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Original Article

Quality of life in prostate cancer survivors in developing countries: The case of the Gaza Strip, Palestine

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ABSTRACT

Background & Aim: Prostate cancer is one of the most common cancers in males and the second leading cause of cancer-related deaths in Palestine. Although, many studies were conducted in developed countries to evaluate quality of life (QOL) in survivors of prostate cancer, the researchers could not find any study that was conducted in a developing country including Palestine. Therefore, the purpose of this study was to evaluate the QOL of prostate cancer survivors residing in Gaza Strip, Palestine, as an example of a developing country, and compare it with the literature.

Methods & Materials: A total of a 121 men who were diagnosed with prostate cancer and live in Gaza Strip participated in this cross-sectional study. The University of California at Los Angeles Prostate-Specific Index including the RAND 36-Item Health Survey v2 was used to assess QOL of participants.

Results: Age of participants' ranged between 52 and 89 years with a mean of 71.80 (SD 7.66). The greatest majority of participants (n = 94, 77.67%) were diagnosed with prostate cancer after the age of 60. The mean scores for the entire general QOL items was 47.93 (SD = 22.46) and the mean for all Prostate Cancer Index - University of California items was 44.20 (SD = 16.16).

Conclusion: Prostate cancer survivors living in Gaza Strip, Palestine have lower level of QOL than their counterparts who live in developed courtiers. These differences could be related to early screening and advanced technology used to treat prostate cancer in developed countries. Health care providers and health care policy makers need to improve provided health care services and introduce screening method to diagnose prostate cancer early. Further studies are recommended to compare QOL of prostate cancer survivors living in developing countries and developed countries.

Introduction

Because of advanced medical technology that we have today, people can live longer than ever before. The chances of developing chronic diseases, such as cancer, have also increased. It was estimated that over 12 million new cases of cancer was diagnosed worldwide in 2007. Approximately, half of these were in economically developed countries. About 6.7 million of these cases resulted in death. Approximately, two-thirds of those were patients residing in developing countries (1).

Worldwide, one of the most commonly diagnosed cancers in men is prostate cancer. It is the second most common type of cancer diagnosed among men and it is the sixth leading cause of cancer-related deaths in men worldwide. In developed countries, prostate cancer is ranked as the most commonly diagnosed cancer in men; being the second cause of cancer-related deaths. In developing countries, it is ranked as the sixth most commonly diagnosed cancer in men; being the sixth most common cause of death among men (1).

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In 2005, prostate cancer was the second most commonly diagnosed type of cancer among Palestinian males (Figure 1). It accounted for 11.3% of total new cancer cases among Palestinian males. In the same year, prostate cancer was reported as the second leading cause of cancer-related deaths (9.5%) among Palestinian males (2). The majority of new prostate cancer cases diagnosed between 1995 and 2000 (78.3%) were diagnosed after the age of 60. The peak incidence of occurrence (25.5%) was between the ages of 65 and 69 (3).

The variation of the number of deaths related to cancer between developed and developing (or underdeveloped) countries can be related to screening strategies and advanced medical technology in the developed countries. Digital rectal examination (DRE) and prostate-specific antigen (PSA) screening are routinely used for early detection of prostate cancer in many developed countries. In addition, there are several other advanced diagnostic technologies available, which may help in the early diagnosis of prostate cancer. Examples of these diagnostic techniques include transrectal ultrasound and advanced techniques for prostate biopsy (4). Lack of advanced diagnostic techniques in underdeveloped countries can lead to many cases going undiagnosed. According to the American Cancer Society (5), some autopsy studies revealed that many men who died from other diseases were found to also have prostate cancer. This cancer though had never caused a problem for them while they were alive.

In spite of prostate cancer being one of the most common types of cancers among males, survival rates have improved in recent years. Between 1996 and 2002, the 5-year relative survival rate (the chance to live 5 years after the diagnosis with prostate cancer) for men diagnosed in the United States, improved to 99.9% for all stages of prostate cancer and 100% if it remained localized (6, 7).

Prostate cancer can be treated by different modalities such as prostatectomy, radiation therapy, or watchful waiting. Depending on the case, chemotherapy or hormonal therapy can be added to the treatment regimen (4, 6). The use of each treatment option has its own side effects and complications. Each of them can have several long-lasting complications that could negatively affect the QOL for prostate cancer survivors (8). However, due to advanced medical technology in the treatment and early diagnosis of prostate cancer, larger numbers of patients are surviving. They are living with less pain, physical limitations, and treatment-related complications. They may remain free from cancer for the rest of their lives.

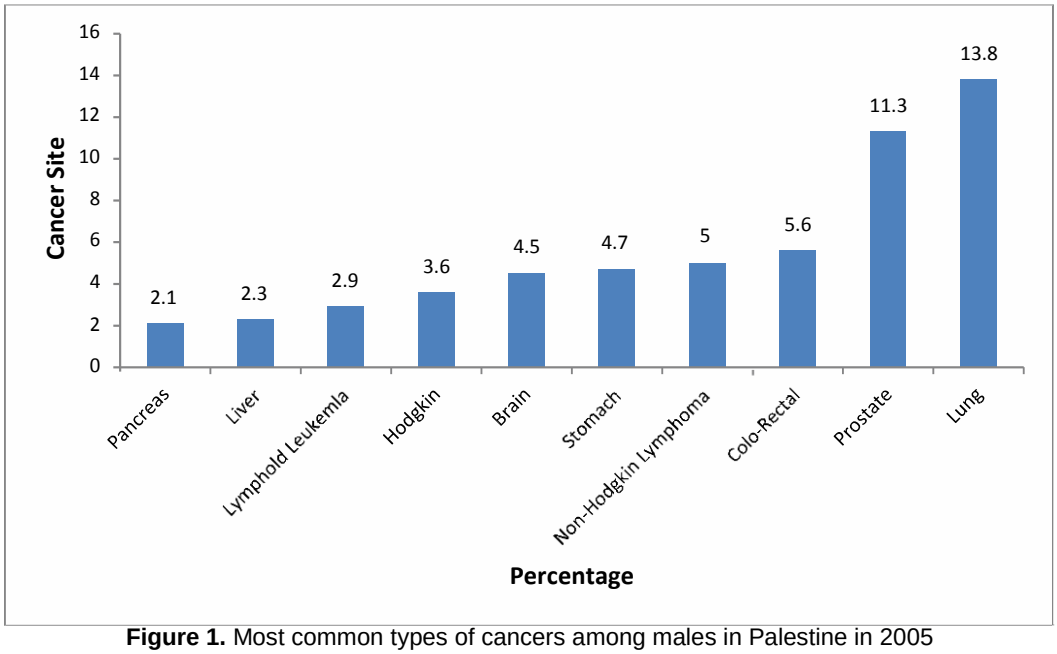

Figure 1. Most common types of cancers among males in Palestine in 2005

On the other hand, men diagnosed with prostate cancer and residing in a developing country are lacking the advantage of having such advanced medical technology (1). Therefore, prostate cancer may not be diagnosed in the early stages. It may be diagnosed at a later more advanced stage. Later diagnoses require more aggressive and extensive treatments, as well as, the addition of other treatment options, such as chemotherapy and/or hormonal therapy. Late diagnoses and the use of hormonal and/or chemotherapy increase the number of complications. This can negatively impact the patients' QOL. Therefore, it is expected that men who are diagnosed with prostate cancer and reside in developing countries, including the Gaza Strip, will have lower levels of QOL, as compared to those who live in more developed countries. Despite the relatively large number of studies examining the QOL of prostate cancer survivors, little is known about their QOL specific to developing countries. None is known about the QOL of Palestinian prostate cancer survivors. Therefore, the purpose of this study was to evaluate the QOL of prostate cancer survivors residing in a developing (underdeveloped) country (Gaza Strip, Palestine). For the purpose of this study, QOL is defined as "a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/her" (9).

Methods

The design for this study was a cross-sectional and descriptive design.

All patients diagnosed with prostate cancer, regardless of its stage or method of treatment, and live in Gaza Strip were targeted to participate in this study. Potential candidates were approached at one of the two available medical centers where they receive their treatment. After explaining the purpose of the study, participants were invited to sign a consent paper to participate in the study. Due to the high illiteracy rate among this group of patients, participants were interviewed privately to fill the questionnaire items between August and November, 2009.

The researchers used the University of California Prostate Cancer Index (UCLA-PCI), including the RAND 36-Item Health Survey v2 (SF-36 v2) to assess health-related QOL (HR-QOL) in this study. The UCLA Index includes items for assessing the general HR-QOL. It also includes pertinent items specific for assessing HR-QOL related to prostate cancer. The instrument includes three parts: (a) the RAND 36-Item Health Survey v2 (SF-36 v2), (b) the UCLA-PCI, and (c) the socio-demographic data (10).

The SF-36 v2 consists of 36 items that assess eight health domains considered to represent the most frequently used concepts in relevant health surveys. This also includes those affected by several diseases and treatment (11). These domains include the following areas: physical functioning, role physical (role limitation due to physical health problems), bodily pain, general health, vitality (energy/fatigue), social functioning, role emotional (role limitation due to emotional problems), and mental health (psychological distress and psychological well-being). It also includes one item in which the patient makes a statement about the evaluation of their health status (11). The scores recorded for each scale range from 0 to 100, with the higher scores referring to a better level of QOL.

The UCLA-PCI contains 20 items that cover six sub-domains that are specific to prostate cancer. These domains are urinary function and bother, bowel function and bother, and sexual function and bother (12). The UCLA-PCI and the SF-36 have been proven to be both valid and reliable (12-17).

These instruments were translated into the Arabic language by the researchers. Some expressions were modified due to cultural differences. Words used to measure distance such as miles, yards, blocks were replaced by words using the metric system. Words like playing golf and bowling were translated to activities such as gardening and sport activities to refer to moderate activities. After translating the instrument into the Arabic language, it was then back translated into English by a third bilingual nurse. Back-translation is a standard procedure for translating a research questionnaire from English to other languages (18).

Prior to using the instrument in this study, the content validity and reliability of the translated

instrument was examined. The instrument was reviewed by five expert nurses. They were asked to rank each item on a four point scale with 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = highly relevant. Their responses were dichotomized into two variables: relevant and not relevant. Then the Item Content Validity Index (I-CVI) of these ratings was calculated by figuring out the proportion of items that were rated as relevant by all five experts. The result showed that the I-CVI of each item was 100% and were considered relevant according to Polit and Beck (19). The Arabic version of the instrument was found to be reliable with a Cronbach's alpha of 0.83.

After translating the instrument, 10 patients were randomly selected from the sample frame and were interviewed by the researchers to evaluate the clarity of the Arabic version of the questionnaire and to determine whether it was friendly and easy to understand. The pilot study also investigated the following: (1) how long it takes to complete the questionnaire; (2) whether participants felt they had enough opportunity to share their views; (3) suggestions for changes; (4) other comments.

Participants in the pilot study reported that the instrument was friendly to use and that the items were easily understood. Only one suggestion was addressed about the wording of questions. That was about another Arabic expression to the English Expression "sexual intercourse" to help less educated people to more understand what meant by this item. Other than that, participants in the pilot study did not suggest any changes in the wording of the instrument. The suggestion was taken into consideration and was added into bracket. Finally, the average time to answer the questionnaire was between 25 and 40 min.

The Statistical Package for Social Science (SPSS) was used to analyze and compute the data. Before analyzing the data, results reported by participants (Likert's scale) were converted (according to a formula that accompanies the instrument into scores that ranged between 0 and 100). Basic descriptive statistical procedures including mean, range, standard deviation, and percentage were used to analyze the results. In order to determine if the differences between the results of this study and the results reported in the literature were statistically significant or not, *t*-test was used. The following formula was used to calculate the *t* value (20):

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Results

The target population for this study was all patients diagnosed with prostate cancer, regardless of its stage or method of treatment, and living in the Gaza Strip. A total of 121 out of 124 of all recruited patients agreed to participate in the study with a final response rate of 97.98%.

Table 1 includes a summary of the socio-demographic statistics of the participants. Age of participants' ranged between 52 and 89 years with a mean of 71.80 (SD 7.66). The majority of participants (n = 79, 65.29%) were ≥70 years old. The greatest majority of participants (n = 94, 77.67%) were diagnosed with prostate cancer after the age of 60. About one-third of participants did not attend school (n = 41, 33.88%) and a small number of them (n = 12, 9.92%) finished their higher education. The majority of participants (n = 92, 76.03%) were married and living with their wives. The rest were either divorced or widowed. A relatively small number of participants (14, 11.57%) were diagnosed with another type of cancer in addition to cancer of the prostate.

Participants had previously received several types and combinations of therapy for their cancer. The most common type of mono-therapy was hormonal therapy (n = 56, 46.28%). Fifteen participants (12.4%) reported that they were treated by prostatectomy alone. Other participants reported receiving a combination of two or more types of treatment modalities.

The UCLA-PCI was used to assess QOL of participants. UCLA-PCI divides the QOL into two categories. The first category covers nine sub-domains (Table 2). It measures general QOL (SF-36) issues. The second category (Table 3) includes six sub-domains and measures Prostate-Specific QOL (PCI-QOL). After converting the

Table 1. Socio-demographic characteristics of prostate cancer survivors residing in Gaza Strip

Characteristics	N	%
Age		
Mean by years	71.80	
Standard deviation	7.66	
Age by category (years)		
< 60	5	4.13
60–64	17	14.05
65–69	20	16.53
70–74	34	28.10
> 75	45	37.19
Level of education		
No school	41	33.88
Some education below primary school	23	19.01
Finished primary school	11	9.09
Finished secondary school	11	9.09
Finished high school	23	19.01
Higher education	12	9.92
Relationship status		
Live with wife	92	76.03
Divorced or widowed	29	23.97
Types of treatment received		
Prostatectomy	15	12.40
Hormonal therapy	56	46.28
Prostatectomy and hormonal therapy	21	17.36
Hormonal and chemotherapy	11	9.09
Prostatectomy and chemotherapy	6	4.96
Hormonal therapy and radiation therapy	5	4.13
Other combination therapies	7	5.78

participants' responses into scores, the mean of each sub-domain was calculated. The mean for all items of the SF-36 and the PCI were also calculated. Scores of the general QOL (SF-36 QOL) items ranged (Table 2) between 33.97 (role limitation: emotional) and 68.23 (bodily pain). The mean scores for the entire general QOL items was 47.93 (SD = 22.46). On the other hand, scores of PCI-QOL (Table 3) ranged between 10.02 (sexual function) and 89.74 (bowel bother). The mean for all PCI-QOL items was 44.20 (SD = 16.16).

Discussion

Many studies were conducted to evaluate the QOL of males diagnosed with prostate cancer. Several instruments were used to assess QOL of prostate cancer survivors. In order to compare the results of this study with the literature, additional studies that used the UCLA-PCI instrument were reviewed and the reported scores were summarized in Table 4.

In comparing the scores of SF-36 QOL reported in the literature, with the scores reported by participants of this study (Table 4); it will be noticed that the scores reported by participants of this study were lesser than those reported in the literature with one exception. Participants of Ishihara's et al. (23) study reported a slightly lower score (56) for the general health subdomain compared to the score reported by participants of this study (59.19).

Similarly, it can be noted that all of the scores reported in this study relate to urinary function and urinary bother of the UCLA-PCI subdomains. These are less than those reported in the literature. Most of the results related to sexual function and sexual bother are less than those reported in the literature with a few exceptions. There is one exception in the sexual function

Table 2. Scores of general QOL (SF-36) and their sub-domains

	Number of items	Mean	SD
SF-36			
Physical function	10	45.09	30.13
Role limitation – physical	4	35.26	34.95
Role limitation – emotional	3	33.97	34.27
Vitality	4	46.84	25.37
Mental health	5	55.56	20.03
Social functioning	2	59.66	31.93
Bodily pain	2	68.23	31.14
General health	6	59.19	34.83
Health transition	1	50.34	27.18
General QOL (SF-36)		47.93	22.46

QOL: Quality of life

sub-domain of Inoue, et al. study (32) and five exceptions in the sexual bother sub-domains in the following studies: Litwin et al. (14), Jayadevappa et al. (24), Arredondo et al. (25), Karakiewicz, et al. (29), and Berge, et al. (33) The scores related to bowel function and bowel bother fall within the range of the scores reported in the literature. These similar results may relate to the small number of participants of this study who were treated with radiation therapy. As radiation therapy causes most of the complications related to bowel function and bowel bother.

In spite of the noticed variances among reported scores and literature; it cannot be inferred that these variances are real and statistically significant. Differences among scores may be simply due to chance or sample fluctuation. In order to examine that the differences were not due to chance or sampling errors, a *t*-test was calculated for all studies using the formula mention in the methodology.

Results of calculated *t*-tests are presented in Table 5. As all the studies had more than 120 participants with the exception of two studies [Jayadevappa et al. (24), n = 115 and Berge, et al. (33), n = 61], the critical value of 1.98 at an alpha of 0.05 was used to infer the significance of the differences between scores reported in this study and those reported in the reviewed studies.

While reviewing Table 5, it is apparent that the SF-36 QOL scores of this study were lesser than those reported by other studies. Furthermore, the *t*-test values exceeded the critical value of 1.98 which reflects the differences as being statistically significant. When examining the results of the *t*-test of the PCI sub-domains, those indicating urinary function, urinary bother, sexual function and sexual bother, also exceeded the critical value of 1.98 denoting the statistical significance of these differences. This comparison reveals that prostate cancer survivors residing in the Gaza Strip were not experiencing the same level of QOL as their counterparts in more developed countries. This was shown by lower scores of SF-36 and UCLA-PCI sub-domains, with the exception, of those related to bowel function and bowel bother.

The low scores reported in this study compared with those reported in the literature could be related to the fact that this study was conducted in a developing country. Those reviewed in the literature were conducted in more developed countries including, the USA, Canada, Germany, Italy, The Netherlands, Australia, and Japan. Developed countries have more facilities for early diagnosis than the developing countries. They also have more advanced medical technology and more experienced physicians. Advanced medical technology and the use of advanced screening techniques such as, DRE and PSA, and other tests, can help to diagnose asymptomatic patients. They also help to diagnose prostate cancer at the earlier stages of its occurrence (35-38). In fact, the majority of newly diagnosed cases of prostate cancer (about 57%) are discovered while the tumor is still localized (39). This of course improves the prognosis, survival rate, and QOL of these patients, especially with the advance of the better treatment modalities now available in these countries.

Therefore, it can be expected that patients living in developed countries will have higher scores of QOL than those living in the Gaza Strip, Palestine as an example of still developing countries. In order to further examine this hypothesis, the researchers recommend further studies to be conducted in developing countries to assess the QOL of prostate cancer survivors. The researchers also recommend the need to conduct a comparative study that includes participants from both a developed and a developing country. This would be a study that compares the QOL of prostate cancer survivors in these countries.

Table 3. Scores of UCLA-PCI and their sub-domains

	Number of items	Mean	SD
PCI			
Urinary function	5	57.08	32.12
Urinary bother	1	39.74	37.31
Bowel function	4	84.96	16.63
Bowel bother	1	89.74	20.54
Sexual function	8	10.02	28.42
Sexual bother	1	49.15	20.54
Total score of PCI		44.20	16.16

UCLA-PCI: University of California Prostate Cancer Index

Table 4. A comparison between the result of this study and the results of other studies that used the UCLA-PCI

	This study	**Litwin, et al. (14)**	**Korfage, et al. (21)**	**Gacci, et al. (22)**	**Ishihara, et al. (23)**	**Jayadevappa et al. (24)**	**Arredondo et al. (25)**	**Namiki, et al. (26)**	**This study**	**Shikanov et al. (27)**	**Wakatsuki et al. (28)**	**Karakiewicz, et al. (29)**	**Krahn, et al. (30)**	**Wootten, et al. (31)**	**Inoue, et al. (32)**	**Berge, et al. (33)**	**Smith, et al. (34)**
Country	Gaza	USA	Netherlands	Italy	Japan	USA	USA	Japan	Gaza	USA	Japan	Canada	Canada	Australia	Japan	Norway	USA
Physical function	45.09	72.5		86.87	85.7	69.8	80.2		45.09			80.95					87
Role limitation – physical	35.26	61.3		72.73	71.4	69.8	67.6		35.26			70.67					78
Role limitation – emotional	33.97	71.2		55.30	70.1	95.2	80.2		33.97			77.52					86
Vitality	46.84	62.2		81.94	62	74.1	62.3		46.84			64.75					67
Mental health	55.56	76.7		72.63	64.2	85.4	77.2		55.56								81
Social functioning	59.66	80.0		80.18	79.5	92.9	81.9		59.66			82.13					90
Bodily pain	68.23	73.3		86.79	74.1	86.1	79.5		68.23			81.56					82
General health	59.19	67.0		66.36	56	73.5	71.1		59.19			71.31					76
Health transition	50.34			80.05			50.4		50.34								
Urinary function	57.08	83.8	85.0	75.18	84.2	77.1	69.9	81	57.08	72.0	82.5	70.86	90	79.44	71.8	79.7	75
Urinary bother	39.74	79.4	80.5	75.44	72.9	85.7	73.4	81	39.74	79.0	79.2	74.30		86.89	80.6	83.8	38
Bowel function	84.96	84.4	86.6	89.80	86	92.2	84.1	89	84.96		90.3		88		86.0	85.5	
Bowel bother	89.74	83.1	87.0	84.96	88.8	96.4	82.9	92	89.74		95.8				86.3	78.1	
Sexual function	10.02	38.5		17.89	32.5	21.7	25.6	15	10.02	45.2	38.9	21.47	38	25.73	7.3	32.1	26
Sexual bother	49.15	36.3		53.32	74.2	32.7	40.8	66	49.15	50.7	72.9	33.68		50.92	58.4	47.2	34

UCLA-PCI: University of California Prostate Cancer Index

Table 5. Results of *t*-tests comparing current study with other studies

	This study	**Gacci, et al. (22)**		**Jayadevappa et al. (24)**		**Arredondo et al. (25)**		**Namiki, et al., 2006**		**Shikanov et al. (27)**		**Wakatsuki et al. (28)**		**Inoue, et al. (32)**		**This study**	**Litwin, et al. (14)**		**Krahn, et al. (30)**		**Wootten, et al. (31)**		**Korfage, et al. (21)**		**Berge, et al. (33)**		**Karakiewicz, et al. (29)**	
Country	**Gaza**	**Italy**		**USA**		**USA**		**Japan**		**USA**		**Japan**		**Japan**		**Gaza**	**USA**		**Canada**		**Australia**		**Netherlands**		**Norway**		**Canada**	
	X	**X**	**t-test**	**X**	**t-test**	**X**	**t-test**	**X**	**t-test**	**X**	**t-test**	**X**	**t-test**	**X**	**t-test**	**X**	**X**	**t-test**	**X**	**t-test**	**X**	**t-test**	**X**	**t-test**	**X**	**t-test**	**X**	**t-test**
Physical function	45.09	86.87	14.97	67.7	3.36	80.2	12.31									45.09	72.5	9.2									80.95	12.85
Role limitation – physical	35.26	72.73	11.03	87.8	11.43	67.6	9.27									35.26	61.3	7.09									70.67	10.77
Role limitation – emotional	33.97	55.30	6.59	88.9	11.99	80.2	13.81									33.97	71.2	10.43									77.52	13.58
Vitality	46.84	81.94	14.5	70.6	8.51	62.3	6.40									46.84	62.2	6.14									64.75	7.65
Mental health	55.56	72.63	8.09	78.9	10.11	77.2	11.28									55.56	76.7	10.68										
Social functioning	59.66	80.18	7.74	92.6	10.36	81.9	7.35									59.66	80.0	6.57									82.13	7.64
Bodily pain	68.23	86.79	6.44	89.7	6.72	79.5	3.84									68.23	73.3	1.67									81.56	4.64
General health	59.19	66.36	2.11	74.1	2.65	71.1	3.69									59.19	67.0	2.33									71.31	3.78
Health transition	50.34	80.05	11.36			50.4	0.02									50.34												
Urinary function	57.08	75.18	5.62	92.4	7.63	69.9	4.18	81	7.55	72.0	4.97	82.5	7.73	71.8	4.21	57.08	83.8	8.68	90	10.99	79.44	6.37	85.0	8.87	79.7	6.84	70.86	4.64
Urinary bother	39.74	75.44	9.70	89.9	13.24	73.4	9.51	81	11.33	79.0	10.75	79.2	9.72	80.6	10.46	39.74	79.4	23.03			86.89	12.62	80.5	10.87	83.8	15.58	74.30	10.02
Bowel function	84.96	89.80	2.83	92.9	4.87	84.1	0.52	89	1.44			90.3	2.95	86.0	0.53	84.96	84.4	0.334	88	1.55			86.6	0.91	85.5	0.22		
Bowel bother	89.74	84.96	2.2	94.6	2.31	82.9	3.28	92	1.08			95.8	2.66	86.3	1.38	89.74	83.1	3.06					87.0	1.45	78.1	3.02		
Sexual function	49.15	17.89	11.10	42.1	2.06	25.6	8.57	15	12.13	45.2	1.36	38.9	3.29	7.3	15.43	49.15	38.5	3.68	38	3.83	25.73	7.15			32.1	4.24	21.47	10.54
Sexual bother	10.02	53.32	23.41	46.4	9,04	40.8	14.68	66	21.45	50.7	15.26	72.9	25.22	58.4	8.21	10.02	36.3	10.42			50.92	11.45			47.2	8.35	33.68	11.86

With the high incidence of prostate cancer, high survival rates, and with the several potential morbidities associated with the different treatment methods, more focus on QOL issues was observed in the relevant literature (22, 32, 33, 40). Secchi and Strepparava (41) added that QOL is now considered one of the most important parameters in evaluating clinical trials. Furthermore, the American Cancer Society (6) added that managing the consequences of cancer itself and treatment-related consequences become more important because patients live longer with the burdens of treatment consequences. Not understanding or not considering these issues can contribute to poorer recovery, higher level of stress, and disturbances in their QOL (42). Therefore, this group of patients deserves more attention from health policy decision-makers to improve the quality of their lives and improve the quality of provided health care services which might be reflected on their QOL. The researchers would recommend physicians discus with their patients the pros and cons of different treatment modalities and to set a plan to introduce a prostate cancer screening policy into the health care system.

One of the major limitations to this study was that the researchers could not find any study that were conducted in a developing country, including Palestine, to evaluate QOL of men diagnosed with prostate cancer. In spite this study was conducted in a developing country the results cannot be generalized to patients diagnosed with prostate cancer who live in other developing countries. Therefore, the researchers would recommend that further research to be conducted in other developing countries to measure QOL of prostate cancer survivors, preferably using a longitudinal design.

An issue of concern that might affect the results of this study is that Gaza Strip had been under siege since 2006. The siege could affect the QOL of people living in Gaza Strip in all aspects of their lives. Therefore, these low scores of QOL could be due to the impact of the siege. The researchers would highly recommend conducting a comparative study to compare QOL of prostate cancer survivors living in Gaza Strip and those who live on the other part of Palestine, West Bank, to examine if these results could be attributed to the impact of the siege or not.

Conclusion

Prostate cancer is one of the most common types of cancer. It is also one of the largest causes of cancer-related deaths among males in the world. Survival rates can however be very high; especially if the cancer is discovered in its early stages. Therefore, it is important to pay more attention to the QOL of survivors. Many studies have assessed the QOL of prostate cancer survivors. All these studies were conducted in developed countries yet none were found to be conducted in a developing country and none was conducted in Palestine. This study assesses the QOL of prostate cancer survivors in a developing country (Gaza Strip, Palestine). The results revealed that men residing in Gaza Strip had lower levels of a QOL than those living in developed countries. This difference can be related to the availability of advanced medical technology and the screening measures used in the early detection of prostate cancer. Diagnosing prostate cancer in its early stages will result in improved prognosis and survival rates as both can lead to improved QOL.

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