

Precise Nursing Service Mode: The Golden Technique on Health Condition and Body Image among Middle-Aged and Elderly Patients with Prostate Cancer

Eman Fathy Amr ¹, Safia Gomaa Mohammed ², Heba Kedees Marzouk ³, Sabah Abdou Aly Hagrass ⁽⁴⁾, Shima Hassan Abd El-Fatah ⁵, Gehan Abed Elfattah Atia ^(6,7)

1 Assistant Professor, Medical-Surgical Nursing, Faculty of Nursing, Beni Suef University, Egypt.

2 Lecturer, Gerontological Nursing Department, Faculty of Nursing, Zagazig University, Egypt.

3 Assistant Professor, Psychiatric Mental Health Nursing Faculty of Nursing Assiut University.

4 Assistant Professor, Community Health Nursing Department, Faculty of Nursing, Zagazig University, Egypt.

5 Assistant Professor, Geriatric Nursing, Faculty of Nursing, Sohag University, Egypt.

6 Assistant Professor, Medical-Surgical Nursing Department, Faculty of Nursing, Menoufia University, Egypt.

(7) Assistant Professor, Medical-Surgical Nursing Department, Faculty of Nursing, Jouf University, Sakaka, Jouf, Saudi Arabia.

Abstract

Background: Prostate cancer is a prevalent cancer with significant morbidity and mortality rates; therefore, the patient needs precise nursing service mode to improve physical and psychological health outcomes. **Aim:** this study aimed to appraise the effect of precise nursing service mode on health condition and body image among middle-aged and elderly patients with prostate cancer. **Subjects and Methods:** A quasi-experimental study design was conducted using the purposive sampling method on 80 male patients (40 patients in each group) from prostate cancer male patients referred to the **study setting** in the oncology department and outpatient clinic at Zagazig University hospitals. **Tools: three tools were used, I:** A structured- interview questionnaire to collect the necessary basic data. **(II):** Expanded Prostate Cancer Index Composite Short Form; and **(III):** Body image scale. **Results:** The total mean EPICE 26 scores in the intervention and control groups before the precise nursing service mode were 44.39 ± 19.27 & 42.85 ± 22.18 respectively which reached to $(59.29 \pm 18.23, 68.43 \pm 16.75)$, $(49.33 \pm 16.05, 56.56 \pm 15.98)$ after intervention at 1 and 3 months respectively. Moreover, the mean body image scores for the intervention and control groups before the intervention were not statistically significant. However, after the implementation of the intervention, this difference became significant at 1 and 3 months. **Conclusion:** the technique of precise nursing service mode effectively improved health condition and reduced the incidence of severe complications, anxiety, and depression among the studied prostate cancer patients. **Recommendations:** This precise nursing service mode is recommended for use by trained healthcare integrated nurses' team specialists for prostate cancer patients.

Keywords: Precise nursing service mode, Prostate Cancer, health condition, body image, middle-aged patients, & elderly patients.

Introduction:

The cancer that occurs most frequently in men and the second largest contributor to cancer-related mortality in men is prostate cancer. Prostate cancer risk is significantly increased in those over 50. It typically has a slow although progressive clinical course, peaking between 60 and 70 years of age. Almost 70% of accidental deaths from prostate cancer occur among those over 75 years old. Patients are frequently

diagnosed at a time when patients harder to tolerate the complications associated with their disease. Particularly affecting the anatomical region involved in sexual function. A variety of challenges are frequently faced by the patient, which can lower their quality of life and raise stress and anxiety levels (Abd-Almonaem et al., 2021 & Parthipan et al., 2024).

Prostate cancer is difficult to pinpoint its precise cause. Growing older, having a favorable

family history, and being a different race are thought to be the main risk factors that influence a person's likelihood of getting prostate cancer. Smoking, obesity, and diet are examples of other risk factors that may be connected to the disease's etiology. Early diagnosis of the condition can help lower the disease's mortality rate in men who do not exhibit symptoms and present a chance to develop a low-cost, efficient treatment option for patients (El Mezayen et al., 2022).

Prostate cancer usually doesn't cause any symptoms until it progressed and starts to show signs, like benign prostatic hyperplasia. Urgency, frequency, dysuria, impaired renal function, impotence, and signs of metastatic disease affecting the bones, lymph nodes, rectum, and neurological system are some of the symptoms that may be present with the condition. Prostate-specific antigen has a higher positive predictive value (PPV) than digital rectal examination (DRE), despite being an essential component of prostate cancer screening. DRE may, nevertheless, have a reduced PPV while maintaining a high level of clinical utility, particularly in the detection of advanced-stage illnesses. When prostate cancer has developed to a more advanced and palpable level, DRE can be useful in identifying it (Ezeama, & Enwereji, 2023).

Radical prostatectomy is the main therapeutic option for localized prostate cancer. Unfortunately, a significant percentage of men may have persistent problems following surgery. Prostate cancer patients' quality of life is correlated with their body image. Prostate cancer patients can have a range of physical changes throughout therapy that can affect how they feel about their bodies. These changes can include decreased penile length, decreased mass of lean muscles, and higher levels of fat in the body (Mainwaring et al., 2021 & Taleb et al., 2023).

A crucial component of all-encompassing nursing treatments is postoperative complication nursing. Patients and their families must participate in this process, which includes postural care, pelvic floor muscle training to prevent postoperative urinary incontinence, lower extremity massage to prevent venous thrombosis, turning over to prevent pressure

sores, and airway clearance to prevent respiratory infection (Feng et al., 2020).

A unique approach to nursing, precise nursing service mode bases patient-centered care on their requirements rather than the integrated healthcare nursing staff imposing care on them. As a result, this intervention provides the appropriate care to the appropriate patient at the appropriate time. While lowering problems, comprehensive precision nursing care increases patients' conditions, general quality of life, and compliance (Zheng et al., 2022).

Significant of the study:

Globally, prostate cancer is the second most common cancer in men, with 1.4 million new cases (7.3%), and the fifth most common cause of cancer-related death among them, with 375,000 deaths (3.8%) in 2020. The incidence rates per 100,000 population of prostate cancer ranks second among all cancers in men worldwide, accounting for 1.4 million new cases (7.3%), and 375,000 deaths (3.8%) from cancer-related causes in males in 2020. According to the National Population-Based Registry Programme of Egypt 2008–2011, the incidence rates of prostate cancer in men in Lower, Middle, and Upper Egypt were 4.84%, 2.66%, and 5.92%, respectively, per 100,000 people. The reported incidence rate of prostate cancer across all locations was 4.27%. According to GLOBOCAN 2020, there were 2227 deaths and 4767 new cases of prostate cancer in Egypt (Elsisi et al., 2023).

Body image and self-esteem might be impacted by prostate cancer and its therapies. Targeted nursing interventions by the healthcare team can therefore assist in finding resources to help and cope with issues related to self-esteem and body image (Canadian Cancer Society, 2021). These interventions may also lessen the incidence and/or severity of predicted impairments, resulting in decreased surgical complications and diminished hospitalizations or readmissions. In addition, the precise nursing service mode is a multimodal, multidisciplinary approach that offers support, treatment, and assessment tailored to each patient's needs. This can lead to better outcomes in terms of physical and mental health as well as quality of life. This

improvement is made possible by lowering the patient's level of impairment and enhancing their ability to take part in activities and enjoy with their time, improve their health and quality of life (Rodrigues et al., 2022).

In Egypt, there are few studies on the precise nursing service mode. Consequently, this study designed to appraise the effect of a more comprehensive integrated healthcare team precise nursing service mode approach to help male patients with prostate cancer.

Aim of the study:

To appraise the effect of precise nursing service mode on health condition and body image among middle-aged and elderly patients with prostate cancer.

Research hypothesis:

H (1). A precise nursing service mode will improve health, urinary condition, and body image among patients with prostate cancer.

H (2). A precise nursing service mode will decrease the degree of complications and the danger of anxiety, and depression in patients with prostate cancer.

Materials and subjects:

Research Design: To achieve the study's goal, a quasi-experimental research design including (two groups' pre-test & post-test the control and the intervention) was implemented.

Research Setting: This study was conducted at the oncology department and outpatient clinic affiliated with Zagazig University Hospitals, Egypt.

Study Sample: the researchers chose patients who met the following inclusion criteria, a purposive sample of 80 male patients (40 patients in each group) with prostate cancer who present in the above-mentioned setting. The sample size was selected according following equation (Gravetter et al., 2020).

N = required sample size

t = confidence level at 95 % (standard value of 1.980)

p = estimated prevalence of oncology department at Zagazig University Hospitals 2023 (0.05)

m = margin of error at 5 %

$N = t^2 \times p(1-p)$

M^2

$N = (1.98)^2 \times 0.05(1-0.05)$

$(0.05)^2$

$N = 74.5$ increase to 80 patients to avoid any drop out or any withdrawal.

Inclusion criteria:

➤ Middle-aged (48 years and above) and elderly male patients (from 60 years and above) had prostate cancer.

➤ Patients underwent radical prostatectomy.

➤ The patient has clear consciousness and certain reading, understanding, and communication abilities.

Exclusion criteria:

▪ The patients with tumor metastasis, coagulation dysfunction, or cognitive dysfunction.

▪ The patients participated in another educational program.

• Patients had a Gleason score of 8 or higher.

Study Tools:

The researchers used the following three tools to gather the study data:

Tool I: A structured interview questionnaire, which was developed in Arabic following a thorough literature analysis and consists of the following two parts:

Part (1): Socio-demographic characteristics of the studied patients with prostate cancer: It was composed of items such

as age, residence, marital status, education level, income, and occupation.

Part II: clinical data collection, questions were asked on medical history of diseases, BMI, exercise history, smoking history of cancer, and onset of diagnosis., family history of cancer, and Charles commodity index,

Tool (II): Expanded Prostate Cancer Index Composite Short Form (EPIC-26), which was derived from **Szymanski et al. (2010)**. It is made up of five domains and is intended to measure the degree of complications and sense of burden in patients with prostate cancer throughout the previous four weeks. (I). Incontinence subscale contains (4 items) such as (leaking more than once day, frequent dribbling, using any pad, and leaking problem) II. (Urinary irritative/obstructive contains (4 items) (e.g. dysuria, hematuria, weak stream and frequency and & overall urinary problem contain (1 item) III. Bowel contains has six items) (urgency, frequency, fecal incontinence, bloody stools, rectal pain & overall bowel problem), IV. Six items for Sexual contains such as (poor erections, difficulty with orgasm, erections not firm, erections not reliable, poor sexual function & overall sexuality problem, and V. five items for Hormonal (hot flashes, breast problems, depression, lack of energy & weight change). Scoring system: Response options for each EPIC item range from 0 to 4 on a Likert scale and multi-item scale scores are converted linearly to a 0-100 scale, with higher scores denote better health conditions.

Level	Score
Poor	<50
Moderate	50-<75
High	>75

Tool (III): The body image scale (BIS) was established for monitoring how cancer patients' perceptions of their bodies changed. It was adapted by **Hopwood et al., (2001)** & developed and translated into Arabic by **Atia & Soliman (2018)**. It contained ten items, including feeling less physically attractive, feeling that the body is becoming softer and flabby, losing maleness, being unhappy with appearance, losing muscle tone, being unhappy with a scar, avoiding people, feeling that the

body is less whole, and being unhappy with the body.

Scoring system: Four possible answers range from 0 to 3 on the scale (not at all, a little, quite a little, and very much, respectively). Higher scores indicate a greater degree of negative body image change or dissatisfaction. Total scores are determined by summing the values collected on each item, resulting in a possible range of scores from 0 to 30. According to **Hopwood et al. (2001)**, a higher score denotes higher levels of BI dissatisfaction, and according to **Chopra et al. (2021)** a score of 10 or higher indicates dissatisfaction with BI. According to **Rhondali et al. (2015)**, a score of ≥ 10 on the BI is equivalent to the cut-off point of the Generalized Anxiety Disorder Scale (GAD, ≥ 10) and the Patient Health Questionnaire (≥ 10). These scores can also be used to predict moderate depression and moderate anxiety.

Methods:

1. the study's goal was explained after , an official approval from Zagazig University Faculty of Nursing, was, and sent to the directors of Zagazig University Hospitals and the director of outpatient clinics to granting permission to visit the clinics and perform the study.

2. The patients give their verbal consent. The researchers were complete the questionnaire as patient respond and encourage them to take part in, and encouraged to express their feelings.

3. The patients' complete right to draw from the study at any point during the study, as was strictly confidentiality of all data obtained and its exclusive use for scientific purposes.

4. The researchers make tool I based on recent literature, they also translated tool II into Arabic. A panel of seven experts in related fields (geriatric nursing, medical and surgical nursing, psychiatric nursing, and community health nursing) from Sohag, Beni Suef, Zagazig, and Assiut Universities evaluated the content validity of the Arabic versions of all these tools. After making required modifications and then the final fieldwork schedule was set.

5. Utilizing Cornbrash's alpha test, we evaluated 10 patients with prostate cancer to determine the internal consistency of these tools. Tool II (EPIC-26) had reliability was 0.856, whereas tool III (BIS) was 0.84.

6. A pilot study was carried out to evaluate the applicability of the tools. The

feasibility of the research and approximate the time required for gathering data. It was carried out on (10.0%) or 8 patients. Analysis of the pilot study results indicated that only small modifications are needed. After these modifications were made, and all of the patients who were part of the pilot study were included in the main sample.

Fieldwork:

After receiving permissions from necessary to carry out the suggested study. After the researchers visit the patient to show goal of the study and its steps, each patient give oral consent. The researchers start data gathering. The researchers interviewed with each patient during the participants' visits to the setting at 3 days a week from 9 a.m. to 2 p.m. The time taken for each questionnaire to be completed was between 40 to 50 min for each. The fieldwork take place between the beginnings of January 2024 to the end of June 2024 for total six months. Data was gathered first from the control group who received routine care then the study group who received routine care in addition precise nursing service mode. Four successive phases were used to conduct this study: interviewing and assessment, planning, implementation, and follow up & evaluation phase.

1. Interview and Assessment Phase:

The researchers give brief explanation of purpose and methods of the study to the patients with prostate cancer after introducing themselves. Patients in intervention and control groups who met inclusion criteria were given detail explanation by researchers. The researchers illuminated the substances of the study to the patients who provided consent and decided to participate and calmed them that the data acquired was firmly confidential and would utilized for only research. Then, using a random number of rooms, they are allocated to the intervention and a control groups using a random number of rooms. They underwent individual interviews at room of the patient at oncology department with the researchers utilizing tools I: III to gather baseline data, evaluate health status, and measure body image (pretest). Depending on how understanding the interviewers were, the interview lasted between forty and fifty minutes. All patients' phone numbers were gathered in order to make schedule the program's sessions and subsequent visits. This phase lasts for three

months, from the beginning of January 2024 until the end of March.

2. Planning:

Priorities needs were developed according to findings of the assessment phase results for the intervention group, and the contents were arranged in a practical learning sequence (from simple to complex) to improve patients' comprehension. A health education colored illustrative booklet was established in simple Arabic language to be distributed to each patient of the study group and included the following information: Simple anatomy and physiology of the prostate gland, the definition, causes and risk factors of cancer prostate, information regarding radical prostatectomy surgery, pre-operative exercise, post-operative exercise, nutrition, , and behavior therapy which includes deep breathing exercises, coping skills, stress management, and relaxation as well as basic anatomy and physiology of the prostate gland are all covered. The only way psychological help was given was through counseling that prioritized emotional support.

3. Implementation:

The researchers applied the precise nursing service mode for the patients in the study group after obtaining baseline assessment data, face-to-face with patients in the study setting, after discharge through face-to-face follow-up at outpatient clinics, and remote monitoring at home by phone calls. The program is managed on a day-to-day basis by researchers to provide follow-up care and act as the first point of contact for any problems or queries.

Individualized nursing intervention sessions were used as a precise nursing service mode intervention. A handout and additional copies were distributed via WhatsApp to help with the education process for each patient in the intervention group in the previously mentioned setting. Attendance at seven sessions is required, and each session will last for thirty to forty-five minutes. The sessions were administered three times per week for each male in the study group. They were held on Saturday, Monday, and Wednesday. The patient will be asked to bring one of the family members to attend instructions

for follow-up at home. Any clarification needed for the patient was provided by the researchers.

Every session began with a recap of the one before it. All patients received the exact nursing care mode using a variety of teaching techniques, including quick lectures, group discussions, brainstorming, demonstration re-demonstration, and role-play, to guarantee that they were all exposed to the identical learning experience.

PowerPoint presentations, posters, films, brochures, and images were among the instructional materials utilized to convey the theoretical and practical content of the sessions. To improve the learning process, the researchers also created and gave each participant an illustrated handbook. Specially designed tools were employed for the nursing intervention.

In order to improve active participation and promote learning, motivational and reinforcement strategies were employed throughout the session, such as praise and acknowledgment.

General objective of the intervention was to appraise the effect of precise nursing service mode on health condition and body image among middle-aged and elderly patients with prostate cancer.

Session (I): Open conversation about identification, group integration, purpose clarification, and program scheduling permission was the focus of this session.

Session II: Depending on the patients' educational levels, the focus was on theoretical material regarding the anatomy and physiology of the prostate gland, definition, risk factors and indicators, and prostatic cancer treatment.

Session III: Knowledge that is targeted about radical prostatectomy, preoperative instruction, and practical exercises such as (breathing and coughing exercises, and foot exercises to prevent deep venous thrombosis).

Session (IV): Highlighted knowledge about nutrition with practical part on Kegel's exercises, number of repetitions, and bladder training.

Session (V): Discuss realistic goals through instruction, direction, and practical methods to switch negative thoughts with positive ones.

Session (VI): Focused on the use of progressive relaxation techniques, counseling to lessen emotional distress and psychological support about fluctuations in body image, coping with illness and medication side effects, and Stress management techniques.

Session (VII): Review summary of all previous sessions.

Evaluation phase:

This phase emphasized appraising the effectiveness of applying precise nursing service mode on health condition, severity of complications, and risk of anxiety and depression among middle-aged and elderly patients with prostate cancer through a comparison between preprogram, after one month for assessing the improvements in patients' knowledge about prostate cancer (outcome), and three months to assess the retention of the gained improvements (impact) from applying precise nursing service mode.

Ethical considerations:

The following were some of the ethical research considerations in this study:

The Research Ethics Committees of the Faculty of Nursing, Zagazig University, Egypt, accepted the study protocol (Ethical code: 0096). Following official authorization, the study adhered to accepted clinical research ethics. The research subject was not at risk while it was being applied. Patients were asked to provide oral consent or guidance indicating their willingness to participate in the study after being informed about its nature and objectives. Anonymity and confidentiality were guaranteed. A participant was informed that they could withdraw from the study at any time and given the option to decline participation.

Statistical Analysis:

The Statistical Package for Social Sciences, version 22, was used to score, tabulate,

and analyzes the data that had been gathered (SPSS Inc., and Chicago, IL). Real numbers and percentages are used to display the gathered data in tables and graphs. Data were analyzed using appropriate statistical procedures, such as the independent sample t-test and the chi-square test (X2). A significance threshold of $p < 0.05$ and a high threshold of $p < 0.001$ were established.

Results:

Table (1): reveals that 60.0% of the intervention group aged between 60 and less than 70 years with a Mean \pm SD 66.27 \pm 7.24 years compared with 35.0% with a Mean \pm SD 63 \pm 9.34 years of the control group. Regarding the education level, it was revealed that (45.0% & 55.0 %) in intervention and control groups had secondary education, respectively. A high percentage of the studied samples were married, did not work, lived in urban areas, and had insufficient income. Moreover, there were no significant differences between the intervention and control groups about personal characteristics.

Table (2): reveals that cardiovascular disease is the most frequent disease among the studied samples. With regard to Charlson comorbidity index, 62.5% of the intervention group had mild Charlson comorbidity index compared with 52.5% of the control group. Regarding body mass index, (35.5%&32.5%) of intervention and control groups were overweighted, respectively. Most of the studied sample had not exercised history. (55.0%&62.5%) of the intervention and control groups had history of smoking. Concerning family history of cancer, 17.5% of the intervention group had a family history of cancer compared with 25.0% of the control group. Moreover, there were no significant differences between the intervention and control groups about medical history.

Table (3): There were no significant differences between the intervention and control groups about all domains of EPIC-26 in the pre-precision nursing service mode, whereas at 1 and 3 months, there were significant differences between the intervention and control groups about all domains of EPIC-26 except sexual and hormonal domains at $p < 0.05^*$.

Figure (1): indicates that there is improvement in health condition among the studied patients in the intervention group; 86.8% had a high level of health condition at three months compared with 15.8% of the control group.

Table (4): presents that there were significant differences between the intervention and control groups about the severity of complications following prostatectomy.

Table (5): shows there were significant differences between pre-and post-intervention programs among the intervention and control groups concerning total body image scores. The mean total score body image between the intervention and control groups beforehand the intervention was not statistically significant. However, after the implementation of the precise nursing service mode, this difference became significant at one month and three months < 0.05 .

Table (6): Reveals that precise nursing service mode and education level are statistically significant negative predictors of depression and anxiety, whereas age and Charlson Comorbidity Index were, statistically significant positive predictors.

Table (1): Distribution of Socio-demographic characteristics of the studied patients with prostate cancer (N=80)

Socio-demographic characteristics	Intervention		Control		P -value
	No (40)	%	No (40)	%	
Age: (years)					.337
▪ < 60	16	40.0	19	47.5	
▪ > 60	24	60.0	21	52.5	
Mean \pm SD	66.27 \pm 7.24		63 \pm 9.34		
Level of Education:					.297
▪ Basic	10	25.0	8	20.0	
▪ Secondary	18	45.0	22	55.0	
▪ High and above	12	30.0	10	25.0	
Marital status:					.690
▪ Married	33	82.5	35	87.5	
▪ Unmarried	7	17.5	5	12.5	
Occupation:					.243
▪ Worked	14	35.0	19	47.5	
▪ Unworked	26	65.0	21	52.5	
Residence:					.457
▪ Urban	20	50.0	24	60.0	
▪ Rural	20	50.0	16	40.0	
Income:					.567
▪ Insufficient	34	85.0	32	80.0	
▪ Sufficient	6	15.0	8	20.0	

Table (2): Distribution of medical history for the studied patients (N=80)

Medical history	Intervention		Control		P -value
	No.	%	No.	%	
1. Medical diseases[#]					.602
▪ No	5	12.5	3	7.5	
▪ Cardiovascular diseases	27	67.5	20	50.0	
▪ Diabetes	25	62.5	23	57.5	
▪ Respiratory diseases	10	25.0	12	30.0	
▪ Renal diseases	15	37.5	6	15.0	
▪ Hepatic diseases	7	17.5	7	17.5	
Charlson Comorbidity Index					.673
▪ None	5	12.5	3	7.5	
▪ (1–2 diseases)	25	62.5	21	52.5	
▪ Moderate (3–4 diseases)	7	17.5	11	27.5	
▪ Severe (\geq 5 diseases)	3	7.5	5	12.5	
BMI (kg/m2):					.763
▪ Underweight	13	32.5	12	15.0	
▪ Normal weight	5	12.5	8	20	
▪ Overweigh	14	35.0	13	32.5	
▪ Obese	8	20.0	7	17.5	
Exercise history:					.370
- Yes	3	7.5	5	12.5	
- No	37	92.5	45	87.5	
Smoking history:					.593
- Yes	22	55.0	25	62.5	
- No	18	45.0	15	37.5	
Family history of cancer:					.243
Yes	7	17.5	10	25.0	
No	33	82.5	30	75.0	
Onset of diagnosis:					.995
< less than one year	7	17.5	10	25.0	
1-3 years	22	55.0	25	62.5	
>3years	11	27.5	5	12.5	

Table (3): Distribution of studied patients about domains of EPIC-26 during phases of precise nursing service mode (N=80)

EPIC-26	Intervention			Control			P -value		
	Preprogram	One month	Three months	Preprogram	One month	Three months	Pre	1 month	3 month
Urinary incontinent	7.21±2.41	9.34±1.41	10.22±2.11	6.78±1.41	7.21±2.23	8.11±0.41	0.971	0.029*	0.02*
Urinary obstructive	4.88±3.9	10.28±3.9	12.88±1.0	5.68±4.92	6.27±2.9	9.31±2.0	0.956	0.05*	0.04*
Overall urinary problems	1.60 ±0.41	2.52±0.94	3.00 ±0.63	1.12 ±0.98	1.95±1.21	2.25±0.71	0.194	0.001*	0.015*
Bowel	12.56±2.9	17.7±4.5	20.0±2.00	12.6±4.89	14.67±2.22	15.0±3.30	0.574	0.01*	0.03*
Sexual	9.37±6.76	10.23±5.49	11.89±7.90	9.37±6.76	10.23±5.49	11.89±7.90	0.125	0.125	0.125
Hormonal	8.77±2.89	9.22±1.99	10.44±3.11	7.3±3.22	9.0±2.0	10.0±1.66	0.22	0.22	0.22
Total	44.39±19.27	59.29±18.23	68.43±16.75	42.85±22.18	49.33±16.05	56.56±15.98	0.656	0.03*	0.027*

*There is a significant difference - Significant at P < 0.05

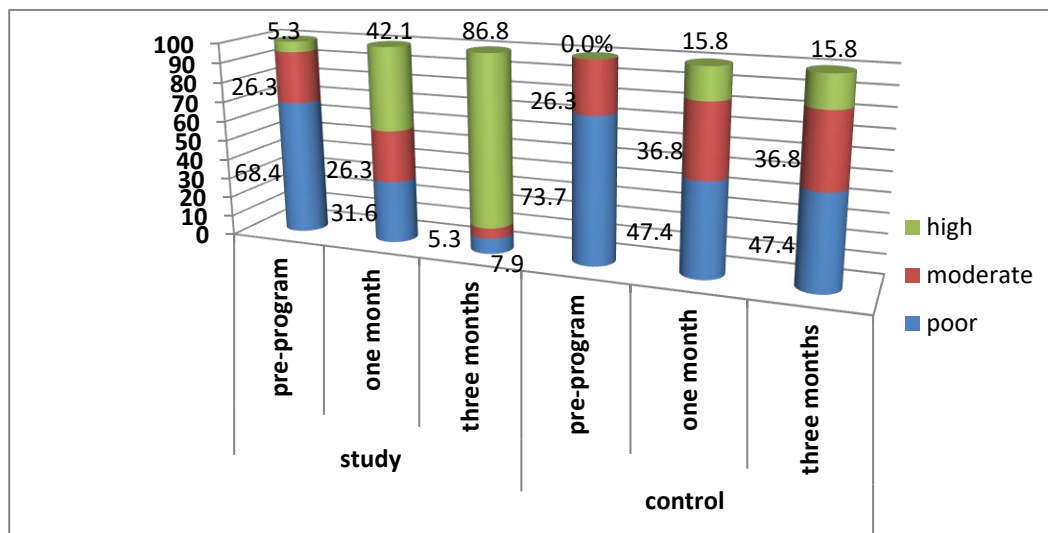


Figure (1): Distribution of studied patients regarding total level of EPIC-26 during phases of precise nursing service mode. N=80)

Table (4): Distribution of postoperative complications for patients after implementing the precise nursing service mode (N=80)

Complications	Intervention group	Control group	P value
Urinary tract infection	1(2.5)	4 (10.0)	0.675
Incision infection	0 (0.0)	2 (5.0)	0.476
Secondary hemorrhage	0 (0.0)	0 (0.0)	1.000
Respiratory infection	1(2.5)	3 (7.5)	0.476
Pressure ulcer	0 (0.0)	1(2.5)	0.867
Deep venous thrombosis	0 (0.0)	1(2.5)	0.867
Overall incidence	2 (5.0)	11 (27.5)	0.018*

*There is a significant difference - Significant at P < 0.05

Table (5): Distribution of body-image body for patients during the phase implementing the precise nursing service mode. (N=80)

Self-image body/phases	intervention		Control		P value
	<10	> 10	<10	> 10	
Pre	5 (12.5)	35 (87.5)	3 (7.5)	37(92.5)	0.394
One month	21 (52.5)	19 (47.5)	11 (27.5)	29 (72.5)	0.04*
Three months	30 (75.0)	10 (25.0)	15 (37.5)	25(62.5)	0.026*

*There is a significant difference - Significant at $P < 0.05$

Table (6): logistic regression study for factors that predict depression and anxiety among the patients with prostate cancer (N=80).

Model	Unstandardized coefficients		standardized coefficients		P value
	B	Std. Error	B	t	
(Constant)					
Age	- 0.446	0.127	0.117	0.050	0.044*
Occupation:	-0.567	0.949	-0.631	0. 454	0.468
Level of education	2.935	1.120	-0.376	-2.621	0.026*
Marital status	0.161	0.843	0.034	0.191	1.000
Charlson Comorbidity Index	-2.953	1.102	0.367	2.612	0.014*
Body mass index (BMI)	0.414	0.630	0.096	0.657	0.170
Onset of diagnosis	-0.892	1.195	-0.114	-0.746	0.14
precise nursing service mode	0.624	0.274	-0.318	-2.272	0.028

* There is a significant difference - Significant at $P < 0.05$ differences

Discussion:

The core of the precision nursing mode is needed in the postoperative care of patients with prostate cancer, where the patient is viewed as the center of attention and the focused nursing plan is implemented after a thorough evaluation of the patient's condition. The exact nursing service mode has been essential in many clinical domains since its inception. In emergency rescue, the precision nursing emergency management system was found to be able to guarantee patient safety, raise the emergency response rate, and raise overall nursing staff standards (Teixeira et al., 2023). This study aimed to appraise the effect of precise nursing service mode on health conditions and body image among middle-aged and elderly patient with prostate cancer.

Regarding age, the existing finding showed that the mean \pm SD of the study group is 66.27 ± 7.24 years old compared with 63 ± 9.34 years old of the control group. This might be due to the growth of undifferentiated cells, which at the start of the disease only made up a small portion of the tumor volume and had time to proliferate. This result harmonized with a study

in Brazil by Mori et al., (2020) done on 17,571 patients and exhibited that the occurrence of prostate cancer is higher among the elderly. Moreover, this outcome is reinforced by a study by Zheng et al., (2022) conducted in China on 130 patients and, revealed that the mean \pm SD of the intervention group was 62.85 ± 11.54 years compared with 63.12 ± 12.05 years of the control group.

Regarding marital status, the present study showed that the highest number of the studied patients had been married. This might be as a result of the demanding experiences they had during their marriage, which could raise the risk of cancer. This finding was congruent with a study performed on 154 participants in Amman by Saleh et al., (2020), who revealed that the most studied patients were married.

Concerning the level of education, this study demonstrated that less than half and more half of the study and control groups had secondary education, respectively. This outcome contradicts the study on 160 employees working in Baghdad by Majeed, & Atiyah, (2021), who showed that less than half of participants in the study group completed a PhD, whereas less than

quarter of individuals in the control group completed a college degree.

With regards to history of smoking, the recent study demonstrated that more than half of the studied sample had a smoking history. This finding may be due to the patient's contact to hazardous products from smoking, which develops cell proliferation in the prostate, which may be linked with malignant transformation. This outcome is consistent with the study conducted in Riyadh by **Arafa et al., (2024)**, who reported that a smoking history is a risk factor for cancer especially prostate cancer among men. In contrast, this result disagrees with a study conducted in Brazil by **Azevedo et al., (2024)**, who showed that the lowest percentage of the patients had a positive a smoking history.

Regards family history of cancer, the existing results displayed that the lowest percentage of the studied patients had a family history of cancer. This finding was confirmed with a study done in Rotterdam on 7052 men through **de Vos et al., (2024)**, who represented that less than one-tenth of the studied sample had a positive family history of cancer. On the other hand, this is dissimilarity with the study in Egypt published by **El Mezayen et al., (2022)**, who showed that family history is a risk factor for prostate cancer. This difference between studies may be due to the small sample size.

Regarding the urinary condition, the present study revealed that in the pre-test, post-test, and follow-up, there was a significant difference between the intervention and control groups for urinary problems at 1 and 3 months. This finding confirmed with the research hypothesis "Precise nursing service mode will improve urinary condition and body image among patients with prostate cancer. This finding was confirmed with the study in Turkey by **Gezginici et al., (2023)**, who showed that, a reduction in urinary problems severity in the study group compared with the control group.

Concerning EPIC domains, the current findings revealed that there was a significant difference between the intervention and control groups in all EPIC domains except sexual and hormonal domains. These results could be

attributed to the precise nursing service mode that increases patients' emotions of self-efficacy and helps them share goals with a nurse in order to better their medical status. As a result of their constantly shifting physical state, many prostate cancer patients experience hopelessness and despair. Urinary incontinence tends to be severe shortly after surgery. The researchers evaluate patients' conditions over the phone and can assess the patient's physical condition objectively.

This outcome is consistent with a study conducted in Japan on 30 patients by **Sato, (2020)**, who found that the nursing program had a significant effect on all EPIC domains except sexual and hormonal domains. In contrast, this finding is contraindicated with a study conducted in Denmark published by **Østergaard et al., (2023)**, who concluded that there was no significant difference between the intervention and control groups regarding EPIC 26 after the nursing program. Besides, this finding differed from study performed by **Taleb et al., (2023)**, who revealed that sexual dysfunctions enhanced post-implementation of nursing intervention program with statistically significant differences. This difference between studies might be because sexual dysfunction requires more time to improve.

With regard to postoperative complications, the current finding demonstrated that there were statistically significant differences between the intervention and control groups regarding postoperative complications. This finding confirmed the second research hypothesis "precise nursing service mode will reduce postoperative complications for patients with prostate cancer". This result may be the result of the patients' early postoperative information needs about eating, drinking, and wound care. Additionally, patients want to be good prepared for particular situations that may be related to their recovery. This is accomplished when patients receive comprehensive, systematic, and specialized nursing care throughout the preoperative, intraoperative, and postoperative phases.

This finding is supported with a study conducted in Poland by **Jurys et al., (2022)**, who concluded that a nursing program is sufficient to

decrease the incidence of postoperative complications among prostate cancer patients. In addition, this result agrees with **Feng et al., (2020)**, who conducted a study in China on 112 patients and demonstrated that patients who received comprehensive nursing intervention showed good clinical indicators compared with patients who received usual nursing care.

The recent finding discovered that most of the studied patients had prostate cancer risk of anxiety and depression. This may be the result of the poor psychological state that all patients with prostate cancer experience, which can be exacerbated by a variety of variables including anxiety about the danger of surgery, postoperative repercussions, and sickness distress. This outcome matched with a study in China published by **Feng et al., (2020)**, who revealed that the highest percentage of patients in the study and control groups risk for anxiety and depression.

Regarding total body image, the current results displayed a statistically significant difference between the intervention and control groups. This could be because of the nursing service mode, which increases patient knowledge, develops patients' attitudes and behaviors, and offers counseling and support to help patients reduce their negative body image beliefs. Talking with other guys during the sessions may also assist to normalize and validate men's experiences with sexual dysfunction, which can lessen some of the sorrow it causes and give them hope for their future functioning. In the same line, **Atia, & Soliman, (2018)** in Egypt in their study findings showed that there was a statistically significant difference between pre- & post-psych educational programs about body image. Moreover, this finding is supported by a study carried out in Portugal by **Rodrigues et al., (2022)**, who represented that a nursing intervention program had beneficial effects on reducing anxiety & depression among prostate cancer male patients and enriched the level of satisfaction.

The recent study established that age significantly increased the risk of anxiety and depression among the studied patients. Likewise, a study done in UK by **Gentili et al., (2022)**, who

found that old age significantly decreases satisfaction among people with prostate cancer.

Regarding the effect of BMI on total body image score, the study showed that BMI had an insignificant effect on the risk of anxiety and depression among the studied patients. This finding contradicts the study published by **Mainwaring et al., (2021)** in Canada who revealed that body mass index is a contributing factor to depression and poor body image.

Conclusion:

The application of a precise nursing service mode intervention is an effective way to improve health condition, and decrease the risk of postoperative complications, anxiety, and depression among middle-aged and elderly male patients with prostate cancer.

Recommendations:

- Training integrated healthcare nurses' team to be prostate cancer specialized nurses care providers in oncology department and the outpatient clinics to provide precise nursing service mode for male patients with prostate cancer.
- Further research should look into how patients' health can be improved by digital health technologies.
- Focuses on the organization of after-care through supportive care groups from other community resources for prostate cancer patients, predominantly outside of specialized oncological care.

Consent to Participate:

All male patients participating in the study provided their oral consent. Middle-aged and elderly male patients were aware that their participation in this study was voluntary and unpaid. They had the right to leave at any time. The findings of this study will be presented as anonymous raw figures.

Funding:

No funding was received.

Conflict of Interest Declaration: With regard to the research, writing, and/or publication of this article, the author(s) have disclosed that they have no potential conflicts of interest.

Acknowledgments:

The researchers desire to offer their thankfulness and gratefulness to all who assisted in this research.

Highlights:

What is the current knowledge?

In general, men with prostate cancer have less knowledge about the prostate gland, and exercise to strengthen pelvic muscles. Therefore, giving patients the knowledge, exercise, and techniques to take proper care helps them to improve their health and urinary condition and reduce anxiety and depression.

What is new here?

Precise nursing service mode has a good effect in improving health condition, urinary conditions, and reducing the severity of complications and incidence of anxiety and depression in prostate cancer male patients.

References:

- A bd-Almonaem, A., Eshra, K., & Ali K, Shahin H. (2021). Quality of Psychological Life for Patients with Prostate Cancer. *International Journal of Novel Research in Healthcare and Nursing* Vol. 8, Issue 3, pp: 371-381.
- Arafa, M., Farhat, K., Khan, F., Rabah, D., Elmorsheedy, H., Mokhtar, A., & Al-Taweel, W. (2024). Development and internal validation of a nomogram predicting significant prostate cancer: Is it clinically applicable in low prevalent prostate cancer countries? A multicenter study. *The Prostate*, 84(1), 56-63.
- Atia, M., & Soliman, H. (2018). Effectiveness of Psycho-Educational Program on Quality of Life and Body Image of Prostatic Cancer Patients. *International Journal of Novel Research in Healthcare and Nursing*, 5(1), 247-261.
- Azevedo, C., da Mata, L., de Resende Izidoro, L., de Castro Moura, C., Araújo, , Pereira, G., & Chianca, M. (2024). Effectiveness of auricular acupuncture and pelvic floor muscle training in the management of urinary incontinence following surgical treatment for prostate cancer: A randomized clinical trial. *European Journal of Oncology Nursing*, 68 (1), 102490.
- Canadian Cancer Society (2021): Supportive care for prostate cancer, coping with your emotions and coping with anxiety and stress. Retrieved from: <https://cancer.ca/en/cancer-information/cancer-types/prostate/supportive-care>.
- Chopra D, De La Garza R & Lacourt T. (2021). Clinical relevance of a Body Image Scale cut point of 10 as an indicator of psychological distress in cancer patients: Results from a psychiatric oncology clinic. *Supportive Care in Cancer*, 29(1): 231–237
- de Vos, I., Remmers, S., Hogenhout, R., Roobol, M., & ERSPC Rotterdam Study Group. (2024). Prostate Cancer Mortality among Elderly Men after Discontinuing Organised Screening: Long-term Results from the European Randomized Study of Screening for Prostate Cancer Rotterdam. *European Urology*, 85(1), 74-81.
- El Mezayen, A, Fouda, L, Essa, H., & El Mezayen, S. (2022). The Effect of Educational Program on Knowledge and Commitment of Male Employees at Tanta University Regarding Prostate Cancer Screening. *Tanta Scientific Nursing Journal*, 25(2), 68-81.
- Elsisi, H., El-Attar, M., & Ismaeil, M., El-Shater, S., Kirolos, G., Sedrak, S., & Loutfy, O. (2023). Estimation of Prostate Cancer Cost in Egypt from a Societal Perspective. *Global Journal on Quality and Safety in Healthcare*, 6(2), 33-41.
- Ezeama, C., & Enwereji, E., (2023). Knowledge and Attitude of Men towards Prostate Cancer Screening. A Case Study of Men Attending Services in Imo State University Teaching Hospital Orlu. *J Med-Clin Res & Rev*, 7(5), 1-6.
- Feng, M., Sun, Y., Zhang, N., & Chen, L. (2020). Application effect of perioperative comprehensive nursing intervention on laparoscopic radical prostatectomy. *INTERNATIONAL JOURNAL OF CLINICAL AND EXPERIMENTAL MEDICINE*, 13(9), 6983-6989.
- Fouad, I., & Gomaa, A. (2018). Prostate cancer Program for Elderly Men Perception. *International Journal of Novel Research in Healthcare and Nursing*, 5(3), 439-450.
- Gentili, C., McClean S., & McGeagh L., (2022). The impact of hegemonic masculine ideals on self-esteem in prostate cancer patients undergoing androgen deprivation therapy (ADT) compared with ADT-naïve patients. *Psycho-Oncology* 31(11): 1958–1971.
- Gezginci, E., Goktas, S., & Ata, A. (2023). Effect of perioperative pelvic floor muscle training program on incontinence and quality of life after radical prostatectomy: A randomized controlled trial. *Clinical Rehabilitation*, 37(4), 534-544.

- Hopwood, P., Fletcher, I., Lee, A., & Al Ghazal, S. (2001). A body image scale for use with cancer patients. *European journal of cancer*, 37(2), 189-197.
- Jeihooni, A., Kashfi, M., Hatami, M., Avand, A., & Bazrafshan, R. (2019). The effect of an educational program based on PRECEDE model in promoting prostate cancer screening in a sample of Iranian men. *Journal of Cancer Education*, 34(1), 161-172.
- Jurys, T., Kupilas, A., Rajwa, P., Bryniarski, P., & Burzyński, B. (2022). Role of preoperative patient education among prostate cancer patients treated by radical prostatectomy. *Central European Journal of Urology*, 75, 272-276.
- Kirkby, R., Al Saif, A., & Mohamed, G. (2005). Validation of an Arabic translation of the Zung self-rating depression scale. *Annals of Saudi Medicine*, 25(3), 205-208.
- Mainwaring, M., Walker, M., Robinson, W., Wassersug, J., & Wibowo, E. (2021). The psychosocial consequences of prostate cancer treatments on body image, sexuality, and relationships. *Frontiers in Psychology*, 12, 765315.
- Majeed, H. M., & Atiyah, H. H. (2021). Effectiveness of an Educational Program on Employees Knowledge Concerning Contributing Factors and Early Detection for Prostate Cancer in Baghdad University Colleges in Bab-Almudam. *P J M H S*, 15(3), 793-798.
- Mori, R., Faria, F., Mauad, C., Rodrigues A., & Reis, D. (2020). Prostate cancer screening among elderly men in Brazil: should we diagnose or not? *International braz j urol*, 46, 34-41.
- Nady, S., Youness, M., & Hassan, H. (2018). Effect of a nursing intervention program on quality of life improvement for women undergoing gynecological and breast cancer treatment. *Assiut Scientific Nursing Journal*, 6(15), 62-77.
- Østergaard, L. D., Poulsen, M. H., Jensen, M. E., Lund, L., Hildebrandt, M. G., & Nørgaard, B. (2023). Health-related quality of life the first year after a prostate cancer diagnosis a systematic review. *International Journal of Urological Nursing*, 17(1), 15-28.
- Rhondali, W., Chisholm, B., & Filbet, M. (2015). Screening for body image dissatisfaction in patients with advanced cancer: A pilot study. *Journal of Palliative Medicine* 18(2): 151–156.
- Rodrigues, C., Gomes, B., & Albuquerque, C. (2022). The rehabilitation of cancer patients and the role of nurses: A scoping review. *Oncology in Clinical Practice*, 18(3), 147-165.
- Saleh, M., Ebrahim, E., Aldossary, H., & Almutairi, M. (2020). The effect of prostate cancer educational program on the level of knowledge and intention to screen among Jordanian men in Amman. *Asian Pacific journal of cancer prevention: APJCP*, 21(1), 211.
- Sato, D. (2020). Effectiveness of telenursing for postoperative complications in patients with prostate cancer. *Asia-Pacific Journal of Oncology Nursing*, 7(4), 396-403.
- Silva Neto, S., Dias, F., Osório, B., & Rolim, A. (2022). EHealth-Based Interventions for Older Patients with Prostate Cancer: A Quick Review of the Literature. *Telemedicine Reports*, 3(1), 79-92.
- Szymanski, M., Wei, T., Dunn, L., & Sanda, G. (2010). Development and validation of an abbreviated version of the expanded prostate cancer index composite instrument for measuring health-related quality of life among prostate cancer survivors. *Urology*, 76(5), 1245-1250.
- Taleb, R., Sameh, M., Tolba, G., Hegazi, A., & Altaheri, T. (2023). The effect of nursing interventions on urinary, bowel, and sexual dysfunction among post-radical prostatectomy patients. *International Journal of Urological Nursing*, 17(1), 70-77.
- Teixeira, M., Prata, P., & Couto, R. (2023). Quality of life of prostate cancer patients: A nursing care model. *Revista de Enfermagem Referência*, 6(2), e22086.
- Zheng, C., Luo, T., Cao, D., & Cai, Z. (2022). Effect of precise nursing service mode on postoperative urinary incontinence prevention in patients with prostate disease. *World Journal of Clinical Cases*, 10(5), 1517.