WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 7.523
Volume 6, Issue 8, 61-75. Research Article ISSN 2277–7105

EVALUATION OF PROSTATE CANCER HEALTH-RELATED QUALITY OF LIFE (SPECIFIC SCALE) AMONG A SAMPLE IN BAGHDAD CITY

[1]*Prof. Dr. Abdulkhaleq A. Ali Ghalib Al-Naqeeb and [2]Ahmed Aziz Hasan

[1]College of Medical & Health Technology, Baghdad, Iraq.

[2]Community Health, Ministry of Health, Iraq.

Article Received on
26 May 2017,

Revised on 15 June 2017,
Accepted on 06 July 2017

DOI:10.20959/wjpr20178-8846

***Corresponding Author**
Prof. Dr. Abdulkhaleq A. Ali Ghalib Al-Naqeeb
College of Medical & Health Technology, Baghdad, Iraq.

ABSTRACT

Objectives: this study amid to identify and study most properties of the specific health-related quality-of-life (HRQoL) in men with prostate cancer, and to find out relationships among distribution of an overall assessment quality of life improvement and socio-demographic characteristics, as well as with general information variables. **Methodology:** A cross sectional design study was conducted to evaluate Specific Quality of life in patients with prostate cancer. A convenient, purposive sample of 100 adults patients with prostate cancer who have been diagnosed and treated in Al-Amal National Hospital for cancer management and Oncology Center in Baghdad Medical city where they admitted for treatment and follow up visits. This study applied format concerning Specific QoL Questionnaires related to prostate cancer [Jack A. Clark. 2010]. The methods used descriptive statistics (Observed frequencies, percentages, mean of score, standard deviation, relative sufficiency, and contingency coefficient relationships) to evaluate the Specific QoL-Improvements, as well as inferential statistical methods are used such that (Chi-Square test, Binomial test, and Contingency's Coefficients test). **Results:** Regarding Specific QoL, overall results shows moderate assessment, but some domains are reported worse assessment than others specially (sexual confidence, marital affection and regret) domains, other domains accounted moderate responses and those are (urinary control, masculine and self-esteem, heath worry, cancer control, informed decision and outlook), while (sexual intimacy and PSA concern) domains are accounted high responding, therefore, prostate cancer patients have instability of their daily life cycle, within a moderate level. In

addition to that, Overall specific QoL redistribution shows that (SDCv., and GIv.) reported significant relationships in at least at P<0.05, except with marital status, education, residency, and asking whether patients are under treatment now, since weak relationships are obtained with no significant at P>0.05. **Recommendations:** Establishing of educational program to improve health related quality of life for prostate cancer patients. As well as initiation of support groups for men having it, psychosocial care of men with0advanced cancer is an important0consideration. Sexual rehabilitation principles for persons0with0chronic illness may prove useful. Psychological interventions for sexual sequelae need to be offered and individualized to patients, regardless of their age or partnership. Governmental commitment by offering all support to improve HRQoL for prostate cancer patients generally by providing cancer medications and support by their socio-economic status by providing financial donation.

KEYWORDS: Quality of life, Prostate cancer, Health related QoL, Life style impact by prostate cancer.

INTRODUCTION

QoL is not a new0concept0but rather a concept in which its terminology and defining characteristics have evolved over time. Much0of the early QoL research has0its origins in sociology, psychology0and economics. Well into the 20th century, QoL was an indicator of societal well-being, and was conceptualized quantitatively. Objective measures (e.g. income, education, housing, safety) were the cornerstone of early QoL research. Research from the 1970s indicated that even0though Americans had higher incomes, more education and0greater materialism, they were0not0necessarily happier.[1] From this research emerged the concept of subjective0indicators of QoL (e.g. aspirations, expectations, 0happiness, satisfaction).[2]0Current definitions of QoL differ in wording, but they share0the following under-lying0premise: QoL is an individual's "appraisal of and satisfaction with their current level of functioning compared to what they0perceive to be possible or ideal".

Research with cancer0patients has identified and conceptualized QoL as having five dimensions with the following0defining attributes: emotional well-being (e.g. life satisfaction, body0image, control, happiness, meaning of life, coping ability); physical well-being (e.g. eating, 0appetite, sleep, fatigue, side effects of treatment); functional0well-being (e.g. ability to carry out activities of daily living, general function); spiritual well-being0 (e.g.

meaning of illness, religiosity, hopefulness, uncertainty) and social well-being (e.g. social support, relationships, role0function, social activities).[3]

The recent increase in survival rates of men diagnosed with PC, however, presents new0challenges. Palliative care issues, 0such as symptom management, have emerged as0major concerns as men cope with various treatments (e.g., surgery, radiation, chemotherapy, and hormone therapy) 0and the subsequent side effects, both physiological0 (sexual dysfunction and incontinence) and psychological0 (depression and anxiety). 0The adjustments that men have to make are challenging as0they deal with emotional distress and manage changes in physical and social functioning while maintaining quality0of life. Some men are cancer-free after0treatment while others live with the disease for many years. The fact that men live with rather than die from PC does not alleviate the emotional, 0social, sexual and0physical impairments associated with PC. Consequently, most0men diagnosed with PC face the prospect of a life-long future trying to manage the challenging effects0of the disease and its treatment, both of0which impact their0quality of life.[4]

Despite its significance0for men's health less is known about the psychosocial impact of PC and its treatment than that of other cancers.

Research related to quality0of life, has focused primarily on the physical side effects of treatment, rather than the psychological effects and0emotional distress.[5] Very0little is known regarding0the psychosocial health and well-being of these large group0of chronically ill, 0oftentimes elderly, male patients. Researchers have suggested that factors0such as cancer staging and treatment influence men's adjustment to PC.[6,7] Although these variables have been among the most common factors associated with0quality of life or well-being, other psychosocial variables warrant attention. Given the disease's potential0trajectory, from the immediate impact of diagnosis, to the phase of palliative and terminal care (with its attendant0existential0issues), along with the complexity of psychological adjustment, this is a fertile area for research.[8]

OBJECTIVES

1. To identify and study most properties of the Specific health-related quality-of-life (HRQoL) instruments in men with prostate cancer.

2. To find out relationships among an overall assessment of health related quality of life (HRQoL) in patients with prostate cancer with some related variables such as socio-demographic characteristics, as well as with general information variables.

METHODOLOGY

Setting of the study: A cross sectional study design (descriptive study) for patients with prostate cancer was conducted starting between (December 2016 and February 2017) in Al-Amal National Hospital for cancer management and Oncology Center in Baghdad Medical City in Iraq.

The sample of the study: A convenient, purposive sample of 100 adults patients with prostate cancer who have been diagnosed and treated by oncologist Al-Amal National hospital for cancer management and Oncology Center in Baghdad Medical City where they admitted for treatment also arrange for follow up visits for re-examination follow up.

Steps of the Study: For evaluating health related quality of life in patients with prostate cancer concerning criteria "Specific "quality of life questionnaires. To assess patients needs, this study use a reliable questionnaire format of Specific QoL Questionnaire which consists (55) developed to measure one or more dimensions of health related QoL in prostate cancer patients, the specific questionnaire consist of (11) domains: Urinary control, Sexual intimacy, Sexual confidence, Masculine self-esteem, Marital affection, Health worry, PSA concern, Cancer control, Informed decision, Regret and Outlook. This study take into consideration the significant of patients socio-demographical characteristics variables, as well as some general information such as duration of illness, type of treatment, and if the patient have prostatectomy of no. In addition to that, this study take into consideration the complains might be resulted by the studied disease. The researcher interviewed patients, for 30 minutes for each patient to answer all questions.

Descriptive data analysis

a- Tables (Frequencies, and Percentages)

Summary Statistics tables including: Percentile Grand Mean of score (PGMS) with their Standard Deviation (SD), and assessment by scoring scales throughout three sequential intervals for assessing (PGMS) in light of intervals (20.00 – 46.66, 46.67 – 73.33, 73.34 – 100).

b- Redistribution of (PGMS) by (under/upper) cutoff point for creating an association table for an overall assessments concerning Specific QoL.

c- Graphical presentation by using "Bar Chart".

RESULTS

Table 1: Distribution of studied sample according to (SDCv.) with comparisons significant.

SDCv.	Groups	No.	Cum. %	C.S. (*) P-value
Age Groups	50 – 59	28	28	χ^2= 4.220 P=0.121 (NS)
	60 – 69	43	71	
	70 – 80	29	100	
	Mean ± SD	64.28 ± 7.30		

Continue …

SDCv.	Groups	No.	Cum. %	C.S. (*) P-value
Education state for patient	Illiterate	2	2	χ^2= 84.56 P=0.000 (HS)
	Read & Write	7	9	
	Primary	5	14	
	Intermediate	11	25	
	Secondary	26	51	
	College & More	49	100	
Marital State (Social Stat)	Married	96	96	P=0.000 (HS)
	Widow	4	100	
Job of patient (Occupation)	No	60	60	P=0.057 (NS)
	Yes	40	100	
Job Type (Occupation)	Non Applicable	60	60	P=0.057 (NS)
	Private	5	(12.5)	
	Governmental	35	(87.5)	
Residency	Urban	95	12.5	P=0.000 (HS)
	Rural	5	87.5	

(*)HS: Highly Sig. at P<0.01; NS: Non Sig. at P>0.05; Testing based on One-Sample Chi-Square test, and Binomial test.

Respect to subjects of studied (SDCv.), results shows that no significance differences are accounted at P>0.05, except in residency, which represented significant difference at P<0.01.

Table 2: Distribution of studied sample according to (SES) with comparisons significant.

SES	Groups	No.	Cum. %	C.S. (*) P-value
Socio-Economic Status	Low : 59 - & less	14	14	χ^2= 48.56 P=0.000 (HS)
	Mod. : 60 - 80	66	80	
	High :81 - 100	20	100	

(*)HS: Highly Sig. at P<0.01; NS: Non Sig. at P>0.05; Testing based on One-Sample Chi-Square test; (SES): Socio-Economic Status.

Vast majority of studied sample had a moderate SES responding, and they are accounted 66(66.0%).

Table 3: Sample's distribution according to General Information of studied patients.

General Information	Groups	No.	Cum. %	C.S. (*) P-value
Age onset Yrs.	1 - 2 yrs.	64	64	χ^2= 303.6 P=0.000 (HS)
	3 - 4 yrs.	28	92	
	4 > yrs.	8	100	
	Mean ± SD	1.44 ± 0.64		
Are you under treatment now?	No	1	1	P=0.000 (HS)
	Yes	99	100	

Continue …

General Information	Groups	No.	Cum. %	C.S. (*) P-value
If yes what is your treatment now (Medication treatment)?	Non Applicable	1	1	χ^2= 303.6 P=0.000 (HS)
	Medical	95	(96)	
	Surgical	4	(4.0)	
Had you have prostatectomy (due to cancer)?	No	87	87	P=0.000 (HS)
	Yes	13	100	
If yes, how old were you?	No Applicable	87	87	χ^2= 303.6 P=0.000 (HS)
	< 60	2	(15.4)	
	60 - 70	10	(76.9)	
	> 70	1	(7.70)	
	Mean ± SD	62.69 ± 3.92		

(*)HS: Highly Sig. at P<0.01; NS: Non Sig. at P>0.05; Statistical hypothesis based on Binomial, and χ^2: Chi – Square tests, and Binomial test.

As well as comparisons significance are obtained in order to explore behavior of that variables either randomly or none randomly distributed comparing with their expected outcomes, which shows highly significant differences at P<0.01 among different levels of that variables.

Relative to subject of "Age Onset", studied sample are seems to be focusing at the first age onset group, since 64(64%) of total patients are accounted, with mean, and standard deviation 1.44 yr., and 0.64 yr. respectively.

Respect to subject of asking "Are you under treatment now?" all of studied sample had answered positively, except one only. And most of studied patients had a medication treated, and they are accounted 95(96.0%).

Regarding to subject of asking "Had you have prostatectomy (due to cancer)?" results showed that patients who had positively answered, are accounted 13(13%), and most of them are aged (60 – 70) years, with mean, and standard deviation 62.69 yrs., and 3.92 yrs. respectively.

Distribution of Questionnaire's Domains (Specific QoL)

Regarding subjects of Specific QoL, table (4) shows summary statistics, such that, percentile grade mean of score, standard deviation, as well as different responding levels of assessing main domains for health related QoL in men with prostate cancer questionnaire, by 3 distinguish categories, such that (Low, Moderate, and High) in light of [(0.0 – 33.33), (33.34 – 66.66), (66.67 – 100)] intervals respectively, which consist of (Urinary Control, Sexual Intimacy, Sexual Confidence, Masculine Self-Esteem, Marital Affection, Health Worry, PSA Concern, Cancer Control, Informed Decision, Regret, and Outlook) main domains.

Regarding to subjects of "Sexual Confidence, Marital Affection, and Regret", main domains results shows that low assess are accounted for patients with prostate cancer, then followed by moderate assessment concerning "Urinary Control, Masculine Self-Esteem, Health Worry, Cancer Control, Informed Decision, and outlook", and then followed by high assessment for (Sexual Intimacy, and PSA Concern).

For summarizes of preceding results it could be conclude that patients with prostate cancer having a different assess concerning specific health related QoL in men with prostate cancer, and that reflected instability in their daily life cycle.

Table 4: Summary Statistics of percentile Score Specific QoL in men with prostate cancer main domains.

Main Domains Specific QoL	No.	PGMS	SD	Assessment
Urinary Control	100	56.06	20.44	Moderate
Sexual Intimacy	100	80.11	18.37	High
Sexual Confidence	100	10.13	16.01	Low
Masculine Self-Esteem	100	36.03	21.83	Moderate
Marital Affection	100	17.83	15.76	Low
Health Worry	100	55.71	22.76	Moderate
PSA Concern	100	74.13	17.79	High
Cancer Control	100	65.10	19.44	Moderate
Informed Decision	100	53.55	17.70	Moderate
Regret	100	25.50	21.33	Low
Outlook	100	49.13	28.77	Moderate
Overall Specific QoL	100	47.57	8.35	Moderate

PGMS: Percentile Grand Mean of Score; SD: Standard deviation according to PS: Percentile Score by (L: Low; M: Moderate; H: High)

Figure (1) represent percentile grand mean of score values, as well as an overall assessment of studied specific health related QoL in men with prostate cancer main domains.

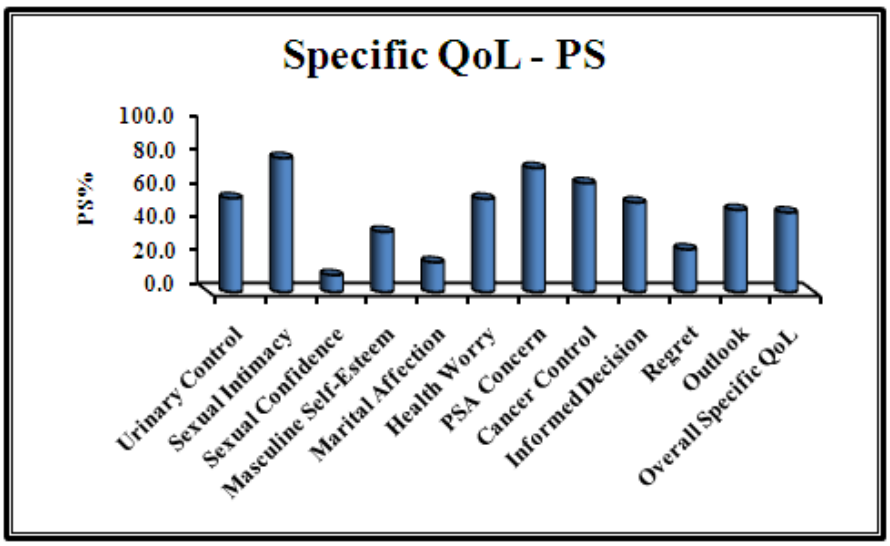

Figure 1: Bar chart for Distribution of Percentile Grand Mean of Score for Specific Health Related QoL main domains at the studied sample.

To find out relationships for an overall assessments of specific – QoL in men with prostate cancer and [Socio-Demographical Characteristics variables-(SDCv.), and General Information variables-(GIv.)], table (4-4-1) consist a contingencies coefficients relationships with significant levels.

Table 4-4-1: Relationships among Specific QoL Prostate's Patients in light of Socio-Demographical Characteristics, and General Information variables.

SDCv., and GIv.	Specific - QoL	
	C.C.	P-value
Age Groups	0.275	0.017 (S)
Marital State	0.168	0.089 (NS)
Education	0.165	0.730 (NS)
Occupation	0.396	0.000 (HS)
Residency	0.097	0327 (NS)
Socio-Economic Status	0.316	0.004 (HS)
Age onset	0.257	0.029 (S)
Are you under treatment now?	0.083	0.402 (NS)

(*)HS: Highly Sig. at P<0.01; S: Sig. at P<0.05; NS: No Sig. at P>0.05; Statistical hypothesis based on Contingency's Coefficient test.

Overall specific QoL redistribution (under/upper) a cutoff point of percentile scoring scales transformation shows that (SDCv., and GIv.) reported significant relationships in at least at P<0.05, except with marital status, education, residency, and asking whether patients are under treatment now, since weak relationships are obtained with no significant at P>0.05.

DISCUSSION

Regarding Socio-Demographical Characteristics, the present study revealed in table (1) that most patients (Cum.%=71%) at age (60-69) yrs. were more affected by prostate cancer at P>0.05. Amy Y. Zhang, et al.2016 in USA supported the present finding by considering that majority of prostate cancer patients were at age of (60-70) yrs. (P>0.05).[9] While Cyllene R., et al, 1999[Cylleneet al. 1999] resulted that (43.2%) with prostate cancer were between (70-79) yrs. of age.[10] This disagreement may due to change in diagnosis techniques that makes early detection of prostate cancer is possible.

Ninety six of the studied sample were married (P<0.01), and this finding disagree with finding of Amy Y. Zhang, et al. 2016 they reported when they assessed QoL of prostate cancer patients after treatment (P>0.05).[9] This disagreement may be due to social differences between Iraq and the country where Amy's study done.

Forty nine (49%) of the patient's education levels in the present study were college and more (P<0.01), this indicates the importance of high level of education in early detection and treatment of prostate cancer by routine checkup, as well as not to ignore any symptoms that could be related to prostate cancer and seeking health care to avoid more complications

related to prostate cancer if it is not diagnosed early. This finding agree with Amy Y. Zhang, et al 2016 study where it was significant at (P<0.05).[9]

Sixty patients (60%) of the sample in the present study were non occupied (retired). This finding was similar to previous study done by Amy Y. Zhang, et al.2016 where retired persons accounted the most in the sample. This is due to the patients are elderly and prostate cancer nature.[9]

Regarding Socio-Economic status table (2) in the present study revealed that patients with moderate income were (66%) of the sample (P<0.01). This finding disagree with results of Amy Y. Zhang, et al.2016 when they reported that socioeconomic factors are not associated with prostate cancer with (P>0.05).[9] This disagreement may be due to different environmental and economic conditions between Iraq and Amy's country.

Regarding general information of patients related to prostate cancer, the present study findings in table (3) indicated that all the study sample were chosen one year and more after diagnosis (P<0.01), that's to ensure sensitivity to sometimes small, but clinically significant, changes in health status and levels of disease severity which affect the patient's QoL because prostate cancer is asymptomatic in early stages.[11]

Vast majority of patients are under treatment either radiotherapy, chemotherapy or had radical prostatectomy and they consist 99 (99%) of studied sample, such finding which agree with study done by Bowling A, et al 2001 and other study done by Jack A. et al 2003 to evaluate quality of life in prostate cancer patients. All patients in their studies were under treatment and their ages ranged between (60-70) yrs. old as well.[11,12]

Distribution of Specific Health related Quality of Life

Regarding subjects of urinary control, this scale assessed problems of living with urinary dysfunction (eight items; eg, feelings of embarrassment, helplessness, preoccupation with need to urinate, limitations in activities), table (4) showed that the overall response for this domain was moderate in the present study. This finding disagree with study done by Clark J.A., et al in 2003 which revealed that urinary control domain is highly affected by prostate cancer (P<0.01) [12]. This disagreement may due to different treatment strategies and options between Iraq and Clark's country.

Table (4) in present study illustrate that sexual intimacy response fall inside high interval, this finding revealed that patients with prostate cancer have an actual problem with sexual intimacy, since all domain's items showed high responses. Our findings regarding sexual intimacy agreed with previous study done by Waldmann A., et al. in 2009 which revealed that sexual intimacy is highly affected by prostate cancer ($P<0.01$).[18]

Regarding Sexual Confidence, table (4) indicated that patients with prostate cancer have actual problems, since all items of health related QoL questionnaire are accounted low responding. The present study is in agreement with another study done in 2003 by Clark J.A. et al, their findings accounted that prostate cancer and its treatment greatly affect sexuality and sexual confidence as seen in studied sample with highly significant difference ($P<0.01$).[12]

Regarding Masculine Self-Esteem, the present study findings illustrate the effect of prostate cancer on masculine self-esteem; the present study indicated that prostate cancer patient's masculine moderately affected by the disease, since most studies items accounted moderate responses. The present study is in agreement with other study done by Arrington M. I. in 2008 which stated that few men contest those norms and create new identities for themselves in the wake of the disease. Most men choose or see no other valid choice than to accept the social definition of masculinity and, consequently, perceive themselves as less masculine than they were before the diagnosis.[13] A study done by Clark J.A., et al in 2003 disagree with our finding regarding masculine self-esteem domain, which estimate highly significant relationship between prostate cancer and Masculine & Self-Esteem ($P<0.01$).[13] Disagreement could be related to different psychological and social characteristics between the two countries.

Concerning Marital Affection, table (4) demonstrated that patients with prostate cancer haven't actual problems, since all items concerning health related QoL questionnaire are accounted low responses. The present study disagrees with Zaider T., et al research which revealed that prostate cancer patients have serious problem regarding marital affection with highly significant difference of ($P<0.01$).[14] This disagreement may due to different social characteristics between Iraq and Zaider's country.

Results of the present study in table (4) revealed that prostate cancer patients showed moderate specific QoL concerning health worry problems, since most of studied items of

health related QoL questionnaire are accounted moderate responding. The present study disagree with previous study done by Clark J.A., et al. 2003 aimed to measure HRQoL in men with prostate cancer which revealed low response to health worry domain, (P>0.05).[12] This disagreement may be due to the different medical system and availability of psychological support in Clark's country compared with Iraq.

Results concerning PSA Concernindicated that patients with prostate cancer keep close tracking their PSA and knowing PSA level comforting them, since all items concerning health related QoL questionnaire are accounted high responding to PSA concern.These results agree with Clark's study which showed the same response regarding PSA concern.[12] Clark's study revealed that majority of prostate cancer patients keep tracking their PSA levels and knowing the results is comfortable for them.

Cancer control was given by 5 items referring to fear of recurrence or progression, as well as confidence that one's cancer was under control. Table (4) indicated that prostate cancer patients responses fall inside a moderate interval, while leftover items of having high and it is "I worry that my cancer might come back, and I worry about my cancer spreading". These results indicate that patients with prostate cancer having a seesaw specific QoL concerning cancer control problems, since of studied items concerning health related QoL questionnaire are accounted a moderate and high responses. The present study finding regarding cancer control disagrees with previous study done in 2006 by Clark J. A. and Talcott J. A. which stated that cancer control domain reported high response with high significant difference of (P<0.01).[15]

Informed Decision addressed perceptions of having sufficient information when choosing a treatment, being fully informed by one's doctors, and experiencing satisfaction with patient's choices. The present study showed that most studied patients reported moderate response, since all specific QoL for the studied sample in this part fall inside moderate interval. A previous study done in 2006 by Clark J. A. and Talcott J. A. support our finding, which illustrated that prostate cancer patients reported moderate responses regarding Informed Decision(P<0.05).[15]

Regret assessed feelings of having made the wrong treatment choice of treatment and a wish to undo that decision, table (4) showed that patients with prostate cancer haven't actual problems concerning specific QoL of feeling regret, since studied items accounted low

response. The present study agreed with a studies done in 2003 by JIM C. H. et al which stated that Of 96 respondents (mean age 64 yrs, mean follow up 2.8 yrs.) 16% expressed regret with treatment decisions. Regretful men were more likely to say they would choose a different treatment if they could. In multivariate analyses worse quality of life predicted regret but decline in quality of life with time was not associated with regret.[16]

Outlook was given by 2 items that assessed the perception that coping with cancer has made one stronger or resulted in a better outlook on life. Table (4) illustrated that prostate cancer patients in this part assigned that all observed responses are fall inside moderate interval, which indicate that patients with prostate cancer have moderate problems concern outlook, since all items accounted a moderate responding. The present study disagrees with previous study done in 2003 by Clark J.A., et al.,[12] which revealed that patients accounted low responses regarding Outlook. This disagreement may be related to psychosocial differences between Clark's country and Iraq.

The present study finding in table (4) regarding overall specific QoL indicate that patients with prostate cancer have different assessment, which instability conditions of their daily life. The overall assessment for specific QoL accounted moderate response, this finding disagreed with previous study done in 2008 by Joseph K. J., et al, on two groups and followed for one year,[17] which stated that there is no significant difference in HRQoL in prostate cancer patients (P>0.05).

RECOMMENDATION

This study recommend the following:

Establishing of educational program to improve health related quality of life for prostate cancer patients. As well as initiation of support groups for men having it, psychosocial care of men with0advanced cancer is an important0consideration. Sexual rehabilitation principles for persons0with0chronic illness may prove useful. Psychological interventions for sexual sequelae need to be offered and individualized to patients, regardless of their age or partnership. Governmental commitment by offering all support to improve HRQoL for prostate cancer patients generally by providing cancer medications and support by their socio-economic status by providing financial donation.

REFERENCES

1. Ames, S. C., Tan, W. W., Ames, G. E., Stone, R. L., Rizzo, T. D., Jr., Heckman, M. G., Werch, C. E., Quality of life of men with biochemical recurrence of prostate cancer. Journal of Psychosocial Oncology, 2008; 26: 17-34.
2. Amy Y. Zhang. Is a behavioral treatment for urinary incontinence beneficial to prostate cancer survivors as a follow-up care?. J Cancer Surviv, 2017; 11(1): 24–31.
3. Arrington M. I. Prostate, Bowling A. *Measuring Disease A Review Of Disease-Specific Quality Of Life Measurement Scales*, 2nd ed. Philadelphia USA: Open University Press, 2001; 16.
4. Cancer and the Social Construction of Masculine Sexual Identity. *International Journal of Men's Health*, 2008; 7(3): 299-306.
5. Clark J. A., Talcott J. A. Confidence and Uncertainty Long After Initial Treatment for Early Prostate Cancer: Survivors' Views of Cancer Control and the Treatment Decisions They Made. *Journal Of Clinical Oncology*, 2006; 24(24): 4457-4463.
6. Cyllene R. et al. *Cancer Causes and Control*, 10 ed. Netherlands: Kluwer Academic Publishers, 1999; 506.
7. Eton, D. T., & Lepore, S. J., Prostate cancer and health-related quality of life: A review of the literature. Psycho-Oncology, 2002; 11: 307-326. doi: 10.1002/pon.572.
8. Jack A, et al. Patients' Perceptions of Quality of Life After Treatment for Early Prostate Cancer. *Journal of Clinical Oncology*, 2003; 21(20): 3777-3784
9. Jack A. Clark, Ph.D., Department of Health Policy and Management, Boston University School of Public Health, Boston, Massachusetts", Final revised: 29 April 2010.
10. Joseph K. J., et al. Analysis of health related quality of life (HRQoL) of patients with clinically localized prostate cancer, one year after treatment with external beam radiotherapy (EBRT) alone versus EBRT and high dose rate brachytherapy (HDRBT). *BioMed Central*, 2008; 3(20): 1-5.
11. Love AW. at al. Psychosocial adjustment in newly diagnosed prostate cancer, Australian & New Zealand journal of psychiatry, 2008; 26(2): 423-429.
12. Newth GE. The Quality of Life of Men with Advanced Prostate Cancer Treated With Androgen Deprivation Therapy and Their Partners, United States, University of Michigan, nursing, 2012; 41-43.
13. Penson D.F. et al. General quality of life 2 years following treatment for prostate cancer: what influences outcomes? Results from the prostate cancer outcomes study. *J ClinOncol*, 2007; 21(6): 1147–1154.

14. Schneider, M. Social Indicators Research, 1975; 1: 495. doi:10.1007/BF00353066.
15. Waldmann A., et al. Measuring prostate-specific quality of life in prostate cancer patients scheduled for radiotherapy or radical prostatectomy and reference men in Germany and Canada using the Patient Oriented Prostate Utility Scale-Psychometric (PORPUS-P).*BMC Cancer*, 2009; 9(295): 4-11.
16. Walmsley LA , et al, The Psychological Well-Being of Men Diagnosed with Prostate Cancer, UK, University of Kentucky, college of nursing, 2015; 1-3.
17. Zaider T., et al. Loss of Masculine Identity, Marital Affection, and Sexual Bother in Men with Localized Prostate Cancer. *J Sex Med.*, 2012; 9(10): 2724–2732.