

Quality of Life after Radical Cystectomy for Patients with Bladder Cancer

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Abstract

Background: Radical cystectomy with subsequent urinary diversion is considered as a curative gold standard for localized muscle invasive and non-muscle invasive aggressive bladder cancer. Radical cystectomy may negatively impact urinary, bowel, and sexual function, as well as affect body image, which can decrease quality of life and lead to psychological problems. **Aim:** This study aimed to assess quality of life after radical cystectomy for patients with bladder cancer. **Research Design:** A descriptive exploratory research design was used to achieve the aim of this study. **Setting:** This study was conducted at the department of surgical oncology outpatient clinic in National Cancer Institute - Cairo University. **Sample:** A purposive sample consists of (50) adult patients, from who admitted in the previous mentioned setting at the time of data collection were recruited in this study. **Tools:** two tools were used in the current study (I) Patient's interview assessment questionnaire and (II) Patient's Functional Assessment of Cancer Therapy Bladder. **Results:** more than half of the studied patients had unsatisfactory level of knowledge regarding total knowledge; there was high statistically significant difference between total level of knowledge and total quality of life. The highest affected dimension with radical cystectomy was additional concerns (25.4±4.9). While the least affected dimension of quality of life was Physical dimension (10.8±2.2). **Conclusion:** this study concluded that more than half of the studied patients had unsatisfactory total level of knowledge regarding radical cystectomy. Less than one third of studied patient were had low total quality of life dimension regarding family/social wellbeing and functional wellbeing. There was significant positive correlation between total level of knowledge and total quality of life **Recommendations:** Designing an educational program for patients post radical cystectomy to increase patient knowledge and to improve their health-related quality of life.

Keywords: quality of life, radical cystectomy, bladder cancer.

Introduction:

Bladder cancer is a lethal disease which accounts for 3% of all cancer deaths and is the 10th most common cancer in the world, and its incidence is steadily rising worldwide, especially in developed nations. In Egypt, bladder cancer is the second most common malignancy among men and 30% of the cases are squamous cell carcinoma type (Bray, et al., 2018).

Bladder cancer is one of the most commonly diagnosed malignant pathologies worldwide with increased incidence, prevalence

and limited diagnostic tools for the early stages of bladder transitional carcinoma. Transitional cell carcinoma is the most frequent histopathological type of bladder cancer followed by squamous cell carcinoma, adenocarcinoma and small cell carcinoma (Cussenot, et al., 2020).

A risk factors for bladder cancer include male sex, white race, smoking, personal or family history of bladder cancer, pelvic radiation, environmental/occupational exposures, exposure to certain drugs, chronic infection or irritation of the urinary tract, and certain medical conditions including obesity and diabetes (De George, et al., 2017).

Radical cystectomy is most commonly performed for cancer that has invaded into the muscle of the bladder. In a radical cystectomy the bladder is removed along with surrounding lymph nodes (lymph node dissection) and other organs that contain cancer. In men, this could include the prostate and seminal vesicles. In women, this could include a portion of the vagina, uterus, Fallopian tubes, and ovaries (Wieder, 2018).

Various methods are used for urinary diversion (UD) after radical cystectomy (RC), including ileal conduits (IC), cutaneous continent urinary diversion, and orthotopic neobladder reconstruction. The type of UD after RC has a great impact on different aspects of QOL including physical, sexual, psychosocial, day life activities and distress related to body image. The concept of QOL differs significantly between cultures, countries, and races (Moeen, et al., 2018).

Complications of Radical cystectomy with the creation of a urinary diversion can be associated with several risks and complications due to the extent and complexity of the surgery. As with most major surgeries there is risk from anesthesia, also, risk of bleeding, blood clots, heart attack, stroke, and pneumonia or other respiratory problems. There is also a risk of infection involving the urinary tract, abdomen, and gastrointestinal tract. After the surgical incisions are closed there is a risk of infection at these sites (Lauridsen, et al., 2017).

Quality of life (QOL) has been defined as "contentment with everyday life: the degree of enjoyment and satisfaction experienced in everyday life" as opposed to financial or material well-being. Many other definitions are available, but each centers on the theme of satisfaction with everyday life as a whole (WHO, 2020).

Quality of life is now considered an important endpoint in cancer clinical trials. It has been shown that assessing quality of life in cancer patients could contribute to improved treatment and could even be as prognostic as

medical factors could be prognostic. Above all, studies of quality of life can further indicate directions needed for more efficient treatment of cancer patient (Huddart, et al., 2020).

Quality of life is a multi-dimensional concept that includes domains related to physical, mental, emotional, and social functioning. It goes beyond direct measures of population health, life expectancy, and causes of death, and focuses on the impact health status has on quality of life. A related concept of Health related quality of life (HRQoL) is well-being, which assesses the positive aspects of a person's life, such as positive emotions and life satisfaction. Clinicians and public health officials have used HRQoL and well-being to measure the effects of chronic illness, treatments, and short- and long-term disabilities. While there are several existing measures of HRQoL and well-being, methodological development in this area is still ongoing (Gardikiotis, et al., 2018).

Aim of the study:

The present study was conducted to fulfill the following aim:

Assess patient's (physical- social-family-emotional- functional) well-being dimension and additional concerns dimension.

Research Question:

What is the effect of Radical Cystectomy on quality of life for patient with bladder cancer?

Subjects and Methods:

I. Technical design:

The technical design included research design, setting, subjects and tools for data collection.

(A) Research design:

The current study was conducted through using a descriptive exploratory research design. Descriptive research design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way. Its common means of

obtaining information include the use of the questionnaire, personal interview schedule, and observation checklist (Shyama, 2020).

(B) Setting:

The study was conducted at the department of surgical oncology outpatient clinic in National Cancer Institute, Cairo University. The department of surgical oncology outpatient clinic is located in first floor and consists of large room has two desks and four chairs for the doctors, abdominal ultrasound machine, one stretcher to examine the patients and curtains around it. Beside the department of surgical oncology outpatient clinic, there are two clinics for other specialities and another room for stoma.

(C) -Subjects:

Based on retrospective statistical data, it was finding that the number of the patients with bladder cancer who admitted to the department of surgical oncology at National Cancer Institute - Cairo University at (2019) were 100 patients, a purposive sample consists of (50) adult patients, from whom admitted in the previous mentioned setting at the time of data collection were recruited in this study.

The sample size calculated by using power analysis:

Type I error with significant level (α) =0.5 with confidence level 95%

Type II error by power test (1-B) =90%

The total sample size according to this formula is (50) cases.

Inclusion Criteria:

- Adult patients from both genders, diagnosed with bladder cancer.
- Patients who have spent at least from 6 months of life after surgery

Exclusion criteria:

- Patients without other metastatic disease.
- Patients who did not receive any other adjuvant treatment (Radiotherapy or Chemotherapy).

(D)-Tools for data collection:

The data was collected through using the following tools:

1-Patient Interview Assessment Questionnaire (Appendix I):

It was developed by the researcher after reviewing related recent literature (Smeltzer, et al., 2018; Booker, 2015). It was used to assess patient level of knowledge regarding radical cystectomy. It included three parts:

Part (A): Patient's Socio-Demographic Characteristics

To assess patient' socio-demographic characteristics regarding patient' age, gender, level of education, job, marital status, smoking, income, treatment coast and exercise, It was written in simple Arabic language, and filled by the researcher.

Part (B): Health-Related Data:

To assess Patient's present and past history as (type of tumor that removed, stages of tumor before surgery, complication of surgery, artificial opening, deal with stoma, complaint from chronic diseases, allergy from food or medication) and family history with bladder cancer.

Part (C): Patient's knowledge Assessment:

To assess patient' knowledge regarding care of patients after radical cystectomy for patients with bladder cancer. It included types and causes of bladder cancer, complications of radical cystectomy, cystectomy care and follow-up investigations. It was included 11 multiple choice questions (MCQ), it was covered the following two sections:

Section 1: It was composed of five MCQs. It was concerned with assessment of patient' basic knowledge regarding bladder cancer (causes, symptoms, stages, complications and methods of diagnosis).

Section 2: It was composed of six MCQs. It was concerned with assessment of patient' knowledge regarding radical cystectomy. It included Caring of stoma, Complications

from radical cystectomy, Treatment after radical cystectomy to avoid complications, Size of ostomy pouch, Types of ostomy appliances, following up after radical cystectomy.

❖ Scoring system of total patient's knowledge:

The score for correct answer for each question took one grade and incorrect answer was zero. The total score of patient' knowledge assessment was 11 marks:

Total scores and patients were categorized according as following:

- $\geq 60\%$ was considered satisfactory level of knowledge.
- $< 60\%$ was considered unsatisfactory level of knowledge.

2- Functional Assessment of Cancer Therapy – Bladder (FACT-BI) (Appendix II):

It was adapted tool from (Degboe A., et al., 2019), to assess quality of life for radical cystectomy patients, it was composed of five dimensions as following: -

1- Physical dimension: - it included 5 items (lack of energy, nausea, physical condition, pain and time in bed)

❖ Scoring system of total physical dimension:

Each item scored as Likert Scale including very much, quite a bit, some-what, a little bit and Not at all, scored 4,3,2,1 and 0 respectively. Maximum score was 20 and minimum was 0, high score means low quality.

Summation score of each item and patients were categorized according as following:

- High quality of life if scored (>15)
- Moderate quality of life if scored (6 -15)
- Low quality of life if scored (0 - 5)

2- Social/family dimensions: it included 7 items (feeling close to friends, getting emotional support from family, getting emotional support from friends, my family accepted my illness, satisfied with family communication about my illness, feeling close to my partner, satisfied with my sex life)

❖ Scoring system of total Social/family dimension:

Each item scored as Likert Scale including very much, quite a bit, some-what, a little bit and Not at all, scored 4,3,2,1 and 0 respectively. Maximum score was 24 and minimum was 0, high score means high quality.

Summation score of each item and patients were categorized according as following:

- High quality of life if scored (>21)
- Moderate quality of life if scored (8 -21)
- Low quality of life if scored (0 - 7)

3- Emotional dimensions: it included 6 items (feeling a sad, cope with illness, losing hope in the fight against my illness, anxiety, fear of death, worry about my condition will get worse)

❖ Scoring system of total Emotional dimension: -

Each item scored as Likert Scale including very much, quite a bit, some-what, a little bit and Not at all, scored 4,3,2,1 and 0 respectively. Maximum score was 20 and minimum was 0, high score means low quality.

Summation score of each item and patients were categorized according as following:

- High quality of life if scored (>18)
- Moderate quality of life if scored (7 -18)
- Low quality of life if scored (0 - 6)

4- Functional dimensions: it included 7 items (able to working ability, my work is fulfilling, ability to move and enjoy, accepting illness, adequate sleep, enjoy the things I usually do for fun, satisfied with the quality of my life now)

❖ Scoring system of total Functional dimension:-

Each item scored as Likert Scale including very much, quite a bit, some-what, a little bit and Not at all, scored 4,3,2,1 and 0 respectively. Maximum score was 24 and minimum was 0, high score means high quality.

Summation score of each item and patients were categorized according as following:

- High quality of life if scored (>21)
- Moderate quality of life if scored (8 -21)
- Low quality of life if scored (0 - 7)

5- Additional concerns dimension: it included 7 items (bowel control, losing weight, appetite, have diarrhea, like the appearance of my body, embarrassed by my ostomy appliance, Caring for my ostomy appliance is difficult)

❖ **Scoring system of total Additional concerns dimension:** -

Each item scored as Likert Scale including very much, quite a bit, some-what, a little bit and Not at all, scored 4,3,2,1 and 0 respectively. Maximum score was 40 and minimum was 0.

Summation score of each item and patients were categorized according as following:

- High quality of life if scored (> 30)
- Moderate quality of life if scored (11-30)
- Low quality of life if scored (0 - 10)

❖ **Scoring system of total quality of life:-**

The maximum scores were (140) and the minimum was (0), high scores means high quality. The patient was categorized according the following:

- High quality of life if scored (106-140)
- Moderate quality of life if scored (36 - 105)
- Low quality of life if scored (0 - 35)

II. Operational design:

It included preparatory phase, tool validity, reliability, pilot study and field work.

A- The Preparatory Phase:

It included reviewing of current and past, national and international related literature and theoretical knowledge of various aspects of the study using books, articles, periodicals, magazines and internet to develop tools for data collection.

B- Tools Validity and Reliability:

Testing validity referred to how well as a scientific test actually measures what it is intended to measure of the proposed tools by using face and content validity.

Face validity aimed to inspect the items to determine whether the tools measure what supposed to measure.

Content validity was conducted to determine whether the content of the tools cover the aim of the study. It ascertained by a jury of 5 expertise from different academic categories (three professors and one assistant professors) of Medical Surgical Nursing department at Faculty of Nursing at Ain Shams University and one from critical nursing department at Faculty of Nursing at Cairo University. The expertise reviewed the tools for objectivity, comprehensiveness, clarity, relevance, simplicity and applicability of tools; minor modification was done. Finally, the final form was developed.

Testing reliability of the proposed tools was done statistically by Cronbach alpha test for the total items. It was used to examine whether the questionnaire had internal consistency.

• Pilot Study:

Before performing the actual study, a pilot study was carried out on (10%) of patients from the study subjects to test clarity, applicability, feasibility, and relevance of the tools used to determine the needed time for the applications of the study tools. The necessary modifications on tools were done according to the result of the pilot study. The patients who were included in the pilot study excluded from the main study group.

• Field of work:

The aim of this stage was to assess quality of life after radical cystectomy for patients with bladder cancer through collecting the data using the study tools after confirming its validity and reliability and explaining the purpose of the study simply to the patients. 50 patients with the previous mentioned criteria were included in the study.

Data collection took about 6 months started from August 2021 until January 2022; purpose of the data collection was simply explained to the patients who agree to participate in the study prior to any data collection. The researcher through 2 days /week (Saturday, Tuesday) collected the data, during morning shift from the department of surgical

oncology outpatient clinics in National Cancer Institute - Cairo University, the content was written in simple Arabic language and consistent with the related literature met patient's level of understanding. Each patient was interviewed individually by the researcher for about 45-60 minutes; First socio-demographic and clinical data sheet were collected from the patient's medical records and from the patients themselves and sometimes from the patient's relatives it took about 10-15 minutes, then the interview questionnaire sheet filled by the researcher from the patients for collecting data regarding patients' knowledge and it took about 20-30 minutes, lastly quality of life sheet filled by the researcher from the patients it took about 15-20 minutes.

III Administrative design:

Official permission was from Faculty of Nursing Ain Shams University to the director of the national cancer Institute-Cairo University to conduct the study and requesting the permission for data collection from the studied sample.

Ethical considerations:

Approval to carry out this study was obtained from the Scientific Ethics Research Committee in the Faculty of Nursing at Ain Shams University before starting the study. The researcher clarified the objective and the aim of the study to the patients included in the research study. The researcher assured maintaining anonymity and confidentiality of the subjects' data. Patients were informed that they were allowed to choose either to participate or not in the study and that they have the right to withdraw from the study at any time without given any reason. The researcher clarified that all information would be used only for scientific research assuring to respect their ethics, values, beliefs and culture.

IV. Statistical design:

The data were collected, tabulated and subjected to statistical analysis. Statistical analysis was performed by the computer Statistical Package for Social Science (SPSS Version 20) was used for data handling and graphical presentation. Quantitative variables

were described by mean, Stander Deviation (SD), while qualitative categorical variables were described by proportions and percentages. **Chi-squared test** of independence was used for categorical variables; **linear correlation coefficient (r)** was used for detection of correlation between two quantitative variables in one group. Probability (p-value) was used and regarding significance, the observed difference and association were considered as following:

Non-significant (NS)	P-value > 0.05
Significant (S)	P-value ≤ 0.05
Highly significant (HS)	P-value ≤ 0.001

Results:

Table (1A): shows the Frequency and Percentage Distribution of socio-demographic Characteristics of the Studied Patients in the study. The mean mean age of the studied patients were 42.7±5.62 and 50% of them their age above 50 years Also, 70% of them were males; furthermore, 84% of them were married status. Regarding to level of education, 56% of them were illiterate, while 70% of them were not worked.

Regarding to socio-demographic characteristics of studied patients, **table (1B)** showed that, 90% of them were not had enough monthly income, so 82% of them treatment by decision on the expense of the state. The table also showed that 70% of them were lived in village, 60% of them were smoking.

Table (2): Regarding to level of knowledge of studied patient, revealed that, 50% & 48% of studied patients were had satisfactory level of knowledge regarding complications from radical cystectomy and types of ostomy appliances respectively. While, 62% & 58% of them were had unsatisfactory level of knowledge regarding caring of stoma and following up after radical cystectomy respectively.

Table (3): summarized the mean scores of quality of life dimensions. It showed that the total score of mean of quality of life was 91.7±13.1. In which the highest affected

dimension with radical cystectomy was additional concerns (25.4±4.9). While the least affected dimension of quality of life the studied patients was physical dimension (10.8±2.2).

Table (4): showed that, there was high statistically significant difference between total level of knowledge and total quality of life (p-value <0.001**).

Table (1A): Frequency and Percentage Distribution of Socio_ demographic Characteristics of the Studied Patients (n. =50).

Items	No	%
Age:		
20- 35	8	16
35-50	17	34
> 50	25	50
Mean ±SD		42.7±5.62
Gender:		
Male	35	70
Female	15	30
Marital status:		
Married	42	84
Unmarried	8	16
Level of education:		
Illiterate	28	56
Basic	11	22
Secondary	8	16
High education	3	6
Work:		
Not working	35	70
physical effort	6	12
mental effort	4	8
physical and mental effort	5	10

Table (1B): Frequency and Percentage Distribution of Socio_ demographic Characteristics of the Studied Patients (n. =50).

Items	No	%
Monthly income:		
Enough	5	10
Not enough	45	90
Treatment decision:		
Expense of the state	41	82
Own expense	9	18
Place of residence:		
Village	35	70
City	15	30
Smoking:		
Yes	30	60
No	20	40
Regular Exercise:		
Yes	5	10
No	45	90

Table (2): Frequency and Percentage Distributions of Studied Patients' Level of Knowledge Regarding Radical cystectomy (n. =50).

Level of knowledge	satisfactory		Un satisfactory	
	No	%	No	%
Types of ostomy appliances	24	48	26	52
Size of ostomy pouch	22	44	28	56
following up after radical cystectomy	21	42	29	58
Caring of stoma	19	38	31	62
Complications from radical cystectomy	25	50	25	50
Treatment after radical cystectomy to avoid complications	23	46	27	54

Table (3): Total quality of life dimensions among the studied patients (n. =50).

Levels of quality of life	High		Moderate		Low		Mean±SD
	No	%	No	%	No	%	
Physical dimension	24	48	15	30	11	22	10.8±2.2
Family/ Social dimension	22	44	13	26	15	30	14.8±4.9
Emotional dimension	20	40	17	34	13	26	14.3±2.3
Functional dimension	16	32	19	38	15	30	16.2±3.0
Additional concerns	27	54	13	26	10	20	25.4±4.9
Total level of quality of life	22	44	15	30	13	26	91.7±13.1

Table (4): Correlation between Patient's Total level of knowledge and Total quality of life dimensions.

Levels of quality of life	Total level of knowledge	
	r	P-value
Physical dimension	0.632	<0.001**
Family/Social dimension	0.927	<0.001**
Emotional dimension	0.593	<0.001**
functional dimension	0.737	<0.001**
Additional concerns	0.817	<0.001**
Total quality of life	0.854	<0.001**

Discussion:

Regarding patients' socio-demographic characteristics, the results of the present study revealed that half of studied patients' ages were more than fifty years old with mean age 42.7 ± 5.62 . This finding is supported with the study done by **Grimm, et al. (2019)** entitled "Health-related quality of life after radical cystectomy and ileal orthotopic neobladder: effect of detailed continence outcomes" which mentioned that the majority of studied patients' ages were near to sixty six years old with mean patient age (65.3 ± 9.3).

In relation to the gender, the current study result found that less than three quarter of studied patients were male. This finding consists with the study done by **Cerruto, et al. (2018)** entitled "Health-Related Quality of Life after RadicalCystectomy for Bladder Cancer in

Elderly Patients with Ileal Orthotopic Neobladder or Ileal Conduit" which showed that three quarter of studied samples were male.

Regarding to the marital status, at the present study result found that the majority of studied patients were married. This result may be due to the disease mostly affecting older patients and majority of them were married. This finding is consistent with study done by **Rammant, et al. (2022)** entitled "Associations of self-efficacy, social support and coping strategies with health-related quality of life after radical cystectomy for bladder cancer" who found that the majority of the studied samples were married.

As regards educational level, the current result showed that, more than half of studied patients were illiterate. Researcher's point of view, this may be related to the majority of

studied patients were living in village and old aging where so they had low level of education in this age stage. This finding is consistent with study done in the same culture at Al Hussein and Bab El Sharia Al-Azhar University Hospitals by **Mahmoud, et al., (2019)** entitled "Quality of Life after Different Types of Ileal Diversions Following Radical Cystectomy" who found that three quarter of the studied sample was not educated.

On the other hand, this finding is in disagreement with the study done by **Cathrine, et al. (2020)** entitled "Health-related quality-of-life after radical cystectomy among Norwegian men and women compared to the general population" who revealed that the majority of the studied sample was educated.

Concerning to the work, the current result of present study revealed that less than three quarter of studied patients were not working. This result may be attributed to that, about half of patients'age were more than fifty years and in a retirement age and their health condition forced them to stop working. This finding is consistent with study done by **Rammant, et al. (2022)** entitled "Associations of self-efficacy, social support and coping strategies with health-related quality of life after radical cystectomy for bladder cancer" who found that the majority of the studied samples were not working and in a retirement age.

In relation to the patient's income, the present study discovered that almost all of studied patients did not have enough monthly income for cover cost of treatment. In spite of, the majority of them were treated at the expense of the state. This finding is disagreement with the study done by **Jung, et al. (2020)** entitled "Health-related quality of life among non-muscle-invasive bladder cancer survivors: a population-based study" who found that one third of studied sample did not have enough annual income.

According to the place of residence, the result of the current study indicates that, less than three quarter of studied patients' residence in rural area where bladder cancer is most prevalent.

Regarding to personal habits, the current study result revealed that more than half of studied patients were smoking. This finding is consistent with the study done by **Volz, et al. (2021)** entitled "Radical cystectomy for locally advanced urothelial carcinoma of the urinary bladder: Health-related quality of life, oncological outcomes and predictors for survival" who found that the half of the studied sample was smokers.

Finally, the present study result discovered that most of studied patients were not participating sports activities. This may be due to half of studied patients' ages were more than fifty years old that their health status do not allow to participating sports activities.

Regarding to patients' satisfactory level of knowledge about radical cystectomy, the current study result revealed that between half of the studied patients had satisfactory knowledge regarding complications from radical cystectomy, also nearly less than half of the studied patients had satisfactory knowledge regarding types of ostomy appliances. This result may due to the National Cancer Institute had special outpatient clinic for ostomy caring and exchanging appliances. This finding is consistent with study done by **Bare, et al., (2017)** entitled "Implementation of an Evidence Based and Content Validated Standardized Ostomy Algorithm Tool in Home Care" who reported that limited knowledge in ostomy management and proper ostomy appliance can have an impact on patient outcomes.

On the other hand, the same table discovered that between half of the patients to about near two-third of them had unsatisfactory knowledge regarding size of ostomy pouch, caring of stoma and following up after radical cystectomy. The interpretation of this result from the researcher's point of view is that, although the National Cancer Institute provides information to radical cystectomy patients but, it is given in oral form not in written form, therefore, it is preferred to prepare this information in the illustrate booklet, especially the sample of the patient's study were educated.

This result is supported with study done by **Mohamed and Mohamed in Egypt (2014)**

entitled "Impact of self-care instructional program on urostomy patients" describes the impact of educational sessions on patients with urinary diversion, who found that significantly improved in the intervention group immediately after the intervention program.

Regarding to patients' total level of knowledge about radical cystectomy, the present study result mentioned that more than half of studied patients had unsatisfactory total level of knowledge regarding radical cystectomy. This may confirm the researcher's point of view that this category of studied patients needs for the illustrate booklet that consist of information to improve quality of life post radical cystectomy. This result is supported with study done by **Tal et al. (2015)** entitled "An ileal conduit- who takes care of the stoma?" support the idea of an early patient education, to improve self stomal-care after surgery. This will increase the chance of independence, improve health related quality of life and enhance necessary psychological adjustment to life after radical cystectomy.

In addition, this finding is in agreement with study done at the same setting by **Mohamed, S. A., & Fashafsheh, I. H., (2019)** entitled "Effect of educational intervention and telephone follow-up program on knowledge, practice and quality of life among patients with urinary diversion" showed that a significant variation between study group and control group regarding patient's urinary diversion knowledge and urostomy self-care after implementing educational intervention and follow up telephone.

Concerning to the total quality of life dimension, the present result illustrated that the highest level of quality of life for patient was regarding to additional concerns and physical well being dimension. this may be due to less than three quarter of studied patients were not suffer from chronic diseases, which increase the chance that they will not be exposed to health problems or complications that affect the physical dimension.

At the same context, the result discovered that the lowest level of quality of life was regarding social/family dimension and

functional dimension, this may be related to radical cystectomy may affect patients psychologically due to challenges such as prolonged recovery or long-lasting disability. In addition, feeling of guilt resulting from the impact of operation on their family and worry about loss of ability for urinate normally and disturbed in body image.

This finding is consistent with theory done by **Biggs, A., et al., (2017)**. entitled "Lazarus and Folkman's psychological stress and coping theory" who found that Patients with higher self-efficacy beliefs and perceived social support are more likely to engage in adaptive coping strategies, which, in turn, could lead to better health related quality of life outcomes compared to patients with lower self-efficacy beliefs, lower perceived social support and thus less engagement in adaptive coping strategies. Hence, self-efficacy, social support and coping strategies are important in the management of patients' health related quality of life.

At the same line, the study done by **Maydick-Youngberg, D. (2017)** showed that *more than half* of people with ostomy face emotional, psychological and financial challenges that affect the quality of life.

Last but not least, the current study result discovered that more than one quarter of them were had low quality of life post radical cystectomy. This finding may be related to less than three quarter of studied patients from village, half of them old age and illiterate. In addition to more than one quarter of studied patients have chronic illness and majority of them were not had enough income to cover cost of living or treatment. This finding is supported with the study done by **Yu, E. et al., (2019)** entitled "Health related quality of life around the time of diagnosis in patients with bladder cancer" patients with bladder cancer who had more comorbid conditions were much more likely to report poor health related quality of life.

Regarding correlation between patients' total level of knowledge and total patients quality of life, the present study revealed that,

there was high statistically significant difference between total level of knowledge and total quality of life. This finding may related to the national cancer institute (setting of sample) is special hospital for treatment of cancer patients that had professional nurses and doctors in providing knowledge with care for these patients. As well, there are special outpatient clinic for oral teaching patients how to caring their ostomy and changing its pouch.

These result are in agreement with (Moghalu et al., 2021) who conducted a study entitled "Psychosocial aspects of health-related quality of life and the association with patient-reported bladder cancer" and found that there was a statistical significant improvement of quality of life after implementation educational nursing program.

In addition, this result was accordance with (Shi et al., 2020) who conducted a study entitled "Effect of Orem's self-care model on quality of life and complications in the patients with cutaneous ureterostomy after radical cystectomy" and found that there was a highly statistical significant improvement of quality of life after implementation educational nursing program.

As well as, this finding is consistent with the results of a study done by Yüce and Yurtsever (2017) entitled "Effect of Education about Oral Mucositis Given to the Cancer Patients Having Chemotherapy on Life Quality" showed that level of education has a positive impact on the quality of life of cancer patients.

Finally, the current results support the idea of recommending a practical training program for patients post radical cystectomy to improve their knowledge and self-care.

Conclusion:

Based on the findings of current study, it can be conclude that:

It was concluding that, more than half of studied patients had unsatisfactory total level of knowledge regarding radical cystectomy; there was high statistically significant difference between Total level of knowledge and Level of education. Less than one third of patients had a low total quality of life dimension regarding

family/social well being and functional well being. In addition, there was high statistically significant difference between total quality of life and age. Finally, there was significant positive correlation between the patients' total level of knowledge and total quality of life dimensions.

Recommendations:

Based on the findings of the present study, the following recommendations were inferring from the study:

- An educational program with simple Arabic illustrated booklet should be designing for patients post radical cystectomy to improve their knowledge and self-care.
- Rehabilitations and coping program should be doing for radical cystectomy patients to improve their activities of daily living and life style modification.
- Psychosocial support sessions should be providing to improve quality of life regarding family/social and functional dimensions among radical cystectomy patients.
- Replication of the study in different sitting in Egypt with large probability sample is recommending for achieve generalization of the results.
- Continuous assessment of quality of life dimensions for patients undergoing radical cystectomy are recommended.

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