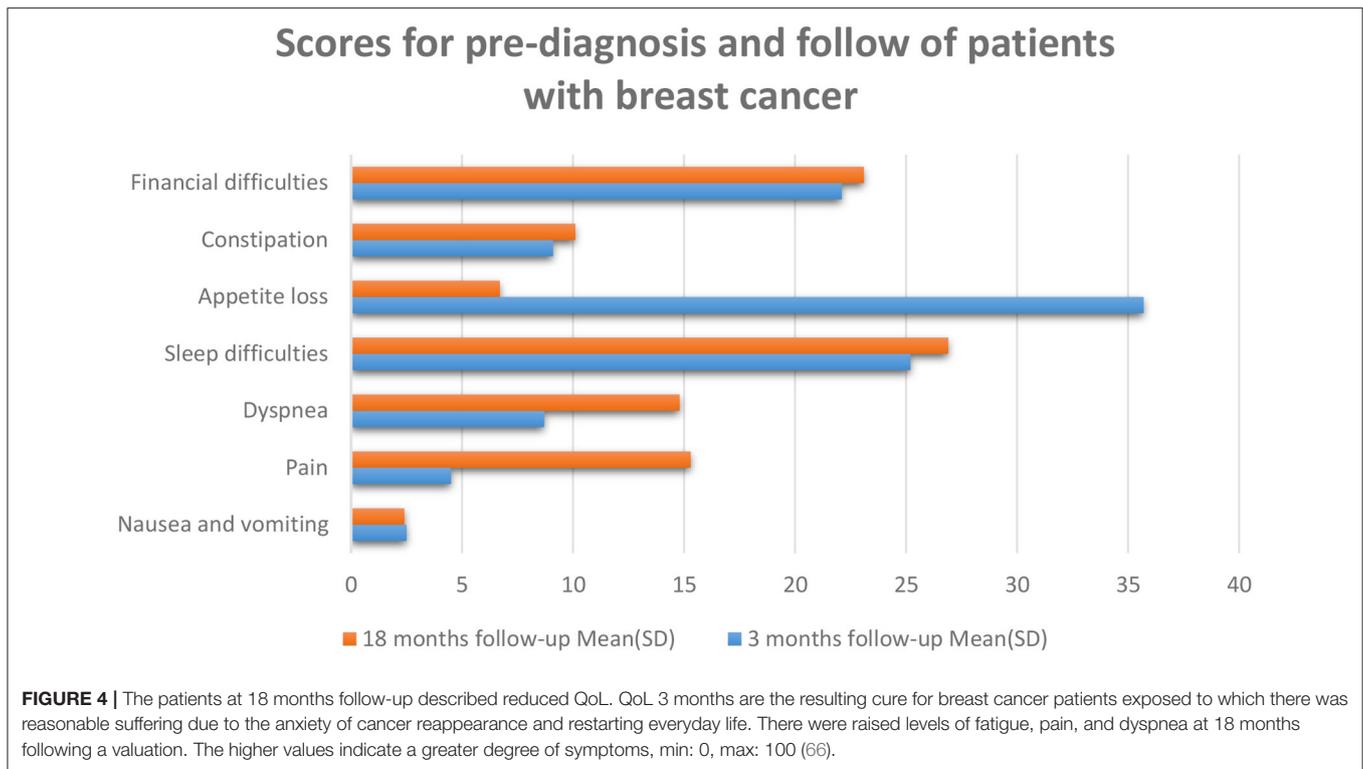
and maybe increased by diet and other influences (36). The risk factors that increase the advance of prostate cancer include family history, race, socioeconomic issues, occupation, infectious



agents, sexual behavior, cadmium exposure, vasectomy, and smoking (38). Some kinds of prostate cancer progress slowly and might require very little or even no treatment; others are destructive and spread fast (39). Prostate cancer (PC) is the sixth most common kind of cancer among men universally, realized as a communal health issue worldwide (40–42). QoL is important for patients with prostate cancer; besides, the progression of the disease is relatively slow, which gives the hope of a long survival time (43). HRQoL covers the entire range of the human experience, including daily necessities, social relations, physical and psychological health, disease and job, and individual enjoyment (44, 45). Prostate cancer influences the bowels, bladder, and sexual role that affects the QoL (43). One of the fundamental problems in patients with prostate cancer is impotence. Other side effects of invasive cures include urinary and digestive dysfunction. Exhaustion, pain, hopelessness, marital disorders, nervousness, and worry around the progression of the illness affect the patient's quality of life (46). Men have to live with their disease and the side effects of treatment, which are primarily urinary, sexual, and gastral complications (47–49). Prostate cancer affects the older public, and deaths from this cancer are seen in the elderly and even middle-aged population (50). Patients with early stage prostate cancer need to comprehend the possible influence on their QoL from various treatments so they can choose the cure that fits their priorities and preferences (51). Incontinence and impotence increase after radiation therapy and radical prostatectomy, but radiation therapy rates are relatively lower (50). According to the figure, role functioning has been most affected and loss of appetite is also associated with diarrhea.

BREAST CANCER

After skin cancer, breast cancer is the most common cancer among women and is the second greatest cause of cancer death in women after lung cancer (52). Some kinds of tumors might advance inside diverse parts of the breast and most tumors are the consequence of benign variations inside the breast. Breast cancer is much more common in women than men; and outcomes are not promising if there is a delay in diagnosis of the disease (53). In breast cancer patients, the mortality rate increases with age, and improved physical activity can decrease the danger of this cancer in women (54). Probable biological mechanisms that occur under the effect of physical activity on body composition contain insulin resistance and circulating stages of sex steroid hormones (54, 55). Breast cancer diagnosis methods involve a physical check, imaging—particularly mammography, and tissue biopsy. Early diagnosis and timely initiation of treatment will help cancer patients survive (56). HRLQoL was described through the way of breast cancer patients' understanding of their physical, emotional, and social well-being influenced by diagnosis, treatment, post-treatment, and survivorship as evaluated using well-validated tools (57) (Figure 3). Psychosocial issues complicate the signs of physical symptoms and affect the QoL of breast cancer patients (58) (Figure 3). Mental treatments can assist breast cancer patients in handling their feelings and mental issues they might cause, including depression, phobias, and anxieties (58, 59). Body deformity, sexual dysfunction, and syndromes that grow in advanced cancer patients after mastectomy affect QoL (57). The conclusion of treatment can remarkably trouble women with breast cancer, particularly those who have received adjuvant chemotherapy or radiation therapy.

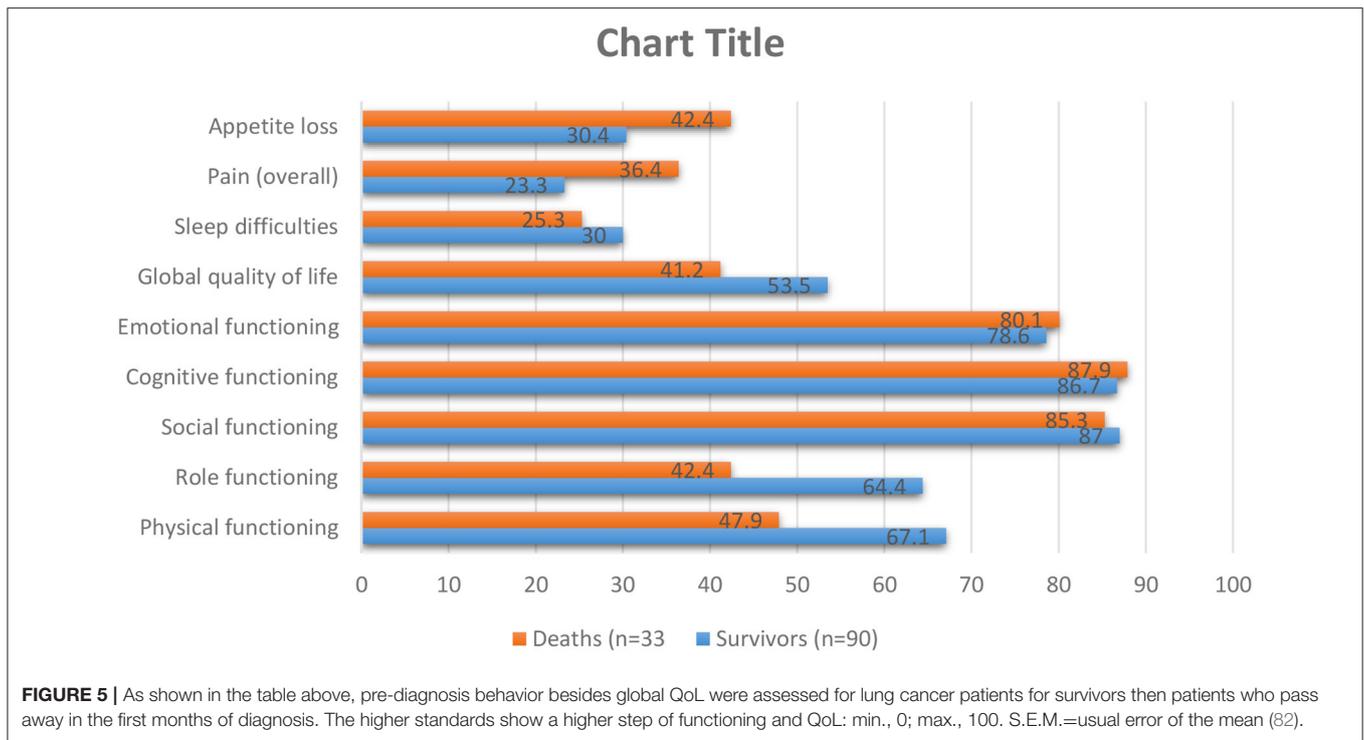


Signs such as hot flashes, oversleeping, and exhaustion reduce the QoL in women throughout breast cancer (60–65). Patients studied in an article by Ali Montazeri et al. were patients with a new diagnosis of breast cancer who have been admitted to Imam Khomeini Hospital in Tehran. Patients were evaluated in 2 stages; the introductory period was linked to 3 months after the early treatment, and the next period was made 1 year later (18 months subsequent to the pre-diagnosis) (66) (**Figure 4**). Eventually, the highlighted data from the previously mentioned research clearly and precisely show a linear relationship between the duration of follow-up of breast cancer patients, which has an indispensable role in evaluating QoL. Scaling this figure based on the data in the article entitled Physical activity, long-term symptoms, and physical health-related quality of life among breast cancer survivors: a prospective analysis, and according to the article signs besides physical HRQoL consequences stated by 545 breast cancer survivors (67).

LUNG CANCER

Lung cancer is the most common cancer incidence and cause of cancer mortality in men, while in women, it is the third most frequent cancer (68). Although lung cancer is separated into many subgroups, there are two primary sorts of lung cancer: non-small cell lung cancer (NSCLC) and small cell lung cancer. Smoking increases the risk of lung cancer, but non-smokers can also get it and by comparing these two types of lung cancer, we concluded that small cell lung cancer grows

and spreads faster than non-small cell lung cancer (69). Lung cancer is often undiagnosed in the early stages because its symptoms may be similar to those of the common cold (69). Lung cancer can be very heterogeneous and can occur in different parts of the bronchial tree, so there are very variable signs and symptoms depending on its anatomical location. Lung cancers small cells are the most distinctive highly invasive cancers that spread rapidly to the lymph vessels beneath the mucosa and lymph nodes in the area (70). Risk factors for lung cancer include smoking, family history, exposure to secondhand smoke, mineral and metal particles, or asbestos. Symptoms of NSCLC can include cough, chest pain, shortness of breath, blood in sputum, wheezing, hoarseness, recurrent chest infections, weight loss, lack of appetite, and fatigue (71). QoL in patients with lung cancer is one of the most critical factors in prognosis quality of life by way of a predictive aspect. The main aspects of a patient's health may be negatively influenced through the diagnosis of cancer or its treatment (57). Symptoms of lung cancer significantly affect the patient's QoL, which significantly impacts physical, emotional, social, and mental health (72) (**Figure 4**). Increased exhaustion, shortness of breath, cough, and emotional distress decrease the quality of life, while difficulties with night-time rest affect cognitive function (73, 74). Worry and depression rise throughout chemotherapy, which affects the quality of life and the severity of symptoms (73). Patients' physical function is severely reduced after surgery, affecting patients' quality of Life (75–81). Research done by R Milroy et al. was based on two patient groups categorized into survivors and deaths. The survivors were those who lived



for at least three-months, and the dead were those who lost their lives (82) (Figure 5). According to previously highlighted research, QoL assessment and comparison among survivors and fatalities can depict valuable information to realize better assessment factors that transparently show a bit different in their value allocation.

SKIN CANCER

Skin cancer is the most common cancer, and its occurrence is growing as young people expose themselves to vast amounts of ultraviolet radiance (UV) and use minimal skin defense, increasing their danger (83–90). Melanoma and no melanoma skin cancer (NMSC) are the most common kinds of cancer in white people at present. Equally, tumor entities display a growing occurrence amount universal than a constant or reducing humanity amount. NMSC is an ever-increasing problem for health services everywhere which causes a critical disease. The increasing occurrence charges of NMSC can be produced by a mixture of increased exposure to ultraviolet or sunlight, increased outdoor activity, variations in dress style, improved endurance, ozone reduction in the atmosphere, and genetics and in related cases, immunosuppression. Concentrated UV exposure in infants and youth caused the advance of basilar cell carcinoma (BCC) but for the etiology of SCC, lasting ultraviolet radiance exposure in the previous periods was suspect (91). Skin cancer is one of the most common malignancies, affecting patients’ quality of life through a quickly accelerating occurrence each year. The QoL of the patients through skin cancer is influenced by the danger of complications, operation, and beauty

and practical considerations. The influences that affect the QoL in patients with skin cancer are the diagnosis of the disease, surgical interposition, and scars. It must be emphasized that most NMSC appears on sun-exposed parts, such as the face, neck, and upper limbs (92). Patients through poor quality of life displayed further threatening cognitive and emotional disease signs, lower perceived communal care, advanced mental complications, and advanced anxiety related to body image (Figure 6). Body image mediated the relationship among mental and understanding disease representations, family pressure, mental difficulties, and quality of life (94). It is clear that among seven factors of QoL mentioned in Figure 6, four out of seven show improvement after surgery in comparison with before surgery which demonstrates condition advancement of NMSC patients.

DISCUSSION

We assess and compare the data in the figures of HNC and PC, according to the figures, head and neck cancer affects the role and cognitive function more than prostate cancer. Prostate cancer patients have less appetite than head and neck cancer patients, and affording to the figures, dyspnea is more common in prostate cancer patients than in head and neck cancer patients. The social and emotional function is more affected in prostate cancer, and pain intensity is felt more in head and neck cancer patients than in prostate cancer patients. In both diseases, patients develop diarrhea, but in patients with head and neck cancer, there is more than in patients with prostate cancer. Based on prostate and lung cancer figures, we compare the quality of life of prostate and lung cancer patients. The effect of prostate cancer on the social,

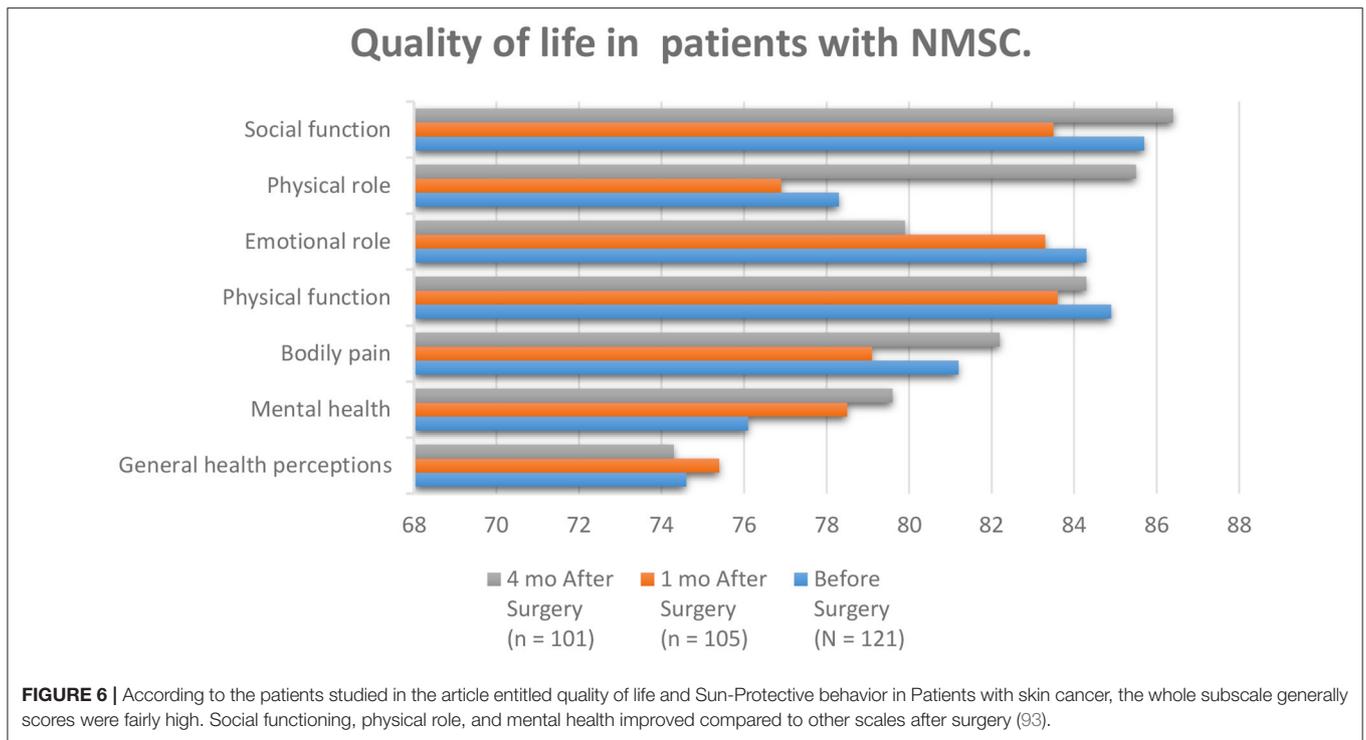


FIGURE 6 | According to the patients studied in the article entitled quality of life and Sun-Protective behavior in Patients with skin cancer, the whole subscale generally scores were fairly high. Social functioning, physical role, and mental health improved compared to other scales after surgery (93).

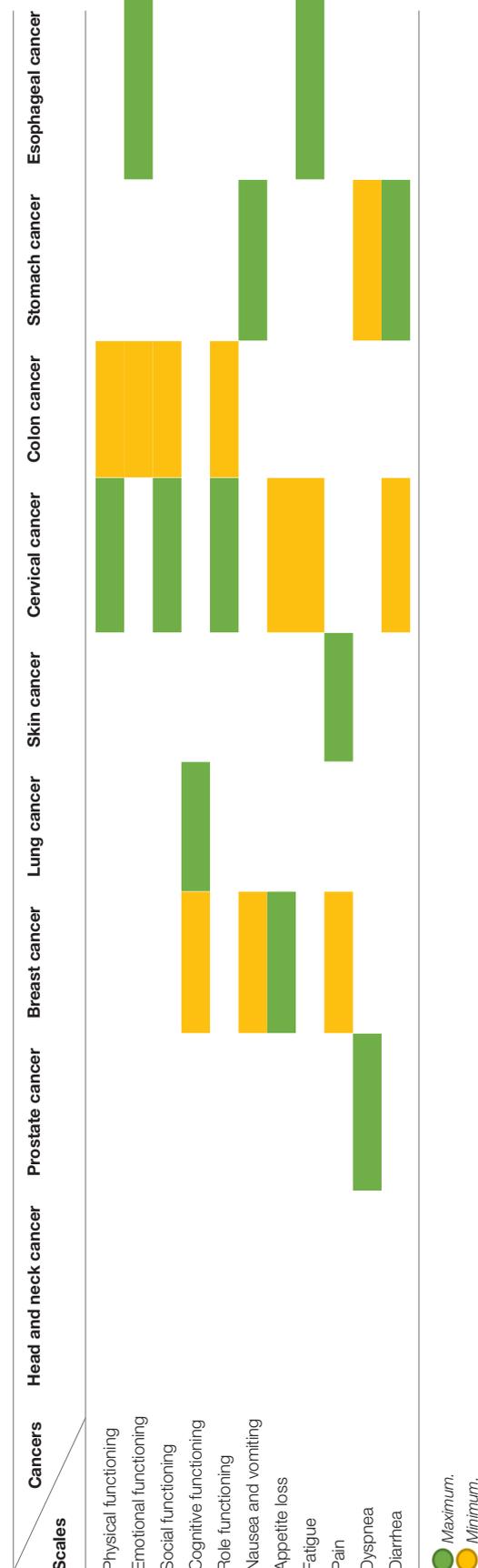
TABLE 1 | This table shows which scales are considered for each cancer in this article.

Cancers	Scales proposed for each cancer
Head and neck cancer	Physical functioning, emotional functioning, social functioning, cognitive functioning role functioning, nausea & vomiting, appetite loss, fatigue, pain, dyspnea, diarrhea
Prostate cancer	Emotional functioning, social functioning, cognitive functioning role functioning, appetite loss, pain, dyspnea, diarrhea
Breast cancer	Cognitive functioning, role functioning, nausea & vomiting, appetite loss, pain, dyspnea
Lung cancer	Physical functioning, emotional functioning, social functioning, cognitive functioning role functioning, appetite loss, pain
Skin cancer	Physical functioning, emotional functioning, social functioning, role functioning, pain
Cervical cancer	Physical functioning, emotional functioning, social functioning, cognitive functioning role functioning, nausea & vomiting, appetite loss, fatigue, pain, dyspnea, diarrhea (97)
Colon cancer	Physical functioning, emotional functioning, social functioning, cognitive functioning role functioning, nausea & vomiting, appetite loss, fatigue, pain, dyspnea, diarrhea (95)
Stomach cancer	Physical functioning, emotional functioning, social functioning, cognitive functioning role functioning, nausea & vomiting, appetite loss, fatigue, pain, dyspnea, diarrhea (96)
Esophageal cancer	Physical functioning, emotional functioning, social functioning, role functioning, fatigue, pain (98)

cognitive, and emotional functioning of patients is also greater, the severity and amount of pain in prostate cancer patients are higher than in lung cancer patients. Sleep disturbance is seen in both diseases, but they are almost more elevated in prostate cancer patients. Also, in both disorders, the appetite is decreased. Comparing the quality of life of patients with these two cancers, we concluded that the severity of pain that skin cancer patients suffer is much higher than that of head and neck cancer patients. However, skin cancer patients who have not yet had surgery have better mental health, but comparing the data, we concluded that physical function is almost the same in both diseases, but the social part of head and neck cancer patients is better than skin cancer. In patients with prostate cancer, gastrointestinal disorders such as constipation and diarrhea are observed, and even the

patient’s sleep is disturbed. Prostate cancer has a more negligible effect on functional scales such as social and emotional than skin cancer. Comparing the quality of life of skin cancer with lung cancer, we found that the impact of lung cancer on the patient’s physical, social, and emotional functioning is more significant than skin cancer. On the other hand, the severity of body pain in skin cancer patients is higher, although, by comparing breast cancer with other cancers, we found that the intensity of pain that breast cancer patients endure is lower than that of patients with head and neck and skin cancer. According to the data in the figures, nausea and vomiting are lower in breast cancer patients than in head and neck cancer patients. The severity of dyspnea in breast cancer patients is less than that of head and neck cancer. Sleep difficulties experienced by lung cancer

TABLE 2 | A comparison of all the parameters in all the cancers mentioned in this article is prepared in the table above, which shows for each criterion which cancer is highest and which is lowest.



survivors and prostate cancer patients are greater than those experienced by breast cancer patients. Comparing the figures, it was concluded that appetites in breast cancer patients in the first 3 months of the disease were reduced more than in patients with head and neck, prostate, and lung cancer. According to the information in the tables, we examined the dimensions of physical functioning and role functioning, social functioning, and emotional functioning among the cancers mentioned in this article, namely head and neck cancer and prostate cancer, breast cancer, lung, and skin cancer, and came to this conclusion. We found that the physical functioning dimension in head and neck cancer is more favorable than other cancers and the physical functioning of head and neck cancer patients is better than other cancers, and this dimension is less affected in head and neck cancer patients. Role functioning among prostate cancer patients is better than other cancer patients in this article. Also, among cancers, lung cancer has the most significant impact on physical functioning and role functioning. Examining the dimensions of emotional function and social function, it can be said that these two dimensions are more affected by head and neck cancer than other cancers, while the social role of lung cancer patients and the emotional function of skin cancer patients were better than the others.

We have added four more cancers to this article to expand the research results, and they are shown in the table below. According to the information in the tables, we examined the dimensions of physical functioning, emotional functioning, social functioning, cognitive functioning, role functioning, nausea and vomiting, appetite loss, fatigue, pain, dyspnea, and diarrhea among cancers mentioned in this article, namely head and neck cancer, prostate cancer, breast cancer, lung, skin cancer, cervical cancer, colon cancer, stomach cancer, and esophageal cancer, and concluded. Regarding the four additional cancers added to the table, the patients studied in colon cancer are patients who have undergone 3 months of rehabilitation program (95). But in the case of stomach cancer, the scales are evaluated by patients who have had a total gastrectomy (96). According to the patients studied in the article entitled, Quality of Life in Cervical Cancer Survivors and Healthy Women: Thai Urban Population Study, we were able to compare the scales in the table above with other scales. Quality of life survey through scales in the normal population in cancer of the esophagus is shown in Tables 1, 2 (98).

CONCLUSION

Reviewing and researching the Quality of Life of patients can give us essential information about patients' responses to cancer and cancer treatments, and in the communication of diverse responses and the general Quality of Life, the data gained can also affect the care options chosen. As a result, the most critical cancers encompassing breast, head, neck, prostate, lung, and skin cancer were the topical parameters and important items discussed in this article. It can be found that side effects of treatment procedures affect quality-of-life parameters efficiently. Symptoms of cancer can significantly impact the quality of

life, which substantially impacts physical, emotional, social, and spiritual health. In general, emotional and physical anxiety and fear of cancer, changes in the patient's appearance, and loss of the patient's ability to perform daily tasks can significantly impact patients' Quality of Life.

AUTHOR CONTRIBUTIONS

SJ proposed the main idea and gathered data and RG revised the article. Both authors contributed to the article and approved the submitted version.

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