Effect of Self -Care Guidelines on Potential Post-Operative Complications after Transurethral Resection of the Bladder Cancer

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Abstract

Background: post-surgical complications following transurethral resection of the bladder cancer are numerous and can lead to life threating problems for patient. **Aim of the study:** was to evaluate the effect of self-care guidelines on potential post-operative complications after transurethral resection of the bladder cancer. **Study design:** A quasi-experimental research design was established to achieve the aim of the study. **Setting:** At in- patient Urology Ward 7 and 8 and urology clinic outpatients in El Demerdash Hospital Ain-shams University Cairo- Egypt. **Subjects:** A Purposive sample of 66 patients was enrolled. **Tools:** data were collected using three tools as follow: (I): Patient Assessment questionnaire, (2): Patient`s self-care practices reported questionnaire and (3): complication assessment questionnaire. **Results**. The result of this study proved that, There was statistically significant improvement for patient`s knowledge regarding bladder cancer and TURBT, self-care practices and significant decreasing in occurrence of post-operative complications. **Conclusion:** the self-care guidelines had a positive effect on patient`s knowledge and decrease the occurrence of post-operative complications. **Recommendations**: periodic education about transurethral resection of bladder cancer should be performed for patient with bladder cancer.

Keywords: Self-care guidelines, bladder cancer, complications, TURBT

Introduction

Malignant cells can develop in the tissues of the bladder to cause bladder cancer. In addition to squamous cell carcinoma and adenocarcinoma, transitional cell carcinoma is the most common kind of bladder cancer. Men are affected three to four times more frequently than women. The most typical sign of bladder cancer is painless hematuria. Urinary tract infections frequently result in dysuria, urgency, and frequency of urination (**Lawrence, 2020**). Although smoking and exposure to specific industrial toxins enhance the risk of incidence, increasing age is the greatest risk factor for bladder cancer **(Amr et al., 2018).**

The initial line of treatment for visible bladder cancers is transurethral resection of the tumor (TURBT). A scope, a specialized surgical tube, is sent into the urethra and into the bladder by the surgeon during the procedure to remove a tumor from the bladder. Using a specialized scope attachment, the tumor is removed (**American Cancer Society, 2024)** Following transurethral excision of the bladder tumor, bleeding, bladder perforation and urinary tract infection are the most frequent post-operative complications. The reported occurrence rate of bleeding problems is between 1 and 4%. More extensive tumors and early profound bladder perforations are frequently linked to severe bleeding. The second most frequent side effect after transurethral excision of a bladder tumor is bladder perforation (BP) **(Andres, 2018).**

The practice of self-care involves individuals initiating and carrying out self-care actions to maintain their own life, health, and well-being. Self-care is intentional and focused on meeting one's own needs as well as those of others who are dependent on oneself for care. It requires action, resources, and understanding. Self-care education and guidelines are necessary for patients undergoing TURBT in order to control and manage postoperative symptoms and consequences **(Bladder Cancer Advocacy Network, 2022)** Before being discharged from the hospital, it is crucial for nurses to provide the patient the right advice regarding activities, exercises, diet,

and hygiene **(Moschini et al., 2019).** Educating patients and their families about symptom management and providing nursing instructions about catheter care, exercises, diet and fluid intake, daily activities, medications, referral and follow-up, and warning signs that indicate urgent hospitalization are just two of the many ways that nurses play a critical role in reducing postoperative complications **(Cancer Research UK, 2021)**

Significance of the study

Bladder cancer is a leading source of both morbidity and mortality. It is the ninth most prevalent cancer globally, with a significantly higher incidence in industrialized than developing nations. Bladder cancer is fourth among cancers that affect men in the United States **(Ferlay, et al 2021).** Thirty percent of patients of bladder cancer in Egypt are squamous cell carcinoma, which is the second most frequent cancer among men. Furthermore, 1400 cases of bladder cancer were admitted to the urosurgery ward between June 2022 and August 2023 **Ain Shams University Center, 2023)** Special nursing instructions are necessary for patients receiving TURBT because they are more likely to experience postoperative problems because they are not well-informed about the treatment **(Ragab et al., 2021)**.

Aim of the study:

This study aimed to evaluate the effect of Self-Care guidelines of transurethral resection of the bladder cancer on potential post-operative complications through the following:

- Assessment of the patient`s knowledge regarding bladder cancer
- Assessment of the patient`s knowledge regarding TURBT
- Assessment of patient`s self-care practices
- Development and implementing the self-care guidelines based on patients' needs
- Evaluating the effect of self-care guidelines on patient`s knowledge and post-operative complications after transurethral resection of the bladder cancer.

Hypotheses:

HI: The implementation of self- care guideline will improve the patient's knowledge regarding bladder cancer.

H2: The implementation of self –care guidelines will improve the patient's knowledge regarding TURBT

H3: The implementation of self-care guidelines will improve self-care practices

H4: The implementation of self- care guideline will decrease the occurrence of post-operative complications

Operational definitions:

Potential Postoperative complications means occurrence of post-operative complications after discharge as urinary retention, hematuria, urinary incontinence, impotence, retrograde ejaculation, walking problems and urinary tract infection, but immediate post-operative complications and intraoperative complications will be excluded in this study.

Subjects and Methods

This study was portrayed under the four main

Designs as follows:

I. Technical design.

II. Operational design.

III. Administrative design.

IV. Statistical design.

I. Technical Design:

It includes research design, setting, subject and tools for data collection.

Research design:

Quasi-experimental design was used to achieve the aim of the current study. This

design is one of the experimental designs in which the study sample is divided into two groups, study group and a control group, the study group receives the experimental intervention, and the control group receives the routine treatment, and a post-test is given to both groups. The quasi-experimental approach aims to establish causality between an intervention and a result between two variables: the independent and dependent variables to compare between study and control groups**(Bare, 2020).**

Settings:

This research was conducted in inpatient Urology ward 7 and 8 and urology clinic outpatients in El Demerdash Hospital (New Emergency Hospital) affiliated to Ain Shams University Hospitals, Cairo, Egypt. The inpatient urology Ward 7 is located in the second floor of the hospital, it involves 9 rooms, 4 of them specialized for patients with bladder cancer (room number 1&2) for male patients and 7& 8 for female patients, capacity 15 beds). The inpatient Ward 8 present in the third floor consisted of 8 rooms one room only specialized for bladder cancer (capacity 3 beds). The urology clinics outpatients present in the previously mentioned hospital which works 2 days a week (Sunday and Tuesday) from 9 am to 1 pm.

Subjects:

A purposive sample of 66 patients of both genders and diagnosed as non-muscle-invasive bladder cancer will be included in this study, and had been selected for fulfilling the stated criteria they would be categorized into two groups (study and control groups), each one enrolled 33 patients, these subjects will be selected based on power analysis test depending on the patient flow rate through the last year (2022).

Sample size:

Samples include a representative of total cases in Al Demerdash Hospital (New Emergency Hospital) attendance rate (n=80) at Ain Shams University Hospitals; were hospitalized during the period from Jun 2022 to November 2022. Depending on sample size equation 66 patients were involved in this research.

So, estimation of sample size was done by adjusting the test power to 80% and the confidence interval to 95% with margin of error accepted adjusted to 5% and a known total population of 66 patients using the following equation:

- Type I error (α) = 0.05
- Type II error (B) = 0.2
- With power of test 0.80

$$n = \frac{N \times p(1-p)}{\left[\left[N-1\times\left(d^2 \div z^2\right)\right] + p(1-p)\right]}$$

$$60 = \frac{80 \times 0.50(1-0.50)}{\left[\left[80-1\times\left(0.05^2 \div 1.96^2\right)\right] + 0.50(1-0.50)\right]}$$

N= Community size

z= Class standard corresponding to the level of significance equal to 0.95 and 1.96

d= The error rate = 0.05

p= Ratio provides a neutral property = 0.50

(Chow et al., 2007)

Inclusion criteria:

- Patient with early stages of bladder cancer (non-muscle invasive)
- Patient who had no urinary tract infections
- Patients who had no bleeding disorders
- Patients had no urethral stricture

Exclusion criteria:

- Patients who have any other concomitant medical condition such as seriously ill patients who can't participate in the educational experience.
- Patient who had unsuccessful TURBT.

Tools of data collection:

Data will be collected using the following:

I. Patient Assessment questionnaire

II. Patient`s self-care practices reported questionnaire

III. Complications assessment questionnaire

Tool I: Patient assessment questionnaire: The researchers developed this tool depending on relevant literature **(Mohamed etal, 2019), (Bertino, 2020) Cancer Research UK, 2021).** It was aimed to assess demographic characteristics and pre-operative baseline data for patients with bladder cancer undergoing TURBT it is consisted of four parts**.**

This tool consisted of three parts

Part 1: This part was concerned with the demographic characteristics of the patients as (age, gender, education, marital status, occupation).

Part 2: This part was concerned with assessment of medical history for the patients as (chronic diseases, family history, smoking, exposure to pelvic radiation). This part assessed the baseline of the patient` clinical data and their medical conditions

Part 3: This part was related to assessment of patient`s knowledge regarding bladder cancer including MCQ, true false and complete questions about (definition 1 item) causes (2 items) (risk factors 3items) (types 2 items), (clinical manifestations 4 items), diagnostic measures 2 items), (complications 3 items), (medical and surgical management 4 items) All items covered the main areas of bladder cancer. Total items of knowledge about bladder cancer were (21 items). This part was assessed pre and post implementation of self-care guidelines.

Part 4: This part was concerned with assessment of patient`s knowledge regarding TURBT as (definition 1 item) (indications 2 items) (contraindications 2 items) (risks and complications 4 items) (pre-operative teaching 5 items) and (post-operative teaching 7 items). The total items regarding knowledge about TURBT were (21 items) covered the main areas about TURBT this part was assessed pre and post implementation of self-care guidelines. The total items of this questionnaire were 42 items.

Scoring system:

Each correct answer will be considered one score, but incorrect answer will be considered zero score. The Total knowledge level is categorized as follows; satisfactory level of knowledge if the total percent score was equal or more than 75% (≥ 32 marks) of the total score and unsatisfactory level if the percent score was less than 75 % (< 32 marks) of the total score

Tool II: Patient`s self-care practices reported questionnaire: It was developed by the researchers for patients with bladder cancer undergoing TURBT in the Arabic language based on relevant literature as (**Bertino**, **2020, David, 2021, Wilson et al, 2022)** to assess self-care practices for the patients pre and post implementation of guidelines. The self-care questionnaire covered assessment of studied patients for self- care practices regarding bleeding, UTI, urgency, dysuria, frequency, urinary retention, urinary incontinence, impotence, waking problems. With total items 25 items each item was scored according to three levels Likert scale (always, sometimes, never).

Tool 3: Complications assessment questionnaire: This tool is developed by the researcher to assess occurrence of post-operative complications for the patient`s undergoing TURBT after one month and after three months of follow up which include urinary retention, hematuria, urinary incontinence, impotence, ,walking problems and urinary tract infection. Score 1 was considered present of complications and score zero was considered no complications present.

Self-care Guidelines regarding patients with bladder cancer undergoing TURBT: It was prepared by the researcher based on patient`s baseline assessment of knowledge and self-care practices deficits as well as related scientific literature as (**Lewis, 2017), Cancer Research UK, (2021), and Bladder Cancer Advocacy Network, (2022).** It was delivered in theoretical and practical teaching sessions. Arabic illustrative booklet was distributed simultaneously with start of guidelines implementation to help patients to reinforce information. Theoretical part included anatomy and function of the urinary bladder, definition of bladder cancer, types, risk factors, clinical manifestation, diagnostic measures, and medical / surgical management as well as definition of TURBT surgery, its technique, indications, contra-indications, and complications. The practical part focused on self-care practices guidelines regarding diet, medications, wound care, hygiene , follow up, preventing and managing complication as bleeding, UTI, urgency, dysuria, frequency, urinary retention, urinary incontinence, impotence, walking problems.

Tool validity and reliability:

A group of nine experts including Medical Surgical nursing staff at Faculty of Nursing Ain Shams University (5) and Medical specialist in Urology disorders (4) has ascertained the content and face validity for layout, consistency, and scoring system. The content validity was measured regarding the knowledge relevance, accuracy and comprehensiveness.

Test - retest: A sample of 10 participants answered the tool to test the tool for reliability; the findings significance of all items, and a correlation coefficient above the significance level r = 0.8.

II. Operational Design:

A. Preparatory phase:

It involved a review of the most recent resea rch on peripheral arterial illnesses, as well as a t heoretical understanding of various care facets, employing books, journals, periodicals, the inter net, and magazines to create data gathering tool s.

B. Ethical consideration:

Before presenting to the multidisciplinary committee at the outpatient clinics of the Urology Unit, which is connected with Ain Shams University Hospitals, the researcher had her first meeting with each patient. During this time, she introduced herself and gave a brief explanation of the nature and goal of the study. They were told that they could opt out of the study at any time and that participation was completely voluntary. Patients gave their verbal consent to participate in this study.

C. Pilot study:

To assess the tools' clarity and usefulness, a pilot study involving 10% of patients was conducted. The main study comprised the same subjects as the pilot study as there were no changes were required.

D. Field work:

It was performed in three phases:

A. Assessment and planning phase:

- During the assessment phase, the researchers started to recruit the patient's tools. The first thirty-three admitted patients who receive transurethral resection of the bladder cancer in the selected setting was defined as a controls who received the routine hospital care, while the second followed thirty-three admitted patients were considered as study group for avoiding sources of any bias. All patients under study (study and control group patients) were assessed using study tools.

- In order to finish the data collecting procedure, the researcher obtained the phone number at the initial contact in order to schedule the following appointment.

- An overview and clarification was provided about the tools, then, the questionnaire was distributed to each patients

in study category to assess demographics, medical history, knowledge about the disease and the surgery of (TURBT), and self-care practices. Its filling took from (60-70 minutes) distributed as the following: the demographics assessment about 5 minutes, the medical history assessment about 5 minutes, the knowledge assessment regarding the disease about 10 minutes, patient`s knowledge assessment regarding the TURBT about 10 minutes. Knowledge assessment regarding potential postoperative complications about 10 minutes. Self-care practices took about 30 minutes. The data of this phase constituted the baseline for further comparisons to identify the effect of the self-care guidelines. The frequency of group assessed participated ranged from 1-3 group.

- For controls, all data collecting instruments were completed in roughly the same amount of time for the pre-assessment**.**

Implementation:

- After patients in the study group filling in the tool with orientation about the content and purpose of the research. Self-care instructions were implemented for study group based on patients' learning needs. Educational sessions were conducted in classrooms in Urology Unit. The classrooms that were prepared to teach the patients.

- According to the needs determined in the assessment phase from the patients under study and reviewing related literature, the researcher developed self- care guidelines with attached printed Arabic booklet to satisfy knowledge deficit and practices. During assessment phase the researcher prepared and translated tools.

- Implementation of self-care guidelines lasted for more than 3 months for all participants in the study group. Each session took almost 25-35 minutes /day for three days weekly. These session were conducted for small groups ranged from 1-5 participants.

- The self-care guidelines included 4 scheduled sessions. First session: It included anatomy of urinary bladder, definition of bladder cancer, types, manifestations, risk factors, and methods of treatment. Second session: It was included definition of TURBT surgery, Indications, contraindications, and complications, pre-operative teaching, during and post-operative teaching. Third session: potential post-operative complications after TURBT. Fourth sessions: self- care practices guidelines. Such sessions were repeated to each category of studied patients, until all groups finished.

- Every session started with feedback regarding the prior one. Small-group discussions were the mode of instruction. All patients who could read and write were given a handbook, movies, and posters, among other appropriate instructional materials. Additionally, the researcher called the patients to provide guidance and support.

Evaluation phase:

Evaluation was asserted on determining the influence of self-care guidelines on patient's knowledge and occurrence of post -operative complications for cases with bladder cancer undergoing TURBT by comparing the findings pre and post guidelines implementation by using the same tools for study and control groups.

III. Statistical Design:

The collected data were coded and analyzed. The appropriate tests were used for comparison between,/ pre implementation and post implementation of guidelines to subjects. Chi-square and t-test were used and P-value <0.05 was recognized significant.

IV. Administrative Design:

Official consent was received from the head of the inpatient urology wards 7 and 8 at Ain Shams University and the director of the New Emergency Hospital, where the study was carried out.

Results

Table (1), the mean age of the subjects in the study and control groups was 47.12 years, 60.6% and 54.5% of the patients were male in the study

and control group, Also, 42.4% and 39.4% of the studied patients their education was moderate education and highly education respectively. Also, 51.5% and 45.5% of study and control group were married. Regarding occupation, 57.6% of the studied patients were working in the study group but 63.6% of them in the control group.

Table (2) showed that, 36.4% and 30.3% of the patients had chronic cystolithiasis in the study and the control group respectively. Also, 54.5% of the studied patients were had positive family history of bladder cancer in the study group but 48.5% in the control group. Also, 60.6% of the patients were smokers in the study group but 66.7% of them in the control group. Also, 60.6% of the studied patients had no exposed to radiation in the study group but 51.5% of them in the control group.

Table (3) this table showed that, 39.4%, & 36.4% of the study and control groups had satisfactory level of knowledge about bladder cancer pre implementation of guidelines with no significant difference (p=0.769) which improved to 81.8% in the study group after implementation of guidelines with statistically significant difference between them at (p=0.041).

Table (4) revealed that, 36.4%, & 39.4% of the study group and controls had satisfactory level of knowledge about TURBT before implementation of guidelines with no statistically significant differences between them (p=0.769) which improved to 87.9% in the study group after implementation of guidelines with statistically significant difference between them at (p=0.020).

Figure (1) clarifies that, 36.4%, & 39.4% of the study group and control group had satisfactory level of total knowledge about bladder cancer and TURBT pre implementation of guidelines with no significant difference (p=0.624) which progressed to 84.8% among those who underwent intervention with statistical significant difference between them at (p=0.024).

Table (5) showed that satisfactory level of self-care practices was found among 33.3%, & 30.3% of the study and control groups before implementation of guidelines with no statistically significant difference (p=0.769); this level of self-care practices was improved to 81.8% in the study group after implementation of guidelines with statistical significant difference between them at (p=0.020)

Table (6) showed that, there were statistically significant differences between study and control groups regarding occurrence of postoperative complications after implementation of guidelines ($p<0.05$) except frequency and urine retention.

Table (7) showed that, there were significant positive correlation between total score of self-care practices and total level of knowledge after implementation of guidelines at ($p<0.001$).

Table (8) showed that, there were significant positive relation between total level of knowledge and total of post-operative complications after the implementation of guidelines (p=0.012).

Table (1): Number and Percentage Distribution of Demographics Characteristics of the Patients under Study (n=66).

Demographic characteristics	Groups				Chi-square	
	Study n.33		Control n.33			
	No.	%	No.	%	X^2	P-value
Age (years)						
• <40 years	8	24.2%	7	21.2%	0.283	0.868
• 40-<50 years	10	30.3%	12	36.4%		
• ≥50 years	15	45.5%	14	42.4%		
• Mean±SD	47.12±8.01		47.12±7.91			
Gender						
• Male	20	60.6%	18	54.5%	0.062	0.803
• Female	13	39.4%	15	45.5%		
Education						
• Read and write	6	18.2%	9	27.3%	0.960	0.619
• Moderate education	14	42.4%	11	33.3%		
• Highly education	13	39.4%	13	39.4%		
Marital status						
• Married	17	51.5%	15	45.5%	0.061	0.805
• Single	16	48.5%	18	54.5%		
Occupation						
• Working	19	57.6%	21	63.6%	0.063	0.801
• Not working	14	42.4%	12	36.4%		

Table (2): Number and Percentage Distribution of the Patients Regarding Their Medical Data (n= 66)

Patient`s history	Groups				Chi-square	
	Study n.33		Control n.33			
	No.	%	No.	%	X^2	P-value
Chronic disease						
• None	5	15.2%	6	18.2%	1.344	0.719
• Diabetes	10	30.3%	9	27.3%		
• Chronic cystolithiasis	12	36.4%	10	30.3%		
• Chronic cystitis	11	33.3%	13	39.4%		
Family history						
• Positive	18	54.5%	16	48.5%	0.061	0.805
• Negative	15	45.5%	17	51.5%		
Smoking						
• Smoker	20	60.6%	22	66.7%	0.065	0.798
• Not smoker	13	39.4%	11	33.3%		
Exposure to pelvic radiation						
• Yes	13	39.4%	16	48.5%	0.246	0.619
• No	20	60.6%	17	51.5%		

Table (3): Comparison between Study and Control Groups Regarding Satisfactory Level of Knowledge about Bladder Cancer at Pre and Post Implementation of Self- Care Guidelines (n=66)

Items of knowledge	Pre				Post				Chi-square			
	Study group n.33 Satisfactory		Control group n.33 Satisfactory		Study group n=.33 Satisfactory		Control group n.=33 Satisfactory		Pre		Post	
	No	%	No	%	No	%	No	%	X^2	P-value	X^2	P-value
• Function of urinary bladder	16	48.5	15	45.5	30	90.9	16	48.5	1.016	0.769	14.494	0.034*
• Layers of urinary bladder	11	33.3	13	39.4	24	72.7	15	45.5	2.176	0.438	10.260	0.048*
• Definition of bladder cancer	14	42.4	11	33.3	28	84.8	11	33.3	3.134	0.221	26.147	<0.001**
• Causes/risk factors	10	30.3	9	27.3	23	69.7	11	33.3	1.016	0.769	10.617	0.045*
• Clinical manifestations	12	36.4	14	42.4	24	72.7	13	39.4	2.176	0.438	10.432	0.047*
• Complications	13	39.4	13	39.4	29	87.9	15	45.5	0.000	1.000	15.193	0.032*
• Management	15	45.5	12	36.4	29	87.9	14	42.4	3.134	0.221	16.531	0.029*
Total	**13**	39.4	**12**	36.4	**27**	81.8	**14**	42.4	1.016	0.769	12.536	0.041*

P>0.05 in-significant ***P≤0.05significant** ****P ≤ 0.001 highly significant**

Table (4): Comparison between Study and Control Groups Regarding Satisfactory Level of Knowledge about TURBT at Pre and Post Implementation of Self- Care Guidelines (n=66)

Items of knowledge	Pre				Post				Chi-square			
	Study n.33 Satisfactory		Control n.33 Satisfactory		Study n.33 satisfactory		Control n.33 Satisfactory		Pre		Post	
	No	%	No	%	No	%	No	%	X^2	P-value	X^2	P-Value
• Def of TURBT	10	30.3	11	33.3	27	81.8	12	36.4	1.016	0.769	16.761	0.028*
• Indications of TURBT	12	36.4	12	36.4	29	87.9	13	39.4	0.000	1.000	20.722	0.018*
• Contraindications	14	42.4	13	39.4	32	97.0	15	45.5	1.016	0.769	27.064	<0.001**
• Complications/ risks	13	39.4	8	24.2	28	84.8	10	30.3	4.011	0.168	27.852	<0.001**
• Pre-operative teaching	10	30.3	12	36.4	28	84.8	12	36.4	2.176	0.438	23.015	0.016*
• Intraoperative teaching	13	39.4	14	42.4	30	90.9	15	45.5	1.016	0.769	18.674	0.021*
• Post-operative teaching	11	33.3	13	39.4	27	81.8	15	45.5	2.176	0.438	12.472	0.041*
Total	**12**	36.4	**13**	39.4	29	87.9	**14**	42.4	1.016	0.769	19.590	0.020*

P>0.05 in-significant ***P≤0.05significant** ****P ≤ 0.001 highly significant**

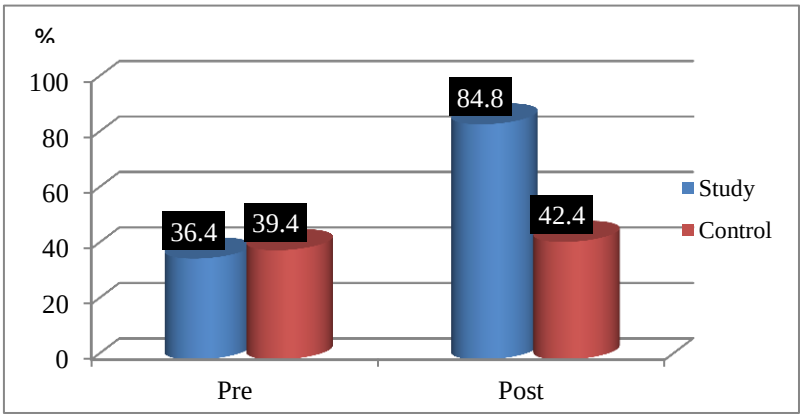

Figure (1): Total Satisfactory Level of Knowledge

Table (5): Comparison between Study and Control Groups Regarding the Satisfactory Level of Self-care Practices Post Implementation of Self- care Guidelines (n=66)

Total items of self- care practices	Pre				Post				Chi-square			
	Study n.33 Satisfactory		Control n.33 Satisfactory		Study n.33 satisfactory		Control n.33 Satisfactory		Pre		Post	
	No	%	No	%	No	%	No	%	X^2	P-value	X^2	P-Value
• Diet management	11	33.3	10	30.3	27	81.8	10	30.3	1.016	0.769	27.476	<0.001**
• Medications management	12	36.4	10	30.3	28	84.8	12	36.4	2.176	0.438	24.638	<0.001**
• Wound care management	13	39.4	10	30.3	26	78.8	12	36.4	3.134	0.221	16.401	0.030*
• Hygiene management	10	30.3	9	27.3	27	81.8	11	33.3	1.016	0.769	24.728	<0.001**
• Follow up management	11	33.3	10	30.3	27	81.8	10	30.3	1.016	0.769	27.476	<0.001**
• Self-care for Bleeding	11	33.3	10	30.3	27	81.8	11	33.3	1.016	0.769	24.014	0.010*
• Self-care for UTI	13	39.4	11	33.3	29	87.9	13	39.4	2.176	0.438	24.540	<0.001**
• Self-care for Urgency	12	36.4	10	30.3	28	84.8	12	36.4	2.176	0.438	24.638	<0.001**
• Self-care for Dysuria	10	30.3	9	27.3	27	81.8	11	33.3	1.016	0.769	24.728	<0.001**
• Self-care for Frequency	12	36.4	11	33.3	29	87.9	13	39.4	1.016	0.769	25.124	<0.001**
• Self-care for Urinary retention	11	33.3	10	30.3	27	81.8	10	30.3	1.016	0.769	27.476	<0.001**
• Self-care for Urinary incontinence	10	30.3	9	27.3	26	78.8	9	27.3	1.016	0.769	27.516	<0.001**
• Self-care for Impotence	13	39.4	10	30.3	26	78.8	12	36.4	3.134	0.221	16.401	0.030*
• Self-care for Waking problems	11	33.3	12	36.4	25	75.8	14	42.4	1.016	0.769	10.574	0.046*
Total	**11**	33.3	**10**	30.3	27	81.8	**12**	36.4	1.016	0.769	19.955	0.020*

In sig. >0.05 **Sig. ≤0.05** *** High sig. ≤0.001****

Table (6): Comparison between Study and Control Groups Regarding Occurrence of post-operative Complications Post Implementation of Self- care Guidelines (n=66)

post-operative complications after discharge	Study n=33		Control n=33		x^2	P-value
	No.	%	No.	%		
• Bleeding	4	12.1	19	57.6	14.817	<0.001**
• UTI	4	12.1	15	45.5	8.840	0.003*
• Urgency	3	9.1	17	51.5	13.833	<0.001**
• Dysuria	3	9.1	13	39.4	8.122	0.004*
• Frequency	5	15.2	5	15.2	0.000	1.000
• Urinary retention	5	15.2	11	33.3	2.898	0.089
• Urinary incontinence	1	3.0	13	39.4	12.888	<0.001**
• Impotence	9	27.3	19	57.6	6.107	0.014*
• Waking problems	8	24.2	19	57.6	7.500	0.006*
• Death	0	0.0	0	0.0	0.000	1.000

In sig. >0.05 **Sig. ≤0.05** *** High sig. ≤0.001***

Table (7): Correlation between Total level of Knowledge and Total Score of Self-care Practices after Self-care Guidelines Implementation (n=66).

Items	Total level of knowledge			
	Pre		Post	
	r	p-value	r	p-value
Total score of self- care practices	0.168	0.335	0.672	<0.001**

In sig. >0.05 **Sig. ≤0.05** *** High sig. ≤0.001****

Table (8): Relation between Total Level of knowledge and Total of post-operative Complications among Study and Control Groups after implementation of Guidelines (n=66)

			Total Level of knowledge					
			Satisfactory		Un-Satisfactory		Chi-square	
			No	%	No	%	X^2	P-value
Total of post-operative Complications	Study	Yes (n=13)	8	24.2	5	15.2	6.321	0.012*
		No (n=20)	20	60.6	0	0.0		
	Control	Yes (n=25)	9	27.3	16	48.5	0.826	0.362

Discussion

Bladder cancer occurs when cells in the bladder start to grow without control. Non-muscle-invasive bladder cancer is cancer that has not reached the muscle wall of the urinary bladder. Transurethral resection of bladder tumor (TURBT) is an operation to diagnose and treat early bladder cancer. there are many postoperative complications after discharge period for TURBT, so the nurse play important role to increase patient`s knowledge and enhance self-care practices regarding the disease and surgery of TURBT to avoid the risks and decreasing the rate of complications **(Kamat & Huri, 2023)**.

Regarding the demographic characteristics of the patients the current study showed that, the mean age of the study group and control group was (47.12±8.01) years and these findings are in line with **Osman et al., (2023)** who mentioned in his study titled as (Bladder Perforation as a Complication of Transurethral Resection of Bladder Tumors: the Predictors, Management, and its impact in a Series of 1570 at a Tertiary Urology Institute) that the mean age for patients with bladder cancer was 48 ± 11 years.

Also, about more than one half of the study and control groups were males these findings are similar to the result of **Selkirk et al., (2020)** in his study (Family History of Prostate Cancer in Men Being Followed by Active Surveillance Does Not Increase Risk of Being Diagnosed With High-grade Disease) who demonstrated that the majority of the two groups were males and this might be as a result of most of patients who knew their diagnosis and agreed to participate in the study were males. Also this result is agreed with the study result done by **(Babjuk, Oosterlinck and Sylvester (2019)** who proved in his study as titled as (EAU guidelines on non-muscle-invasive urothelial carcinoma of the bladder) that bladder cancer was found among males.

The current study revealed that, about half of the studied patients were had moderate education and this result is incongruent with **Smith , et al., (2017)** , who mentioned in his study titled as (Impact of Bladder Cancer on Health-Related Quality of Life) that more than two thirds of the studied subjects were highly educated . As regards marital status, the current study showed that one half of the subjects in the study group and less than half of them in the control group were married with no considerable difference. This is incongruent with **symeonidis et al., (2022)** who stated in the study done as tilted (Unblock Resection of Bladder Tumors: Challenges and Unmet Needs in 2022) that greatest portion of studied cases were single.

Regarding occupation, the present study proved that, more than one half of subjects in the study group and about two thirds of them in the control group were working with no considerable variance, this is similar to **wani, and meddan (2023)** who mentioned that the majority of both groups were working. and this indicates to that may be their works was the main cause of bladder cancer.

Furthermore, the current study showed that about one third of the study group and control group had chronic cystolithiasis and this was agreed with **Wani et al., (2022)** who revealed in his study (Urological Implications Associated with the Use of Recreational Drugs: A Narrative Review) that the majority of the studied patients were have chronic cystolithiasis, from my standpoint, this assures the strong relation between chronic infection of the bladder can lead to occurrence of bladder cancer. Also, In our study, more than one half of the study group and less than one half of them in the control group had a positive family history and this similar to **Botteman et al., (2022)** who proved in the study (Bladder Cancer Epidemiology, Diagnosis, and Management) that the majority of the study sample were had a positive family history.

Regarding to smoking , the present study revealed that about two thirds of the participants in the study group and more than two thirds of them in the control were smoker,

this results goes on the same line with **Antoni et al .,(2020)** who mentioned that there were a positive correlation between smoking and bladder cancer. In my opinion, this refers to the tobacco use contains a lot of toxic and carcinogenic substances causing bladder cancer.

AS regards exposure to pelvic radiation, the present study revealed that, more than one half of the study and control groups don`t expose to pelvic radiation. And this assured that there were other causes than exposure to radiation lead to occurring of bladder cancer. This result is agreed with **(Bertino, 2020)** who mentioned that, exposure to pelvic radiotherapy can increase the risk of secondary bladder cancer.

In relation to knowledge about bladder cancer, and TURBT, the present study proved that, there was significant improvement in patient`s knowledge regarding bladder cancer and TURBT after implementation of guidelines or study group versus control group. In which, statistically significant difference observed between both of them. This finding is support the first and second hypotheses.

Also, this finding is similarly to **Mohammed et al., (2019)** who reported in his study (Effect of Implementing Nursing Instructions on Patients' Outcomes Undergoing Transurethral Resection of Bladder tumor) that, there was a potential variance between both groups following implementation of nursing instructions as regarding the knowledge about bladder cancer and resection, and this refers to a positive effect of self-care guidelines to increase patient`s knowledge regarding the bladder cancer and surgery of TURBT.

As regards total satisfactory level of knowledge, The current study revealed that there was significant improvement in total knowledge about the disease and TURBT and this indicates the importance of guidelines to increase patients` information and awareness about bladder cancer and TURBT, this finding is support the first research hypothesis and also, it was supported by **Mohammed et al., (2019)** who reported significant variation between the two groups regarding total score of knowledge and assessed complications.

Regarding to total self-care practices among the studied patients, the present study demonstrated that there was significant improvement for patient`s self-care practices after implementation of guidelines for study group than control group in which statistically significant differences observed between two groups regarding items of self-care practices. This result is support the third research hypothesis, in addition, this finding reflects the importance of effective teaching through educational guidelines which improving the health care practices for patients after the surgery of TURBT.

This finding is supported by **Wilson et al., (2022)** who suggested that health care practices for patients can be greatly impacted and improved by providing effective education, and establishing improvement targets.

Regarding to occurrence of post-operative complications the present study found that, there were decreasing in occurrence of post - operative complications for the study group participants versus participants in the control group in which statistically significant differences founded between two groups, and this reflects the importance of continuous teaching after discharge period and follow up of patients undergoing TURBT to avoid the potential risks of surgery in this period,

And, this finding is support the fourth research hypothesis; also it was in the same line with the study by **Sung & Yuk, (2020)** who founded that the enhanced recovery after surgery protocol and perioperative patient counseling and education can improve postoperative patient's recovery and decrease the rate of complications for patient undergoing TURBT. Also, this result is supported by **Khalil et al., (2021)** who deduced from his study

(Effect of Nursing Instructions on patient's knowledge and Potential Postoperative Complications after Transurethral Resection of the Prostate) that the pre-surgical nursing education improved patients' knowledge and decreased the rates of complications.

In relation to correlation between total score of knowledge and total score of self-care practices pre and post implementation of self-care guidelines, the current study revealed that, significant positive correlation between total score of self-care practices and total level of knowledge post implementation of guidelines and from my standpoint, this indicates that when the patient`s knowledge increased regarding to the diseases and surgery of TURBT his self-care practices improved and this positive correlation reveals the importance of guidelines to modify patient`s knowledge and self-care practices toward the disease.

This is in a harmony with **Abdel Wahid et al., (2022)** who discovered positive associations between urinary diversion patients' knowledge and practice.

The present study revealed a significant positive relation between total level of knowledge and total of post-operative complications post implementation of guidelines, and this result assured the strong effectiveness of guidelines on patient's knowledge which directly effect on occurrence of potential complications and risks for surgery of TURBT. This result goes in the same line with **Mohammed et al., 2019**, who concluded significant progression post implementing of the nursing instructions on patients` outcomes.

Conclusion

The implementation of self- care guidelines for patients with bladder cancer and undergoing transurethral resection has a significant positive effect on patients` knowledge, self-care practices regarding the disease and TURBT, and has also a positive effect on occurrence of post-surgical complications.

Recommendations

Based on the findings of the research, the following is recommended:

1. Further studies should be carried on a large size of subjects to demonstrate results and generalizability.
2. Further researches should focus on the proper care and identification of predictors of post- operative complications for patient receiving TURBT
3. Continuous educational programs should be held periodically including self-care management for cases with bladder cancer and receiving TURBT.
4. Educational guidelines should be constructed for nurses who care for the patient undergoing TURBT

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