Effect of Nursing Guidelines on Clinical Outcomes for Patients Undergoing Transurethral Resection of Prostate

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Abstract

Background: Transurethral Resection of the Prostate (TURP) still the benchmark surgical management for benign prostatic hyperplasia (BPH), in spite of newer minimally invasive technique. Patient teaching is essential to lessen anxiety and complications. **Aim:** To investigate the impact of structured nursing guidelines on clinical outcomes for patients undergoing TURP. **Design:** Quasi - experimental research was employed. **Setting**: The study executed at Student's Hospital connected to Tanta University Hospitals, Ministry of Higher Education, Egypt. **Subject:** A purposive sample of 50 adult male patients scheduled for undergoing TURP allocated to control group who obtained routine care and intervention group who was given pre/postoperative nursing instructions **Tools:** Three tools were used in this study: **Tool I:**Patients' Assessment Structured Interview Questionnaire .**Tool II:** Patients Clinical Outcomes sheet including three parts: **Part1**:Pain Assessment tool, **Part 2**: Beck Anxiety Inventory, **Part 3** :Post Resectoscope Patient's Observation for risks of Complication Checklist**. Tool III**:A questionnaire for rating health-related quality of life **Result:** The intervention group showed significant improvement in total knowledge (100%) high level of knowledge (**p** <0.001), decreased total anxiety (Beck Inventory , 80% had mild anxiety level ;**p** <0.001) , lower pain scores (Numeric rating scale ; P value = 0.001 , complications rates (hematurea ,urinary incontinence and dysuria) were lower at 2 months follow up (**p** <0.05) and there was a statistical significant differences in total life quality level between both groups (**p**=0.000). **Conclusion:** The implementation of structured nursing instructions positively influences clinical outcomes in patients undergoing TURP . **Recommendations:** Structured patient education using diverse educational materials (verbal, written, visual aids) should be integrated into routine nursing care for TURP patients.

Keywords: Clinical Outcomes, Nursing Guidelines , Transurethral Resection of the Prostate(TURP)

Introduction

Transurethral resection of the prostate is now the most popular endourological management for BPH. However, a number of problems such as sequent hemorrhage , urinary incontinence, urinary tract infection, urine retention, and the urethral stricture, are likely to arise if the intervention is not appropriate following surgery. **(Niu , Huang , Wang &Liu , 2021).** A resectoscope is introduced through the urethra to perform transurethral resection of the prostate , which involves resecting prostate tissue using an electrically powered cutting-coagulating metal loop. The prostatic capsule is kept intact while as much prostatic tissue as feasible is removed with the benefits of minimal trauma, tremendous impact, quick recuperation, and brief hospitalization**. (Leslie , Chargui & Stormont, 2023).**

There are between 150,000 and 300,000 TURP procedures performed each year. **(Mahmoud & Shady, 2025).**

Certain patients are more likely to experience unpleasant emotions. They are concerned about the impact of surgery and the recuperation period following the procedure, which could lower their level of compliance, affect the therapeutic outcome, and ultimately lower their life quality. given the seriousness of the illness , some research has indicated that extensive nursing care is crucial for enhancing patients' psychological well-being and lowering the risk of consequences. **(Niu et al., 2021**). Anxiety levels grow when patients are informed that an operation is required, which can lead to life-threatening situations. This anxiety starts when they are admitted to the hospital, between 60% and 80% of patients have preoperative anxiety, which can lead to medical issues like headaches, nausea, and confusion. Additionally, it has a negative effect on postoperative pain and comfort levels and anxiety throughout the postoperative phase. For the majority of patients, postoperative discomfort is an inevitable occurrence. In Western nations, 75% of surgical patients have moderate, severe, or excruciating pain throughout the recovery phase. **(Atay & Sayılan, 2020).**

Patients often want to know a lot about their illnesses and health conditions, and giving them the most updated, reliable, and relevant information helps them and their families make decisions about their care. The disease must be explained to patients; they must understand their condition, their symptoms, diagnostic procedures, drug administration, and when to seek medical help. Materials for patient education improve health literacy, teach

patients about their conditions, and assist and promote informed decision-making based on patient preferences and the most current and accurate clinical and medical data.

(Bhattad & Pacifico, 2022) So, it is crucial to investigate the influence of nursing guidelines on clinical outcomes of patient undergoing TURP.

Significance of the study

The rate of flow in 2023 was 100 patients based on Tanta university student's hospital statistical record, (2023). It was noted that most patients undergoing transurethral resection of the prostate are susceptible to postoperative risks due to deficiency of knowledge regarding the operation, so they need unique nursing guidelines to minimize these risks . Moreover, being that patients frequently depart the hospital with expectations and questions, particularly about the functioning of the reproductive and urinary systems, as well as social and emotional requirements, nurses are crucial in helping patients get ready for discharge. **(Da Mata & Napoleão, 2010).**

The aim of present study was to: Determine the impact of structured nursing instructions on clinical results for patients undergoing transurethral resection of the prostate

. **Research Hypotheses: -**

- Patients who received structured nursing guidelines exhibited improvement of their knowledge ,had better clinical outcomes and life quality after TURP than patients who did not receive nursing guidelines .

Subjects and Method

Design: A quasi - experimental design was used in study.

Study settings: -

The study was carried out at inpatient urological department at Student's hospital associated with Tanta university hospitals .

Study subjects: -

A purposive sample of fifty adult male patients who were scheduled to have TURP. According to Epidemiological Information Program, the sample size was determined by reviewing the statistics records of Tanta Main University Hospital and calculating the overall number of patients yearly. According to the hospital data record of Tanta University students, the flow rate in 2023 was 100 patients.

The sample was chosen, and it was split into 2 equal groups of 25 patients each.

Control Group: 25 who was given routine hospital care .

Study Group: 25 who obtained nursing instruction by the researcher.

-Inclusion criteria of subjects:

- Adult male patients aged from 40-59 yrs. old

-Conscious and able to communicate efficiently.

-Diagnosed with BPH and scheduled for undergoing TURP.

Exclusion criteria were as follows:

-Patients who were incapable of receiving, comprehending, or reacting to instructions.

-Patients who had concurrent procedures with TURP.

- Patients who underwent TURP for other causes than BPH as prostatic cancer

Study tools:

Three tools were used in this study:-

Tool I: patients' Assessment Structured Interview Questionnaire.

This tool was created by the researcher after looking over the relevant literature**.(Leslie, Chargui & Stormont, 2023) &(Mata & Napoleão, 2010).**

It included three parts: -

Part (A): Patient socio-demographic traits, such as, age, educational level, occupation, marital status, and residence.

Part (B): Patient's clinical data, as patient's chief complain, health history, past-surgical and medical history, family history.

Part(C): Patient's knowledge appraisal regarding TURP. This part was used to assess patient's knowledge regarding transurethral resection of prostate. It comprised of 22 multiple choose questions .

Total Scoring system:-

correct and complete scored 2, correct and incomplete scored 1 and incorrect or no answer was scored Zero.

The total scoring of patient's knowledge was calculated and categorized as the following:

-High level of knowledge if patient's score is more than 75% of the total score.

-Moderate level of knowledge if patient's score is more than or equal 50-75% of the total score.

-Low level of knowledge if patient's score is less than 50% of the total score.

Tool II: **Patients' clinical Outcomes sheet**:

It consisted of three parts:

Part 1: **Pain Assessment Tool:**

The researcher used the numerical rating scale (NRS) to measure the intensity of pain. The NRS asks the patient to rate their pain on an 11-point scale from 0 to 10, where 10 conveys the worst possible pain and 0 indicates no pain.

Scoring system: classified into (no pain (0), mild (1-3), moderate (4-6), severe (7-9) and worse pain (10).

Part 2: Beck Anxiety Inventory (BAI):

This scale was adopted by the researcher and was developed by Beck et al (1988) to check anxiety level of the patient and their family in relation to the illness and its treatment. The BAI is a 21-item multiple-choice self-report questionnaire. On a 4-point rating scale, the options are as follows: not

at all (0), mildly but not bothersome (1), moderately: it was really uncomfortable, but I could tolerate it (2), and badly, hardly able to tolerate it (3). Anxiety is measured by adding up the items; higher scores indicate more anxiety.

Part 3: Post Resectoscope Patient's Observation Complication Checklist.

The researcher created it following an examination of relevant literature. It was employed to determine whether problems from TURP were present or not, as hemorrhage, UTIS, urinary retention, weak urinary stream, dysuria and urinary incontinence . This part comprised data from patients immediately after operation and follow-up for two months after operation.

Scoring system:

- (One mark) for existence of TURP complications.
- (Zero) for absence of post TURP complications.

Tool III: Questionnaire for rating health-related quality of life.

The WHOQOL is a quality of life measure created by the World Health Organization that accounts for many subjective aspects. The 26-item WHOQOL-BREF comprises four domains: physical health (7 items), psychological health (6 items), social relationships (3 items), and environmental health (8 items), in addition to QOL and general health questions. A five-point ordinal scale is used as a response scale to score each individual item of the WHOQOL-BREF from 1 to 5. The scores are then transformed to a 0–100 scale in a linear fashion.

Method:

-Official permission to carry out the study was acquired from the faculty of nursing to responsible authorities at the study sitting.

- **Ethical consideration:**

a-The ethical committee of faculty of nursing at Tanta university approval was obtained at 20/3/2024 before conducting the study .

b- Following a clarification of the study's goal, consent was acquired from each patient included.

C-Nature of the study didn’t harm or cause any pain to the entire subject.

d- The right of withdrawal was reserved anytime.

e- Privacy and confidentiality were taken into account in relation to the information gathered. Names were replaced by a code number.

-**Tool development:** The tools of the study was designed by the researcher after reviewing relevant literature .

-Tool validity:

Five juries of experts in medical-surgical nursing evaluated the content of validity for clarity and relevance in this profession, and modifications were made.

- Reliability of the tool

Developed tools was tested by Cronbach's Alpha test .It was 0.923

for tool I part c, 0.800 for tool II part 2 and 0.920 for tool III.

-A pilot study was carried out on five patients to evaluate the tools' applicability and viability as well as to identify any potential roadblocks to data collection. Based on the knowledge gathered from the pilot study, the researcher made the necessary adjustments. Those patients were excluded from the study subjects.

- Data collection

The six-month data collection period began in October 2024 and ended in March 2024.

-Nursing instructions was conducted on four phases as follows:

A- Assessment Phase:

-The researcher used Tool I Parts A and B to conduct an initial assessment of all study participants in both the control and study groups in order to determine which patients satisfied the study's inclusion requirements.

-Once all study participants in the control and study groups have given their informed consent, used Tool I Part C and Tool II Part 2 to collect baseline data that is relevant..

B-Planning phase: -

-All information pertaining to patients' awareness of transurethral resection of the prostate was gathered, and it was analyzed to determine the needs of the patients in light of the relevant literature.

-The instructional manual was written in Arabic and included illustrations. It was created to provide knowledge about TURP operation.

- Nursing instructions were planned to apply in two sessions: each session was taken duration30 - 45 minutes to study groups within two days from total period of the study.

-**Teaching method: Included** in the instructional strategy were discussion, demonstration, and re-demonstration.

-**Teaching tools:** booklets, illustrated pictures, power point was used as teaching aids.

C- **Implementation phase**

Group (I): Control groups.

Control group received the routine hospital nursing care as prescribed by medical team and consisted of routine Pre - procedure instructions, routine post - procedure care.

Group (II): study groups.

Study groups who received nursing instructions implemented by the researcher through two sessions and each session started by pre-test and ended by post- test, instructions was given for every patient individually as the following:

Session 1 of nursing instructions:

It was provided to patient the day before the procedure and took about from 30- 45 minutes.

Content of first session was included as the following: -

knowledge about TURP (definition, brief description , indications

,contraindications , advantages , complications of operation, investigations needed before procedure , type of anesthesia used, position of patient during operation, pre operative physical and psychological preparation for operation.

Session 2 of nursing instructions:

It was started the day of operation and took about 30 -45 minutes.

Content of second session was included as following: -

Patients received discharge instructions and post-operative guidelines that included health education on urinary tract blockage, hematuria, and dysuria, as well as information on genital hygiene, catheter management, infection prevention, drinking a lot of water, and exercises to strengthen the pelvic floor muscles, return to work, signs of complications, medication administration, exercise, nutrition, sexual activity, and medical guidance were also included in the training.

D. Evaluation phase:-

-Tool I, portion (C) was used to evaluate the study group to assess patient's awareness about transurethral resection of prostate (post nursing instructions) , tool II part 2 to assess patient level of anxiety (post nursing instructions).

- Tool II part 1 to assess patient level of pain immediately and after a week of operation for both the control and study groups .

- Tool II part 3 to assess the patients for any complications (immediately after operation and follow up for two months) for the two groups.

- Tool III to assess quality of life for both the control and study groups.

-Finally, comparison was done between study and control group for clinical outcomes and quality of life.

Statistical analysis of the information gathered:

The data that was entered into the computer was examined using the IBM SPSS software package, version 20.0. (Armonk, NY: IBM Corporation, 2011). Numbers and percentages were used to describe the qualitative data. The distribution's normality was confirmed using the Shapiro-Wilk test. The mean, standard deviation, and range were used to characterize quantitative data. At the 5% level, the results' significance was assessed. The tests that were used were: Chi-square analysis When comparing groups using categorical variables, Fisher's Exact or Monte Carlo correction are utilized when more than 20% of the cells have an anticipated count below 5, chi-square correction is applied. Marginal Homogeneity Test and McNemar utilized to evaluate the importance of pre- and post-instruction, for quantitative variables that are regularly distributed, the student t-test is used to compare two groups under study, and the Pearson

coefficient For two quantitative variables that are regularly distributed to correlate.

Results

Table (1): Demonstrates distribution of the studied patients undergoing transurethral resection of prostate (TURP) regarding their socio-demographic characteristics. **In relation to age**, it was found that 72 % and 76 % for control and study groups respectively with mean age range **56.00±2.291** in control group and **55.96±2.590** in study group. **Concerning marital status**, most of the Studied groups were married 76%, 100 % for control and study groups respectively. **Considering educational level,** 20 % of the control group can read and write, 20 % of study group was illiterate , 24 % of the control group was diploma and 24 % of the study group was University education.

As for occupation, it was observed that nearly half (40%) of control group had manual work, while 36 % of the study group were farmers. **Finally, related to residence area,** most of the control group and the study group(64% , 84%) respectively lived in rural area.

Table (2): Demonstrates assessment of total level of knowledge of the studied patient regarding transurethral resection of prostate (TURP) among the studied groups. It was revealed that there were no statistically significant differences between both groups before implementation of nursing Instructions**.** On the other hand, it was obvious that there were a highly statistically significant improvement in study group knowledge after giving nursing instructions (**P** <0.001).

Figure (1): Clarifies total knowledge level of the studied patient regarding transurethral resection of prostate (TURP) among the studied groups. It clarifies that most of the control and study group before giving nursing instructions had little level of knowledge (76%) of both groups and less than quarter of both groups had moderate level of knowledge (24%,16%) for control and study group respectively and only 8%)of the study group had a high level of knowledge , while after giving nursing instruction to the study group there was a great progress in their knowledge level immediately post giving nursing instructions as everyone of the study group had a high level of knowledge .

Table (3): Illustrates assessment of pain of the studied patients undergoing TURP using numerical rating scale (NRS) among the studied groups. It revealed that a highly statistically significant difference exists related to pain severity (intensity) and relieving factors for control and study group immediately post procedure and post one week as (**P** = 0.001).

Figure (2): Shows total level of anxiety among the studied groups undergoing transurethral resection of prostate according Beck anxiety inventory (BAI). It was found that (84 %) of the control group had a severe level of anxiety , (16%) had a moderate level of anxiety and there was (40%) of the study group pre instructions had a moderate level of anxiety and (60%) had a severe level of anxiety, while after giving nursing instruction there was (12%) of the study group had a minimal level of anxiety , (80%) had a mild level of anxiety ,and only (4%) had moderate and severe levels of anxiety thus indicates there was obvious decrease in anxiety level for the study group after giving nursing instruction.

Table (4): Shows percentage distribution of the studied patients undergoing transurethral resection of prostate (TURP) regarding post resectoscope complication and their mean score among the studied groups. A statistically significant difference was observed related to items of (hematuria , urinary incontinence and dysuria) as (**p** = 0.034 , 0.017 , 0.049) respectively , while there was no statistically significant difference related to UTI, urinary retention and weak urine stream as (**p** =0.490, 1.000, 1.000) respectively. Additionally, it showed a very statistically significant difference between the two groups under study in total risk for complication score in the follow up period for 2 months as (**p** <0.001).

Table (5): Displays percentage distribution of the studied patients undergoing transurethral resection of prostate (TURP). Regarding their total quality of life level among the studied groups. It was noticed that there was a highly statistically significant difference between the two groups as (**p** = 0.000).

Figure (3): Illustrates total quality of life level among the studied groups according to WHO quality of life questionnaire. It exhibited that (92%) of the control group had low quality of life and (8%) of the control group had moderate quality of life, while (80%) of the study group had moderate quality of life and only (20%) of the study group had low quality of life .

Table (6): Shows Correlation between knowledge with different tools in each group .It clarifies that a negative statistically significant association was found between knowledge of studied groups and their level of Anxiety (**P** <0.001). It also indicated that the quality of life score and the overall knowledge score of the patients undergoing transurethral resection of the prostate are positively statistically significantly correlated (**P**<0.05). It also shows that there is a negative correlation between total knowledge score of the studied patients undergoing transurethral resection of

prostate and their pain severity and intensity and there is a negative statistically significant correlation between total knowledge score of the study group and their pain severity and intensity immediately after the procedure (**P**<0.05). It also revealed that there is a negative statistical significant correlation between total knowledge score of the studied patients undergoing transurethral resection of prostate and their mean risk of complications score.

Table (1): Distribution of the studied patients undergoing transurethral resection of prostate (TURP) regarding their socio-demographic characteristics.

Characteristics	The studied patients (n=50)				χ^2 P
	Control group (n=25)		Intervention group (n=25)		
	N	%	N	%	
Age (in years)					
(50-<55)	7	28.0	6	24.0	FE
(56-59)	18	72.0	19	76.0	1.00
Range	**(51-59)**		**(51-59)**		t=0.058
Mean ± SD	**56.00±2.291**		**55.96±2.590**		P=0.954
Marital status					
Married	19	76.0	25	100.0	
Divorced	2	8.0	0	0.0	2.139
Widow	4	16.0	0	0.0	0.655
Level of Education					
Illiterate	3	12.0	5	20.0	
Read and write	5	20.0	3	12.0	
Basic education	3	12.0	6	24.0	3.342
Diploma	6	24.0	3	12.0	0.647
Secondary education	3	12.0	2	8.0	
University education	5	20.0	6	24.0	
Occupation					
Manual works	10	40.0	8	32.0	
Employee	3	12.0	3	12.0	0.918
Farmer	6	24.0	9	36.0	0.821
Other	6	24.0	5	20.0	
Residence					
Rural	16	64.0	21	84.0	FE
Urban	9	36.0	4	16.0	0.196

FE: Fisher' Exact test

Table (2): Assessment of total knowledge level of the studied patient regarding transurethral resection of prostate (TURP) among the studied groups.

Total knowledge level	The studied patients (n=50)						Test of Sig. (p_1)
	Control Group(n=25)		Study group (n=25)				
			Pre instruction		Post instruction		
	No.	%	No.	%	No.	%	
Low	19	76.0	19	76.0	0	0.0	2.046 (^{MC}p= 0.504)
Moderate	6	24.0	4	16.0	0	0.0	
High	0	0.0	2	8.0	25	100.0	
p_0			<0.001*				
Range	10.0 – 30.0		12.0 – 36.0		42.0 – 44.0		t=0.760 (0.451)
Mean ± SD.	18.44 ± 5.90		19.72 ± 6.00		43.92 ± 0.40		
t_0 (p_0)			19.480* (<0.001*)				

IQR: **Inter quartile range** SD: **Standard deviation** **t: Student t-test**
χ^2: **Chi square test** **MC: Monte Carlo test**
p_0: p value for comparing between study group Pre and **Post instruction**
p_1: p value for comparing between **control and** study group Pre **instruction**
* Significant at level P<0.05
(<50%) Low (50-75)% Moderate (>75%) High

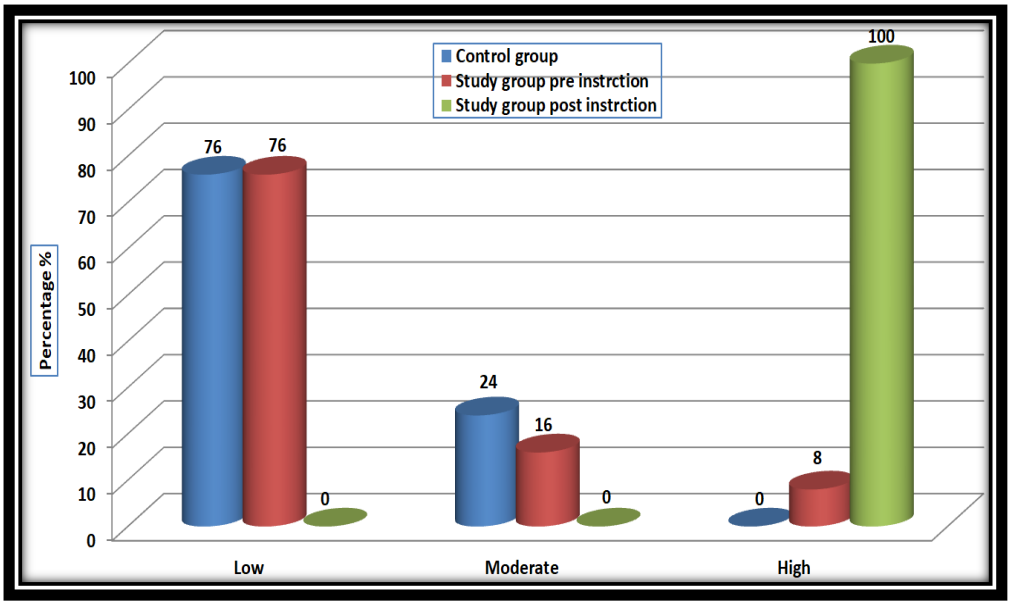

Figure (1): Assessment of total knowledge level of the studied patient regarding transurethral resection of prostate (TURP) among the studied groups.

Table (3): Assessment of pain severity of the studied patients undergoing transurethral resection of prostate (TURP) using numerical rating scale (NRS) among the studied groups.

Items	The studied patients (n = 50)								Test of Sig. (p_1)	Test of Sig. (p_2)
	Control group				Study group					
	Immediate		Post 1 week		Immediate		Post 1 week			
	N	%	N	%	N	%	N	%		
Pain Location										
Perineum	7	28.0	0	0.0	5	20.0	0	0.0	χ^2=0.791 (0.673)	–
Suprapubic	8	32.0	0	0.0	7	28.0	0	0.0		
Tip of penis	10	40.0	25	100.0	13	52.0	25	100.0		
Pain radiation										
Lower back	5	20.0	0	0.0	4	16.0	0	0.0	χ^2=0.533 (^{MC}p=0.822)	–
None	17	68.0	25	100.0	19	76.0	25	100.0		
Thigh	3	12.0	0	0.0	2	8.0	0	0.0		
Severity and intensity										
Range	3.0 – 7.0		2.0 – 4.0		2.0 – 7.0		1.0 – 3.0		t=3.418*	t=5.232*
Mean ± SD.	5.64 ± 1.04		3.04 ± 0.68		4.56 ± 1.19		2.04 ± 0.68		(0.001*)	(<0.001*)
Quality of pain										
Burning	10	40.0	25	100.0	13	52.0	25	100.0	χ^2=1.464 (^{MC}p=0.718)	–
Aching	2	8.0	0	0.0	3	12.0	0	0.0		
Cramping	8	32.0	0	0.0	6	24.0	0	0.0		
Pressing	5	20.0	0	0.0	3	12.0	0	0.0		
Timing (in minutes)										
Range	5.0 – 15.0		2.0 – 5.0		3.0 – 10.0		2.0 – 5.0		t=3.233*	t=0.927
Mean ± SD	10.0 ± 4.08		4.32 ± 1.14		6.84 ± 2.69		4.0 ± 1.29		(0.002*)	(0.358)
Precipitating factors										
Activity and straining	8	32.0	0	0.0	7	28.0	0	0.0	χ^2=0.325 (0.850)	χ^2=1.951 (^{MC}p=0.497)
Bladder filling,	7	28.0	0	0.0	6	24.0	0	0.0		
coughing and sneezing	10	40.0	25	100.0	12	48.0	23	92.0		
Urination	0	0.0	0	0.0	0	0.0	1	4.0		
Low volume of liquids	0	0.0	0	0.0	0	0.0	1	4.0		
Movement										
	25	100.0	0	0.0	25	100.0	0	0.0		

SD: **Standard deviation** **t: Student t-test**

χ^2: **Chi square test** **MC: Monte Carlo test**

p_1: p value for comparing between **two studied groups (Immediate)**

p_2: p value for comparing between **two studied groups (post a week)**

*: Statistically significant at $p \leq 0.05$

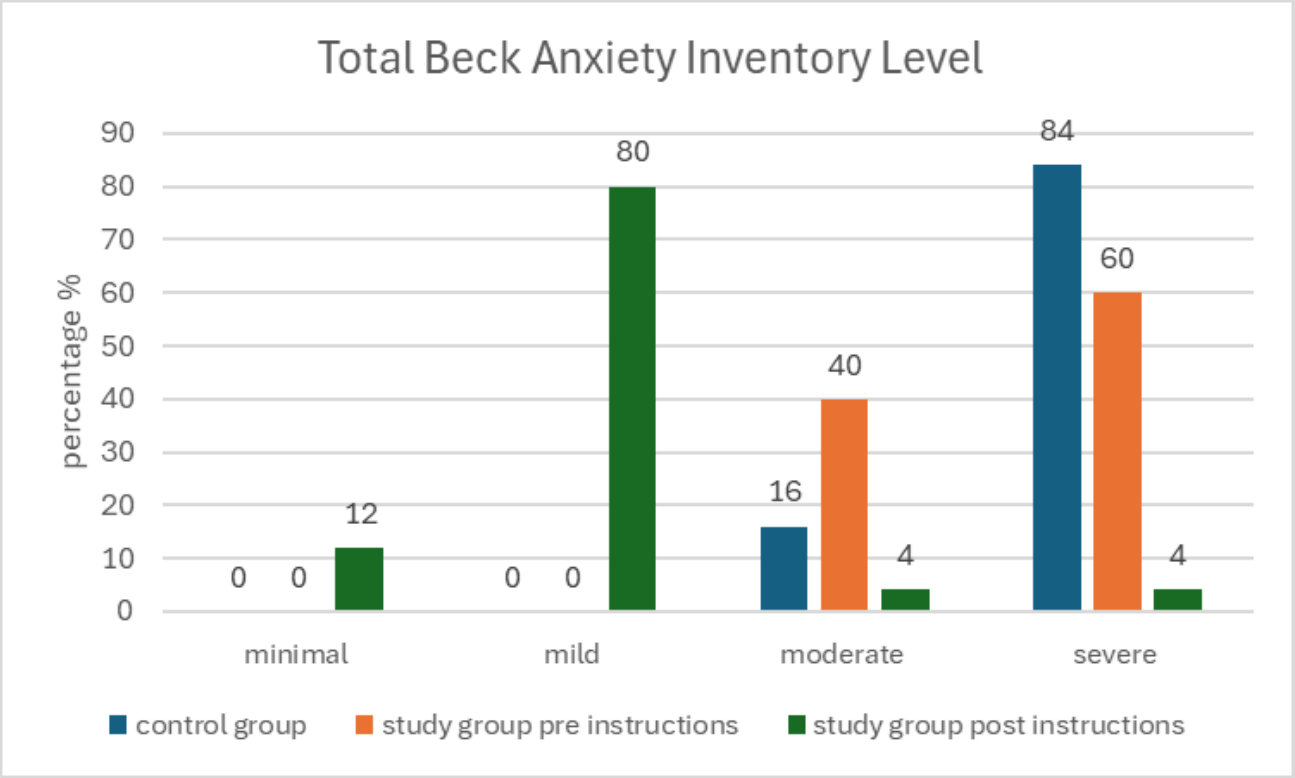

Figure (2): Percentage distribution of the studied patients undergoing transurethral resection of prostate (TURP) according anxiety level among the studied groups.

Table (4): Percentage distribution of the studied patients undergoing transurethral resection of prostate (TURP) regarding post resectscope complication among the studied groups.

Risk	The studied patients (n=50)								χ^2 (p_1)	χ^2 (p_2)
	Control Group (n=25)				Study group (n=25)					
	Immediate		Follow up 2 months		Immediate		Follow up 2 months			
	No.	%	No.	%	No.	%	No.	%		
Hematuria										
Absent	0	0.0	17	68.0	0	0.0	23	92.0	–	4.500* (0.034*)
Present	25	100.0	8	32.0	25	100.0	2	8.0		
Urinary tract infection										
Absent	25	100.0	23	92.0	25	100.0	25	100.0	–	2.083 (FEp=0.490)
Present	0	0.0	2	8.0	0	0.0	0	0.0		
Urinary retention										
Absent	25	100.0	23	92.0	25	100.0	24	96.0	–	0.355 (FEp=1.000)
Present	0	0.0	2	8.0	0	0.0	1	4.0		
Urinary incontinence										
Absent	25	100.0	16	64.0	25	100.0	23	92.0	–	5.711* (0.017*)
Present	0	0.0	9	36.0	0	0.0	2	8.0		
Dysuria										
Absent	0	0.0	18	72.0	0	0.0	24	96.0	–	5.357* (FEp=0.049*)
Present	25	100.0	7	28.0	25	100.0	1	4.0		
Weak urine stream										
Absent	25	100.0	22	88.0	25	100.0	23	92.0	–	0.222 (FEp=1.000)
Present	0	0.0	3	12.0	0	0.0	2	8.0		
Total Risk	**Immediate**		**Follow up 2 months**		**Immediate**		**Follow up 2 months**			
Range	2.0 – 2.0		0.0 – 4.0		2.0 – 2.0		0.0 – 2.0		**t (p_1)**	**t (p_2)**
Mean ± SD	2.0 ± 0.0		1.24 ± 1.05		2.0 ± 0.0		0.32 ± 0.56		–	3.865* (<0.001*)

χ^2: **Chi square test** **FET: Fisher Exact test**

p_1: p value for comparing between **two studied groups (immediate)**

p_2: p value for comparing between **two studied groups (Follow up 2 months)**

* Significant at level P<0.05

Table (5): Percentage distribution of the studied patients undergoing transurethral resection of prostate (TURP) regarding their total quality of life level among the studied groups.

Total quality of life level	The studied patients (n=50)				χ^2 P
	The Control group (n=25)		The Study group (n=25)		
	N	%	N	%	
Low	23	92.0	5	20.0	FE
Moderate	2	8.0	20	80.0	0.000*
Range Mean ± SD	(59-79) 67.80±5.172		(70-103) 85.40±8.327		t=8.978 P=0.000*

(<50%) Low (50-75)% Moderate (>75)% High

* Significant at level P<0.05

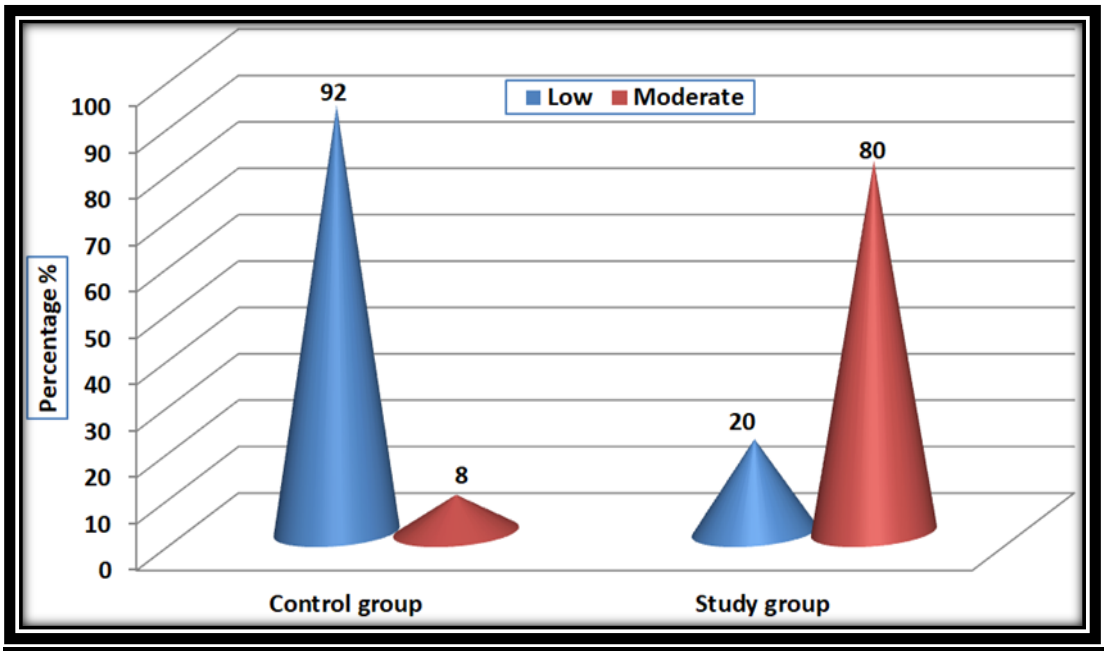

Figure (3): Percentage distribution of the studied patients undergoing transurethral resection of prostate (TURP) regarding their total quality of life level among the studied groups

Table (6): Correlation between Knowledge with different tools in each group

Knowledge vs.	Control (n = 25)		Study (n = 25)			
			Pre instruction		Post instruction	
	r	p	r	r	r	p
Beck anxiety inventory (BAI)	-0.233	0.263	0.011	0.960	-0.726*	<0.001*
Quality of life	0.483*	0.014*	0.107	0.610	0.405*	0.047*
Pain Severity and intensity						
Immediate	-0.307	0.136	0.192	0.359	-0.426*	0.034*
Post a week	-0.381	0.060	-0.100	0.635	-0.296	0.151
Risk of complications	**Control (n = 25)**		**Study (n = 25)**			
	r	**p**	**R**		**p**	
	-0.192	0.357	-0.629*		0.001*	

Discussion:

Transurethral resection of the prostate (TURP) is considered the gold standard treatment for benign prostatic hyperplasia (BPH) (**Chughtai et al., 2016)**. For patients having TURP, health education is important since they have a lot of expectations and worries about their long-term function and results. Positive patient outcomes are a result of effective patient education**.(Mahmoud etal .,2025).**

This study aimed to evaluate the effect of nursing instructions on Clinical Outcomes for Patients Undergoing Transurethral Resection of Prostate (TURP) . In the present study, most patients were between 51 and 59 years old, with a mean age of approximately 56 years for both groups. This reflects an age distribution at a younger spectrum often seen in international TURP series. For example, **Mahamat et al., 2022)** reported a mean age of 66 years (range 50–92), with most patients falling within the 60–69 age group. Similarly, (**Schembri, Attard, Micallef, Mifsud &Busuttil, 2024)** reported average age about 69.5 years, and the most common age group was 60–69 years. Despite these reports, younger patients undergo TURP, particularly when they present with severe lower urinary tract symptoms (LUTS) or when medical management has failed. This agreed with (**khalil, Sayed, Ahmed& Gadelkareem, 2021)**who found that the plurality of the studied patients were between fifty to sixty five years old , also**.(Mahmoud, S., Hasssanin, etal 2025)** who reported that most of the control and the study group ranged between 51% to 60% years old. From the researcher point of view the finding of the current study is due to the inclusion of age group from 40-59 years old , while the disease is more common on older age groups .

Regarding marital Status, the majority of patients in both groups were married . This high prevalence of married individuals is consistent with **(Khalil et al., (2021**)**.** Also supported this high percentage, aligning closely with the current results. This study disagree with**.(Mahmoud, etal., 2025)** who reported that that nearly half of the study and control groups were widowed and**(Mishriki, Grimsley, Lam, , Nabi, & Cohen, 2017)** who reported that more than half of the study and control groups were widowed.

As for educational Level, a heterogeneous distribution of educational levels was found: a notable proportion were illiterate or had only basic education, with fewer holding higher educational degrees. Similar results are reported in literature.(**Khalil *et al.*, 2021)** reported that low literacy and basic education are common in patients undergoing TURP, particularly in public-sector hospitals in developing countries. This come in disagreement with **(Zheng et al.,2022**) who found that more than one quarter of BPH patients were high school graduates. From the researcher opinion, this could be the result of social or cultural

variations in how different communities learn.

Regarding occupation, a substantial portion of patients were engaged in manual labor and farming, with lower proportions employed in non-manual professions. This is agreed with (**Afenigus et al.,2024)** which reported that a great percentage of patients undergoing TURP were farmers, with most others involved in manual or informal work**. (Khalil *et al.*, 2021)** also reported similar occupational distributions.

Also, we can see that most of the participants resided in rural areas , this is agreed with (**Afenigus et al., 2024)** which found around eighty percentage of TURP patients come from rural backgrounds. From the researcher mind, factors such as delayed presentation, limited awareness, and reduced access to early urological services are thought to explain this trend.

Regarding the knowledge of patients undergoing transurethral resection of the prostate , evaluated before and after the implementation of nursing instructions. The findings show that in the Pre-instruction phase, both study and control groups exhibited limited knowledge regarding TURP. In the post-instruction phase, there was a clear statistically significant improvement in the study group's knowledge across all measured domains after receiving structured nursing instructions. highlighting the specific impact of targeted education.

(Khalil et al., 2021) reported similar findings, demonstrating that patients who received structured preoperative nursing instructions showed a significant improvement in knowledge, while controls did not. The authors recommend routine use of preoperative nursing education for all TURP patients. Another study by **(Mahmoud, etal., 2025)** demonstrated a notable increase in the study's overall knowledge level compared to the control group following educational instructions.

This is also supported by the findings of (**Subrata ,2020)** who discovered that the total knowledge score before and after attending TURP surgery education programs differed statistically significantly.

From the researcher's view point regarding how structured nursing instructions impact patient's knowledge when undergoing TURP, all knowledge domains showed statistically significant improvement in the study group post-instruction compared to both their baseline and to a control group, indicating the direct and robust effect of targeted nursing education on patient preparedness and self-care ability.

Regarding the pain experiences of patients undergoing TURP, using the Numerical Rating Scale . Immediately after surgery, most patients experienced mild to severe burning pain, primarily at the tip of the penis, often precipitated by urination and physical activity, but this pain significantly decreased by one-week

post-procedure and was typically relieved by rest and analgesics. One relevant study by (**Köse et al., 2013)** proved that the use of a local anesthetic agent in the irrigation fluid after TURP significantly reduced postoperative pain scores, underscoring the relevance of adequate postoperative pain management.

The current study revealed that there is an extremely statistical significant difference related to pain severity and relieving factors between the two groups immediately post procedure and post one week as P value = 0.001.This finding agreed with **(Aloweni, Li, Tesalona & Salleh,2008)** who reported that Patients who received pre-operation education reported a faster decrease in post-operative pain and expressed greater satisfaction with the treatment and reduced anxiety. Another study by **(Vigneswaran et al, 2021)** performed painless nursing using mind maps for patients undergoing TURP. It was found that this nursing approach might successfully lessen the need for analgesics and relieve patient's discomfort. This is inconsistent with **(Robinson, Hepburn, Turner & Zarrabi, (2022)** who used the clinical nursing pathway to help patients following TURP; no discernible difference between the clinical nursing approach and the standard nursing strategy was seen in postoperative pain levels or nursing satisfaction.

From the researcher estimation ,the pain is subjective experience which can be affected by biological ,psychological and social status , social and environmental status .The study group experienced lower levels of stress and anxiety , had sufficient knowledge about strategies to cope up with pain and good expectation about the operative outcomes, all of this could contribute to the decreased pain severity .

Regarding physical and psychological anxiety symptoms via the Beck Anxiety Inventory before and after nursing intervention. The findings show a statistically significant reduction in symptoms in the intervention group post-instruction. It was found that plurality of the control group and two third of the study group had a severe level of anxiety , while after giving nursing instruction, most of the study group had a mild level of anxiety and only four percentage had moderate and severe levels of anxiety.

The finding of the current study is consistent with**(Li etal., 2021**) who reported that personalized education combined with shared valuable physiological and psychological experience and expectations coping with BPH may more effectively lower perioperative anxiety in BPH patients. Also a study by(**Beiramijam, Anoosheh & Mohammadi, 2013).** reported that the tension and anxiety levels of BPH patients after TURP surgery are considerably decreased by

a well-designed instructional program on self-care.

Regarding complications following transurethral resection of the prostate. The key findings show ,hematuria was present in all patients immediately post-procedure, this finding is conforming to (**Carnevale, *et al*,. 2015)** who reported that in the first two weeks after the procedure, hematuria was noted in every patient in the TURP group.

Also**, (Kusljic, Aneja &Manias 2017)** and **(Basirun, 2024)** reported haematuria with the majority of the patients post operatively.

In the follow up for 2 months hematuria persisted in 32% of the control group versus only 8% in the study group , a statistically significant difference (P=0.034). From the researcher opinion, this statistically significant difference may be due to the compliance of the study group with the instructions provided by the researcher . This in line with a study by(**Beyramijam, Anoosheh & Mohammadi, 2014)** ,which demonstrated that education could lower the experimental group's gross hematuria level, also (**Khalil et al., (2021)** supported this finding .

Regarding Urinary incontinence (UI) was significantly higher in the control group 32% compared to the study group 8% at 2 months. From the researcher standpoint, this significant difference may be due to the adherence of the study group to the guidelines provided by the researcher as the implementation of pelvic floor muscle strengthening exercises and bladder and urinary urgency control trainings. This finding agreed with **(Mahmoud et al., 2025)** who declared that a nurse-led educational intervention effectively prevented urinary incontinence incidence in the study group compared to the control group .Also **(Guo B., 2025)** stated that post-nursing intervention could decrease the incidence, volume, and frequency of postoperative UI**.** Similar percentage was reported in (**Khalil et al., 2021)** for study group which reported 5% , but much higher percentages were reported in (**He, Mao, Shu, & Liu, 2025).** (36.4%) and (**Rassweiler, Teber, Kuntz, Hofmann, 2006) (**30 %- 40%).

Regarding dysuria was noted in all patients immediately after procedure, this finding is consistent with (**Carnevale, *et al*,. 2015)**who mentioned the same finding. Dysuria persisted in 28% of the control group and only 4% of the study group at two months follow up , again showing significant improvement with nursing instructions. This finding come in line with (**Beyramijam etal ., 2014)** who found the suggested self-care approach can greatly lower the risks of TURP surgery including dysuria.

Regarding total quality of life, there was a clear advantage in total quality of life (QOL) for the study group versus the control group. According to the WHOQOL-BREF scale, most of the study group had moderate QOL and only 20% had low QOL, while in the control group, the majority had

low QOL and only 8% achieved moderate QOL. From the researcher judgment, these results highlight the effectiveness of structured nursing education and guidance in enhancing not just health status, but total life satisfaction and adaptability after TURP. This is agreed with (**Mahmoud et al., 2025)** who maintained that the trial group's patients had a higher life quality than those in the control group.

Regarding correlation between patients' knowledge scores and their anxiety levels, the results show a strong negative correlation between patients' knowledge scores and their anxiety levels in the study group after receiving nursing instructions ($R = -0.726$, $p < 0.001$. This suggests that structured education significantly reduces anxiety in patients undergoing TURP. A study by **(Li et al., 2021)** discovered that BPH patients may have less preoperative anxiety when personalized instruction is combined with common physiological and psychological experiences and expectations**.**

Regarding correlation between total knowledge scores and pain severity, the results show a negative correlation between total knowledge scores and pain severity and intensity in the study group immediately post-procedure ($r=-0.426, p=0.034$), though not at later follow-up. In the control group, no statistically significant association was found.

A study by (**Darville-Beneby et al., 2023)** reported that preoperative patient education programs show promise for enhancing pain scores and other postoperative outcomes for patients undergoing elective surgery.

Regarding correlation between knowledge and the mean risk of complications score, the results demonstrate a statistically significant negative correlation between knowledge and the mean risk of complications score in the study group ($r=-0.629, p=0.001$), but not in controls. This indicates that better-informed patients face fewer complications following TURP. This is agreed with (**Khalil et al., (2021)** who revealed a negative relationship between the study group's postoperative complications and total knowledge score on the post-test ($P = 0.001$ and $r = -0.720$), meaning that as patient knowledge rises, postoperative complications following TURP fall.

Conclusion:

The results of this study indicate that: The nursing guidelines improved clinical outcomes, patient knowledge, and quality of life for patients having Transurethral Resection of Prostate.

Recommendation: Based on the results of the current investigation, the following recommendations are made:

Recommendation for patients:

-In the urological department , an educational instructions should be given for all patient undergoing Transurethral resection of the prostate

(TURP) with various educational materials and strategies

Recommendations for further research studies:

- It is necessary to repeat the current study with a bigger patient sample in various contexts in order to generalize the findings.
- Additional research is required to extend the follow-up period for patients who have undergone transurethral resection of the prostate.

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