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Original Article

Health Related Quality of Life among Patients with Prostate Cancer in Erbil, Iraq

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ABSTRACT

Background and objectives: Prostate cancer is one of the most common types of cancer that affects men, especially older men. The quality of life of men with prostate cancer is affected by several things, such as how long it has been since they were diagnosed and their body mass index. The study aims to identify health-related quality of life domains of participants and compare health-related quality of life among prostatic cancer patients with their body mass index and time passed from cancer diagnosis.

Methods: A quantitative descriptive cross-sectional study was conducted from February 2024 to February 2025 on 100 male patients with prostate cancer. Sociodemographic data forms and the European Organization for Research and Treatment of Cancer Quality of life questionnaires (core 30) and the Prostate Cancer Module (25 items) were used to collect data from the participants. Descriptive and inferential statistics were used to analyse data by using the Statistical Package for the Social Science SPSS (version 25).

Results: Half of the participants were aged 70 or older, and more than half were illiterate and retired. Health-related quality of life function scores differed significantly with body mass index at p-value in role (0.017), emotional (0.010), social (0.016), and sexual functioning (0.006), with normal body mass index patients showing better outcomes. In addition, significant differences were reported between the time elapsed since cancer diagnosis and symptoms such as urinary issues (p-value 0.043), bowel problems (0.009), hormonal symptoms (0.004), and sexual activity (0.019).

Conclusion: The study concluded that both body mass index and time since diagnosis significantly affect health-related quality of life in prostate cancer patients.

Keyword: Health-related quality of life; Prostate cancer; Body mass index; Time since diagnosis; European Organization for Research and Treatment of Cancer quality of life

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INTRODUCTION

Prostate cancer (PCa) is the second most frequent cancer in males and the fourth most common type of cancer overall [1]. In 2018, there were 1.3 million new cases diagnosed with prostate cancer in males around the world [2]. A recent analysis of data suggests that PCa is the most frequent type of cancer among men in the US, with the number of new cases growing by 21% per year [3]. Prostate cancer is becoming more common and is the most common cancer in men in Europe. It has great and big effects on healthcare systems in the world. About 450,000 European males are diagnosed with prostate cancer each year. It has surpassed colorectal cancer and is now the second most prevalent cause of cancer death in men. The number of deaths due to prostate cancer was 107,000 men in Europe in 2018, so it is not a slow-moving illness, but it is increasing more frequently. Prostate cancer ranks as one of the cancers, which affect patients' quality of life [4]. Age and the length of time the disease lasts are just two out of many other factors that affect the quality of life in patients with this disease. Knowing and awareness about these factors has a huge impact on the quality of life of patients to know how to deal with the disease and the disease affects the quality of life of patients after affecting them with prostate cancer, because one of the worst things that can happen to a patient's health is the impairing of quality of life [5]. Most prostate tumors are confined when they are found (clinical stage T1a to T2c, with no signs of lymph node invasion or distant metastases) [2]. The five-year relative survival rate for localized prostate cancer is around 100%, which is far higher than the general population. The survival rates for all stages are 98% and 96% at 10 and 15 years, respectively [6]. As a result, the health-related quality of life (HRQoL) of patients with prostate cancer (PCa) often declines over time, particularly three years after diagnosis [7]. Having a high quality of life (QoL) does not mean living longer [8]. To find out how well cancer treatments work, it is necessary to examine both the cancer survival rate and the health-related quality of life (HRQoL) of people with PCa. Prostate cancer is a condition that mostly affects the quality of life of the patient, making it difficult for them to do everyday things. Patients and their families have many emotional and social challenges because of a chronic sickness [9]. This study aimed to identify health related-quality of life domains in patients with prostate cancer and compare it with body mass index and time passed from prostate cancer diagnosis.

METHODS

A descriptive cross-sectional study design was carried out from February 2024 to May 2025 among 100 patients who were diagnosed with prostate cancer at Rizgary and Nanakaley Teaching Hospitals in Erbil City. The sample size was determined by Z2 p q/ d2, z = confidence interval 95% (1.96), p= prevalence= (0.07), q = (1-p) = (0.93), d = sampling error (0.05) [10]. Non-probability, purposive sampling techniques were used to collect the relevant study data. The inclusion criteria include adult male patients more than 18 years old who had PCa and were diagnosed with PCa more than three months. The exclusion criteria included patients who had psychiatric or mental problems and patients with communication problems. The researcher obtained an approval letter from the ethics committee at Hawler Medical University/ College of Nursing (Code No.2475, date 1/1/2024). The official approval was taken from the general directorate of health, Rizgary and Nanakaly Teaching Hospitals in Erbil city. ء

Informed consent was obtained from patients after explaining the aim of the study before starting the interview. Data collected by questionnaire includes three parts: The first part is "socio-demographic characteristics," like age, marital status, level of education, occupation, need for help with daily tasks, time since cancer diagnosis, underlying disease, smoking habit, history of sexual problems before cancer diagnosis, and body mass index (BMI). The second part is about quality of life and uses a questionnaire made by the European Organization for Research and Treatment of Cancer. The Quality of Life Questionnaire-Core 30 Version 3 (EORTC QLQC30 V. 3), has 30 questions in total, divided into five functional scales: physical, role, cognitive, emotional, and social function. There were also nine symptom scales and one global health-status/quality of life scale. The symptom scales measured fatigue, nausea, pain, shortness of breath, insomnia, loss of appetite, constipation, diarrhea, and financial problems. There were four possible answers for each question: "not at all" (1), "a little" (2), "quite a little" (3), and "very much" (4). The worldwide health-status/quality of life scale featured answers that ranged from very poor (1) to excellent (7) [5]. The third part: The Prostate Cancer Module of the Quality of Life Questionnaire (EORTC QLQ - PR25), has 25 questions, which are divided into six symptom scales and function: urine symptoms, bowel symptoms, incontinence, hormone symptoms, sexual activity, and sexual function. There were four answers for each item: not at all (1), a little (2), quite a little (3), and very much (4). [11]. The questionnaires gave us a formula to use to figure out the function score, which was then changed to a number between 0 and 100. The scores for each domain were given separately. In the functional domains, a higher scores meant a better condition but in symptom domains, the higher score means worse condition [5]. Regarding data analyses Statistical Package for Social Science (SPSS) version 25, was used for calculating descriptive statistical data analysis (such as frequency, percentage, mean and standard deviation), and for comparison of health-related quality of life (HRQoL) with body mass index and time since cancer diagnosis, inferential statistical data analysis (ANOVA test) was used.

RESULTS

Table 1 shows the distribution of socio-demographic characteristics of 100 patients diagnosed with prostate cancer PCa, half of them 50% were aged 70 years and older, while 33% were between 60–69 years, and the lowest 17% were below 60 years. All participants were married. Regarding education, 52% were illiterate, 21% had elementary education, 18% had institute-level education, and only 9% had a college degree respectively. In terms of occupation, 51% were retired, 37% unemployed, and only 12% were employed. Less than half, 38%, of the participants reported needing help with daily living activities, while 62% were Independent. Regarding the time since diagnosis, 46% had been diagnosed for 1–3 years, 28% for less than one year, and 26% for more than 3 years. Additionally, 42% of the patients reported being smokers, and 37% had a history of sexual problems prior to diagnosis. Regarding BMI, 45% of the patients had normal weight, 35% of them were overweight, and 20% were obese.

Table1: Socio-demographic Characteristics of Prostate Cancer Patients (N = 100)

Socio-Demographic Characteristics	Category	Frequency (n)	Percent (%)
Age Group	60 >	17	(17)
	69–60	33	(33)
	70 ≤	50	(50)
Marital Status	Married	100	(100)
Educational Level	Illiterate	52	(52)
	Elementary	21	(21)
	Institute	18	(18)
	College	9	(9)
Occupation	Employed	12	(12)
	Unemployed	37	(37)
	Retired	51	(51)
Needs Help with Daily Living Activities	Yes	38	(38)
	No	62	(62)
Time Passed Since Cancer Diagnosis	1 >year	28	(28)
	3–1years	46	(46)
	3 <years	26	(26)
Smoking Habit	Yes	42	(42)
	No	58	(58)
History of Sexual Problems Before Diagnosis	Yes	37	(37)
	No	63	(63)
Body Mass Index	Normal	45	(45)
	Overweight	35	(35)
	Obese	20	(20)

Table 2 shows health-related quality of life (HRQoL) scores, between body mass index (BMI) categories (normal, overweight and obese). Patients with normal BMI had higher scores in physical functioning (29.78 ± 24.40), role functioning (31.11 ± 26.73), and emotional functioning (31.39 ± 20.79), indicating better quality of life compared to overweight and obese patients. BMI significantly affected p-values for emotional functioning (0.010), role functioning (0.017), social functioning (0.016), and sexual functioning (0.006), with obese individuals reporting lower scores in these domains. However, global health status, fatigue, and pain did not differ significantly by BMI categories p-value (> 0.05).

Table 3 revealed that the comparing health -related quality of life (HRQoL) score with the time passed since cancer diagnosis, As a general Patients diagnosed from 1–3 years ago had higher scores in role functioning (28.53 ± 24.53) and emotional functioning (28.67 ± 20.56) compared to those recently diagnosed or with long-term diagnoses (>3 years). Time since diagnosis significantly affected at p-values for urinary symptoms (0.043), bowel symptoms (0.009), hormonal symptoms (0.004), and sexual activity (0.019). Other domains such as fatigue, pain, and global health status in these findings showed no statistically significant differences across the diagnosis duration groups.

Table 2: Health related quality of life and symptoms scales by body mass index

Body Mass Index	Normal (n=45) (Mean ± SD)	Overweight (n=35) (Mean ± SD)	Obese (n=20) (Mean ± SD)	P-value ANOVA
QLQ-C30 Functioning Scale				
Global HRQOL	41.42±81.66	37.75±82.85	40.16±97.50	0.33
Physical Functioning	24.40 ± 29.78	20.05 ± 20.43	22.38 ± 18.25	0.083
Role Functioning	26.73 ± 31.11	19.02 ± 18.21	24.63 ± 15.63	**0.017**
Cognitive Functioning	20.38 ± 25.28	17.96 ± 20.36	18.85 ± 15.00	0.132
Emotional Functioning	20.79 ± 31.39	18.93 ± 27.14	18.29 ± 15.00	**0.010**
Social Functioning	23.18 ± 33.89	23.50 ± 29.64	23.25 ± 15.63	**0.016**
QLQ-C30 Symptom Scale				
Fatigue	25.41 ± 26.11	21.43 ± 20.95	21.94 ± 22.92	0.614
Nausea and Vomiting	23.06 ± 9.72	10.97 ± 4.64	6.12 ± 1.88	0.180
Pain	23.21 ± 23.89	27.47 ± 22.14	24.43 ± 20.63	0.880
Dyspnea	18.68 ± 9.44	14.96 ± 9.29	16.77 ± 8.75	0.989
Insomnia	25.46 ± 27.22	23.86 ± 20.71	23.79 ± 20.00	0.393
Appetite Loss	23.33 ± 16.11	24.51 ± 13.57	18.63 ± 8.75	0.491
Constipation	21.72 ± 11.67	24.47 ± 14.29	13.75 ± 6.25	0.412
Diarrhea	20.23 ± 10.00	15.27 ± 6.43	12.23 ± 3.75	0.366
Financial Difficulties	24.52 ± 33.89	24.08 ± 32.86	25.13 ± 20.00	0.094
QLQ-PR25 Scale				
Urinary Symptoms	19.09 ± 18.77	21.15 ± 24.76	19.97 ± 21.53	0.416
Bowel Symptoms	13.31 ± 6.30	18.86 ± 11.43	19.17 ± 5.42	0.300
Hormonal Symptoms	14.83 ± 6.81	17.87 ± 10.36	18.31 ± 9.38	0.622
Sexual Activity	14.86 ± 18.33	19.81 ± 19.46	20.08 ± 10.63	0.181
Sexual Functioning	24.45 ± 30.78	27.74 ± 26.86	21.70 ± 8.75	**0.006**

Table 3: Health related quality of life and symptoms scales by time passed from cancer diagnosis

Time passed from Diagnosis	1 > year (n=28) (Mean ± SD)	1–3 year (n=46) (Mean ± SD)	> 3 year (n=26) (Mean ± SD)	P-value ANOVA
QLQ-C30 Functioning Scale				
Global HRQOL	43.07±92.41	38.72±84.78	43.81±78.36	0.45
Physical Functioning	25.66 ± 22.69	20.85 ± 25.33	24.21 ± 23.75	0.891
Role Functioning	26.51 ± 19.23	24.53 ± 28.53	22.17 ± 19.20	0.170
Cognitive Functioning	18.79 ± 19.23	18.50 ± 22.83	22.01 ± 21.43	0.757
Emotional Functioning	19.60 ± 25.48	20.5 ± 28.67	21.34 ± 24.33	0.644
Social Functioning	23.74 ± 29.81	23.27 ± 26.90	26.24 ± 30.80	0.773
QLQ-C30 Symptom Scale				
Fatigue	22.89 ± 24.04	26.20 ± 28.26	16.09 ± 15.77	0.081
Nausea and Vomiting	6.14 ± 2.40	21.44 ± 8.15	16.11 ± 7.14	0.383
Pain	23.33 ± 21.63	28.16 ± 27.99	17.70 ± 14.73	0.080
Dyspnea	15.93 ± 9.62	19.54 ± 11.96	11.89 ± 4.46	0.181
Insomnia	26.76 ± 22.12	25.44 ± 29.35	18.43 ± 15.18	0.051
Appetite Loss	18.63 ± 8.65	25.64 ± 17.93	20.95 ± 11.61	0.216
Constipation	16.98 ± 7.69	20.17 ± 10.87	26.54 ± 16.07	0.348
Diarrhea	18.40 ± 7.69	16.56 ± 7.61	17.82 ± 7.14	0.992
Financial Difficulties	26.75 ± 30.77	22.55 ± 29.35	27.26 ± 33.04	0.828
QLQ-PR25 Scale				
Urinary Symptoms	19.94 ± 17.31	20.45 ± 26.81	17.51 ± 16.37	**0.043**
Bowel Symptoms	13.96 ± 3.21	17.87 ± 13.41	14.58 ± 3.27	**0.009**
Hormonal Symptoms	15.68 ± 5.29	17.31 ± 14.27	13.09 ± 2.23	**0.004**
Sexual Activity	19.10 ± 13.46	16.16 ± 22.55	17.71 ± 11.83	**0.019**
Sexual Functioning	25.50 ± 24.04	25.33 ± 26.30	29.21 ± 23.75	0.901

DISCUSSION

The present study findings demonstrate that the highest percentages of prostate cancer patients were aged 70 years and older and married. A high percentage were illiterate and the majority were retired. The current findings are supported by a cross-sectional study conducted in Egypt from Ain Salam University Hospital on 101 patients diagnosed with prostate cancer, which showed that over 60% of prostate cancer patients were aged above 65, with the majority of them being retired and illiterate. Similarly, another study supports the findings of the present study, which conducted in Jordan, found that most of the patients diagnosed with prostate cancer were married, old and had low educational levels [11,12]. Regarding occupation, the present study findings agree with the findings of a study done by Hacettepe University Faculty of Medicine on 173 patients, in which more than half of the prostate cancer patients were retired [13]. Furthermore, regarding the smoking habits and sexual history, the majority of the patients were nonsmokers, and approximately one-third of the patients had sexual dysfunction before diagnosis. It agrees with the result of a study done in Iran on 210 patients, which showed that most of them were nonsmokers and more than 35% received treatment for sexual

problems before the diagnosis [14]. Moreover, a retrospective cohort study, which was conducted at two oncology hospitals in Saudi Arabia, revealed that most patients with prostate cancer were married, aged above 65, and living with chronic comorbidities [15]. About health-related quality of life (HRQoL) and symptoms compared with body mass index (BMI) categories, there are significant relationships between body mass index (BMI) and several health-related quality of life (HRQoL) domains, including emotional functioning, role functioning, social functioning, and sexual functioning. Patients with a normal BMI reported better quality of life across these domains compared to overweight and obese participants. The results of the present study are consistent with the findings of a study that was conducted, which showed that elevated BMI had a negative effect on sexual and emotional functions in men with this type of cancer [16]. Moreover, the current study findings come along with a cross-sectional study conducted in the Netherlands on 314 patients, which body mass index had significant association with better scores on physical, role, social, and emotional functioning scales measured by EORTC QLQ-C30 and PR25 modules [17,18]. Regarding time passed after diagnosis, Table 3 shows that health-related quality of life domains such as urinary symptoms, bowel function, hormonal symptoms, and sexual activity significantly affected the quality of the patient's life. Patients diagnosed less than one year reported more severe symptoms than those patients who had passed the disease for 1 to 3 years or more. These findings are compatible with the result of a study conducted in South Korea, which found that symptom burdens were highly affected during the first year after diagnosis and gradually tended to decrease [19]. Additionally, a cohort study done in Finland showed that men with prostate cancer significantly improved in sexual functioning and urinary control 12 to 24 months after disease [20]. In addition, another study in Canada confirmed that long-term survivors (≥3 years post-diagnosis) promote better quality of life outcomes [21].

CONCLUSION

Health-related quality of life in the PCa was affected by the patients' body mass index; this findings highlights the importance of paying attention to functioning scales such as role, emotional and social function and sexual function in the quality of life of prostate cancer 25 items (QLQ-PR 25) scale: Regarding time passed after prostate cancer diagnosis, it is important to pay attention to patients' symptom scales and quality of life of prostate cancer such urinary, bowel, hormonal and sexual activity.

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