

Original Research Article

Assessment Of Nurse's Knowledge regarding postoperative renal surgery complication in El Gazira Hospital for renal surgery and Disease

Abstract

Background: The nurse plays a pivotal role in helping the patient with renal surgery, pre and post operation including the complications and long-term physical and psychosocial implications.

Aim: This study was aimed to assess nurses Knowledge regarding postoperative renal surgery complication.

Methods: This is a descriptive hospital-based study, conducted in the Kidney Center at Al-Jazira Hospital. The study was involved 35 staff nurses as total coverage. Self-administrated questionnaire was used to interview the study population. Scoring system was established to measure the level of nurse's knowledge about Post renal surgery. The data were analyzed by using the statistical package for social science program.

Results: All involved nurses 100% are responded to the questionnaire. Most of the study population 12(34.3%) are graduated in 2018, followed by 2017 and 2015 with percentage of 9(25.7%) and 6 (17.1%) respectively. Most of the study population (77.1%) has Bachelor degree

while the rest 22.8% have diploma degree. More than 91.4% of the respondent has good knowledge about types of kidney rejection. The majority of the study population has competent knowledge regarding nursing role about postoperative renal transplant. More than 94.3% of all involved nurses have competent knowledge about home nursing for renal transplant patient. More than 94.4% of the participants have good knowledge about nursing of patient with post operative renal stone. The knowledge of the involved nurses about prostate surgery was ranged 94.3% to 100%. The knowledge of nurses about radical nephrectomy was appearing to be 85.7% to 100%. Nurse's knowledge about partial nephrectomy surgery is ranged from 80.0% to 100%.

Conclusions: The study concluded that there was adequate knowledge of nurse's staff regarding postoperative care for patients with postoperative renal surgery complications.

Key words:

Nurses, Knowledge, Renal surgery, renal disease

Introduction:

Kidney surgery may include partial or total nephrectomy (removal of the kidney), kidney transplantation for end-stage renal disease (ESRD), procedures to remove stones or tumors, and procedures to insert drainage tubes (nephrostomy). Incision approaches vary but may

involve the flank, thoracic, and abdominal regions. Many surgical procedures were previously performed as "open" procedures, but are now being done with laparoscopic "keyhole" surgeries (Dunn et al., 2000).

There are several types of kidney surgical approaches. Nephrectomy is most commonly performed for malignant tumors of the kidney but may also be indicated for trauma and kidneys that no longer function due to obstructive disorders and other renal disease. Nephrectomy is also the procedure of choice to remove a healthy kidney for donation to a transplant recipient. The absence of one kidney does not result in impaired renal function when the remaining kidney is normal and healthy (Colliniet al., 2021). Another type of renal surgical procedure is nephrolithiasis which refer to stones (calculi) in the urinary tract and kidney, respectively. Urinary stones account for more than 320,000 hospital admissions each year. The occurrence of urinary stones occurs predominantly in the third to fifth decades of life and affects men more (Ramos-Fernández et al., 2009). Prostatectomy is another type of urinary tract surgical procedure which is surgery to remove part or all of the prostate gland. The prostate gland is situated in the male pelvis, below the urinary bladder. It surrounds the urethra, which carries urine from the bladder to the penis. The procedure is used to treat a number of conditions affecting the prostate. It's most commonly used as a treatment for prostate cancer. Prostatectomy can be performed in

several ways, depending on the condition involved. Options include minimally invasive surgery performed with robotic assistance and traditional open surgery (Mathis and Nelson. 2019). No one can deny that Kidney transplantation has become the treatment of choice for most patients with ESRD. During the past 40 years, more than 400,000 kidney transplantations have been performed worldwide, and approximately 9000 are performed in the United States each year. Patients choose kidney transplantation for various reasons, such as the desire to avoid dialysis or to improve their sense of well-being and the wish to lead a more normal life. Additionally, the cost of maintaining a successful transplantation is one-third the cost of dialysis treatment (Matevossian et al., 2009).

Renal surgery is considered as main medical decision strategy. However, this type of treatment has physical or psychological complications. Assessment of nurse's knowledge about renal surgery is very important to improve nursing performance for decreasing the risk of complications post renal transplantation (Saeed et al., 2015). According to experience of researchers, it was noted that the nurse's knowledge and practice about that measures insufficient and requirement for improvement. To best of our knowledge there are a very few data available published research about nurse's knowledge regarding postoperative complications of renal surgery care in Sudan; So that it's important to be known postoperative

renal surgery complications. Therefore, this study was aimed to assess nurses Knowledge regarding postoperative renal surgery complication.

Methods

Study setting and design

This was descriptive cross-sectional hospital-based study, aimed to assess Nurse's Knowledge and roles regarding postoperative renal surgery complication in El Gazera Hospital for renal surgery and Disease.

Selection of Study population

The targeted study populations were a total coverage of all qualified nurses working in El Gazira Hospital for renal surgery and Disease. A total of (35) nurses were involved in this study.

Data collection and analysis

A designed structured, self-administered questionnaire was used to collect the data from study subjects. The Questionnaire consists of two parts the first part is the nurse's demographic data and the other part is about the nurse's knowledge about postoperative surgical procedure. The nurse's knowledge was assessed by using scoring system in which the data was distributed into three categories to measure the level of nurse's knowledge about Post Renal Complication (PRC), if the nurse respond to (4, 3) choice it was consider as good knowledge, (2) choice consider as fair knowledge, while (1, 0) choice was consider as poor knowledge. Each nurse was given one week to fill the questionnaire and return it. The

collected data was analyzed using statistical package for social sciences (SPSS version 21) and presented in forms of tables and figures.

Ethical considerations

Letter from Shendi University- Faculty of Nursing Science was obtained and submitted to El Gazira Hospital for renal surgery and Disease. Research purpose and the questionnaire were explained to respondents before administration of data, and were told that it is voluntary, verbal consent was also been taken.

Result

The nurse plays a pivotal role in assisting the patient in facing many challenges that are associated with renal transplantation, including the complications. This study was done to assess the knowledge to assess nurses' knowledge about postoperative -renal complications. The study was involved a total of 35 staff nurses as total coverage, and data were analyzed by using the statistical package for social science program. Our results demonstrated that most of the study population 12(34.3%) are graduated in 2018, followed by 2017 and 2015 with percentage of 9(25.7%) and 6 (17.1%) respectively. However, 2 (5.7%) of the study population are graduated in 2016, 2013 and 2007 equally. Only 1(2.9%) of the population are graduated 2010 and 2014 equally (Table 1). Most of the study population (77.1%) has Bachelor degree while the rest 22.8% have diploma degree (Figure 1). The current study result showed that

about 16 (45.7%) of the study population have showed working experience less than 1 year in renal unit, while 10 (28.6%) of them have experience of 1 to 5 years and only 9 (25.7%) showed an experience of 5 to 10 years in renal unit (Table 2). Our results also showed that most of the study population 54.3% has enrolled in at least one training program, 28.6% have enrolled in two training programs and 17.1% have three training certificates (Figure 2).

Regarding kidney transplantation complications, all of the study population 35 (100%) have competent knowledge about the kidney rejection, 32 (91.4 %) have competent knowledge about delayed graft function; due to acute tubular necrosis and 34 (97.1%) have an equal competent knowledge about the possible post transplantation infections and surgical bleeding. Our results also showed that the majority of the study population has competent knowledge regarding about nursing role postoperative renal transplant. The current study results showed that more than 97% of nurses involved in this study have competent knowledge about post operative self-care regimen except for knowledge about the daily weight measurement 85.7% of nurses have showed a competent knowledge. Results illustrated that more than 94.3% of all involved nurses have competent knowledge about home nursing for renal transplant patient (Table 3).

Regarding renal stone surgery, our results showed that 97.1% of the involved nurses have a competent knowledge about nephrolithiasis refers to renal stones post operative complications in term of perirenal hematoma, infection from dissemination of infected stone particles and obstruction from remaining stone fragment. In addition our results also showed that more than 94.3% of involved nurses have competent knowledge about home care nursing of patient with post operative renal stone (Table 4).

Regarding prostate surgical approaches our result showed that more than 91.4% of the study population is competently aware about prostatic surgery that may be done for BPH or prostate cancer for surgical approach. Also the result showed that more than 91.4% of the study population is competently aware about prostatic surgery that may be done for BPH or prostate cancer regarding immediate nursing role. Moreover, the current study results showed that more than 94.3% of the study population has competent knowledge about home nursing for prostate patient treated by prostatectomy including instructing patients to have a PSA blood test every 3 to 6 months after prostatectomy and to perform pelvic floor exercises and other related activity (Table 4).

Regarding nephrectomy surgical approaches our result demonstrated that all involved nurses 100% have a competent knowledge about nursing role in Radical Nephrectomy. The knowledge

about early complications postoperative radical nephrectomy among involved nurses was appearing to be 85.7% to 100%. Nurse's knowledge about their role in the partial nephrectomy is ranged between 88.6% to 100%. Nurse's knowledge about fever and infective nurse role is ranged between 91.4 % for the using of aseptic technique in all procedure to 100% for Administration of choice antibiotic as prescribed, laboratory investigation, inspection of signs and symptoms of inflammation. In addition nurse's knowledge about long term partial nephrectomy complications is ranged from 80.0% to 97.1%. The nurse's knowledge about their role in case of early partial nephrectomy complications is ranged from 88.6% to 100.0%. Our result also determined that nurse's knowledge about home nursing role in case of patients with partial nephrectomy is ranged from 91.4% to 100.0% (Table 5).

Discussion

This study was done to assess the knowledge to assess nurses' knowledge about postoperative -renal complications. The study was involved a total of 35 staff nurses as total coverage. Our results showed that most of the study population 12(34.3%) are graduated in 2018, followed by 2017 and 2015 with percentage of 9(25.7%) and 6 (17.1%) respectively. The current study determined that most of the study population (77.1%) has Bachelor degree while the rest 22.8% have diploma degree which is disagreed with Ahmed *et al.*, finding in Sudan in 2020 they found that the minimum level of education of their study participants was bachelor degree, 80.6% nurses had bachelor's degree, and 9.7% nurses had master's degree. The current study finding is also disagreed with Eman and Howida finding in 2019 in Egypt they noted that only (22.2%) of the study subjects were Secondary nursing education, while (55%) of them have Bachelor of nursing. The difference of education depends on the job preferences. In this study, about 16 (45.7%) of the study population have showed working experience less than 1 year, while 10 (28.6%) of them have experience of 1 to 5 years and only 9 (25.7%) showed an experience of 5 to 10 years and this was partially agreed with Ahmed *et al.*, finding in that 50.0% of their study participant have less than 6 months experience in renal unit. However, 12 (16.7%) of their study participants

have more than 2 years' experience. The disagreement in the later point may be due to variation in study area they involve nurses working in Khartoum state while the current study scope on the nurses working in *El Gazira state*.

In this study all of the study population 35 (100%) have competent knowledge about the kidney rejection, 32 (91.4 %) have competent knowledge about delayed graft function; due to acute tubular necrosis and 34 (97.1%) have an equal competent knowledge about the possible post transplantation infections and surgical bleeding. The current study illustrate that the majority of the study population have competent knowledge about nursing role postoperative renal transplant. These findings are disagreed with Eman and Howida finding in 2019 in Egypt, they indicated that more than of the studied staff nurses had incompetent practice regarding caring after kidney transplantation. Also, these findings are in disagreed with (Younis. et al., 2018) they were pointed out that the majority of the studied nurses had a deficit knowledge regarding management of patient post kidney transplantation.

Self-care management is a positive effort to oversee and participates in their health care to optimize health, prevent complications, control symptoms and minimize the intrusion of the disease into their preferred life (Shaista., 2010). In the current more than 97% of nurses involved in this study have competent knowledge about post operative self-care

regimen except for knowledge about the daily weight measurement 85.7% of nurses have showed a competent knowledge, and it's good news that nurses are aware about the Self-care management and therefore they can give the patients correct advice.

Knowledge of the nurse of post-operative care of kidney transplantation was of crucial importance and had an impact on nurse's practice. The main goal of care was to maintain homeostasis until the transplanted kidney functioning well (Nakashima et al., 2012). In the current study more than 94.3% of all involved nurses have competent knowledge about home nursing for renal transplant patient and accordingly they can advice and instruct the renal transplant patient to report if there any weight gain-edema – decrease in urine output and to follow-up the healthcare after transplantation for their lifelong and to inform them to avoid any contact sports.

The management of renal stones largely depends on medical and surgical procedures (according to patients need) and nurses' duties are pre and postoperative management of renal stone. If the nurses have proper knowledge about the management of renal stone patients, they would be able to perform their responsibilities efficiently (Halim et al., 2019). The current study demonstrated that 97.1% of the involved nurses have a competent knowledge about nephrolithiasis refers to renal stones post operative complications in term of perirenal hematoma, infection

from dissemination of infected stone particles and obstruction from remaining stone fragment. Also the current study demonstrated that more than 94.3% of involved nurses have competent knowledge about home care nursing of patient with post operative renal stone. The later finding is indicated that nurses working in renal unit have favorable knowledge and aware about the management of renal stones problems.

Men with Prostate disease have described physical and emotional difficulties around the time of diagnosis and surgical procedure. Thus, Nurses should provide accurate, complete, and consistent information to help patients understand the full implications of the disease process (Carter et al., 2011). The current study showed that more than 91.4% of the study population is competently aware about prostatic surgery that may be done for BPH or prostate cancer regarding immediate nursing role and surgical approaches. Many studies have examined patient care in the post treatment period, mainly following prostatectomy. Nurses' assistance is seen as fundamental to minimize patients' negative experiences (Carvalho and Cristão., 2012). The current study demonstrates that more than 94.3% of the study population has competent knowledge about home nursing for prostate patient treated by prostatectomy including instructing patients to have a PSA blood test every 3 to 6 months after prostatectomy and to perform pelvic floor exercises and other related activity.

Close follow-up after Radical Nephrectomy (RN) is important and including administration of prescribed medications, close observation, monitoring for vital signs, laboratory tests especially renal function, careful observation for wound site. Patients should be provided with necessary instructions during preoperative and postoperative periods to prevent or reduce the occurrence of complications (Flavin et al., 2016). The current study demonstrated that a round 88.6% to 97.1% of involved nurses have a competent knowledge about Radical Nephrectomy complication and all the involved nurses 100% have a competent knowledge about nursing role in Radical Nephrectomy. However, knowledge about early complications postoperative radical nephrectomy among involved nurses was appearing to be 85.7% to 100%. The later knowledge needs to address by encouraging the nurses to enroll in training program.

Partial nephrectomy. In a partial nephrectomy, also called kidney-sparing (nephron-sparing) surgery, the surgeon removes diseased tissue from a kidney and leaves healthy tissue in place. Patient with partial nephrectomy need special care from nurses and this needs more to be knowledgeable. In the current study majority of the involved nurses have a favorable knowledge about all aspects of the partial nephrectomy including information about early as well as long term complications the nurse's role and home nursing. Unfortunately, we didn't find previous

report after long searching on the different resources of information and therefore we are unable to compare our finding with others.

With regard to the linkage of the level of knowledge regarding post-operative care for kidney transplant patients between nurses and selected demographic variables. The calculated values are less than the significant P-value 0.05. There is no significant correlation between the level of knowledge between nurses and specific demographic variables. This finding was disagreed with Eman and Howida finding in 2019 in Egypt their result indicated that there was a highly statistically significant positive association between head nurses' knowledge, and practice at the immediate post and follow up intervention phases. The current study findings were also disagreed with other studies done by Yatin *et al.*, 2014 and Janet., 2016, These researchers prescribed that educational programs should be organized according to the need of the nurses with constant evaluation.

Conclusion

In this study, it was concluded that nurses involved in this study have a sufficient level of knowledge regarding postoperative care for patient's postoperative renal surgery. However, nurses' knowledge about long term partial nephrectomy complications was appeared to be weak compared with other assessed information's. Nurses involved in this study should encourage enrolling in courses about long term partial nephrectomy

complications. Nurses should also be enrolled in workshop and training programs about post operative renal surgery to improve their knowledge about postoperative care for patient's postoperative renal surgery. Further studies with inclusion of more sample size and covering more hospitals is recommended for better assessment of nurse's knowledge and attituded. Further studies with determination of the correlation between nurses' workshops and training programs and their knowledge about postoperative renal surgery management is also recommended.

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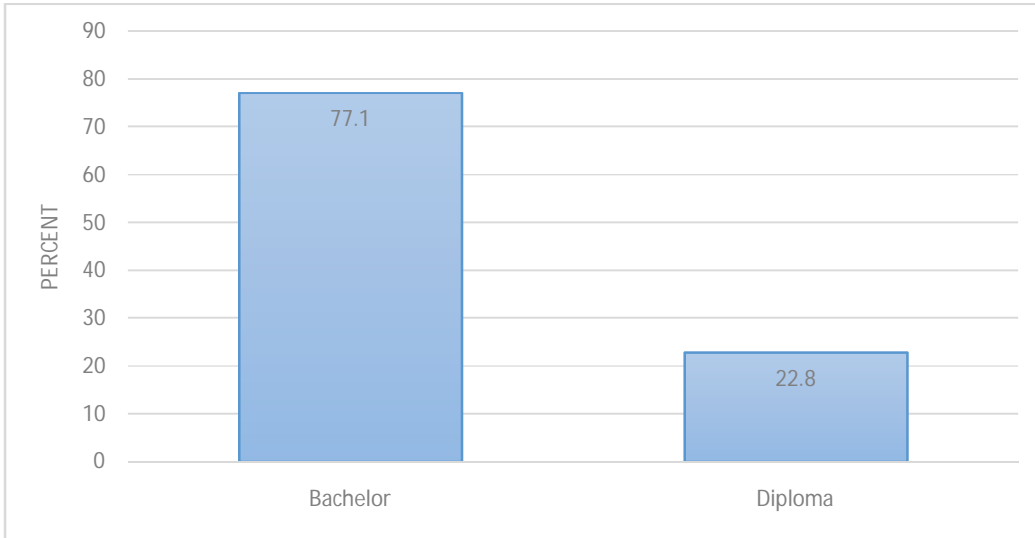


Figure (1): Show the distribution of study population according to their Qualification

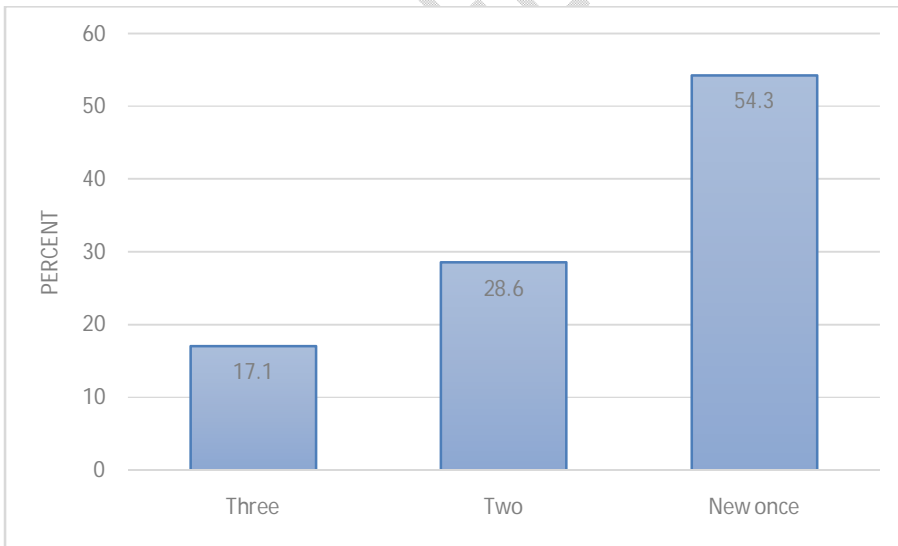


Figure (2): Distribution of study population in Training center

Table (1): Distribution of study population according to their Years of graduate:

Year of graduation	Frequency	Percentage %
2018	12	34.3
2017	9	25.7
2016	2	5.7
2015	6	17.1
2014	1	2.9
2013	2	5.7
2010	1	2.9
2007	2	5.7
Total	35	100.0

Table (2) Distribution of study population according to their Years of Experience in renal unit

Years of Experience in renal unit	Frequency	Percentage (%)
(5-10) years	9	25.7
(1-5) years	10	28.6
Experience less than 1 year	16	45.7
Total	35	100.0

Table (3): Distribution of study population according to their knowledge about transplanted kidney (surgical procedure, complication and management).

Statement	Study population knowledge		Total
	Yes	No	

Knowledge about transplanted kidney: types of kidney rejection.			
Rejection: acute or chronic	35 (100.0%)	0 (0.0%)	35 (100.0%)
Delayed graft function; due to acute tubular necrosis	32 (91.4%)	3 (8.6%)	35 (100.0%)
Infection	34 (97.1%)	1 (2.9%)	35 (100.0%)
surgical: Bleeding	34 (97.1%)	1 (2.9%)	35 (100.0%)
Knowledge about nursing role postoperative renal transplant.			
Explain continued protection of vascular access graft, associated with edema of overlying tissues	33 (94.3%)	2 (5.7%)	35 (100.0%)
Observe for symptoms of urine leak, such as sudden loss of kidney function pain over transplant site, and copious drainage of yellow fluid from the wound	35 (100.0%)	0 (0.0%)	35 (100.0%)
observe for vitals sign especially respiratory rate and BP	35 (100.0%)	0 (0.0%)	35 (100.0%)
Knowledge about post operative self-care regimen maybe inpatient or outpatient.			
Prevention of infection	35 (100.0%)	0 (0.0%)	35 (100.0%)
Measurement of urine, stool test for occult blood	34 (97.1%)	1 (2.9%)	35 (100.0%)
Daily Weight	30 (85.7%)	5 (14.3%)	35 (100.0%)
Encouraging him or her for adequate fluid intake	34 (97.1%)	1 (2.9%)	35 (100.0%)
knowledge about home nursing for renal transplant patient			
Instruct him or her to report immediately: weight gain-edema – decrease in urine output	34 (97.1%)	1 (2.9%)	35 (100.0%)
Follow-up care after transplantation is a lifelong necessity	34 (97.1%)	1 (2.9%)	35 (100.0%)
Informing him or her avoidance of contact sports for life to prevent trauma to the transplanted kidney	33 (94.3%)	2 (5.7%)	35 (100.0%)

Table (4): Distribution of study population according to their knowledge about renal stones surgery and prostate tumor surgical approaches.

Statement	Study population knowledge	Total
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	Yes	No	
knowledge about Nephrolithiasis			
perirenal hematoma – from bleeding around the kidney caused by trauma of shock waves or laser treatments	34 (97.1%)	1 (2.9%)	35 (100.0%)
infection from dissemination of infected stone particles, or bacteria resulting from obstruction	34 (97.1%)	1 (2.9%)	35 (100.0%)
obstruction from remaining stone fragment	34 (97.1%)	1 (2.9%)	35 (100.0%)
knowledge about nursing home care of patient post operative renal stone			
increase consumption of fiber – inhibits calcium and oxalate absorption	33 (94.3%)	2 (5.7%)	35 (100.0%)
encourage diet low in sugar and animal proteins – refined carbohydrates appear to lead hypercalciuria and urolithiasis	33 (94.3%)	2 (5.7%)	35 (100.0%)
encourage frequent walking to assist in passage of stone fragment's	33 (94.3%)	2 (5.7%)	35 (100.0%)
teach about analgesics that still may be necessary for colicky pain	34 (97.1%)	1 (2.9%)	35 (100.0%)
encourage fluids to accelerate passage of stone particles	34 (97.1%)	1 (2.9%)	35 (100.0%)
Knowledge about prostatic surgery may be done for BPH or prostate cancer. Surgical approach.			
Urinary incontinence, sexual dysfunction	35 (100.0%)	0 (0.0%)	35 (100.0%)
Thrombophlebitis, pulmonary embolism and clot formation	32 (91.4%)	3 (8.6%)	35 (100.0%)
Wound infection and dehiscence	33 (94.3%)	2 (5.7%)	35 (100.0%)
Hemorrhage	35 (100.0%)	0 (0.0%)	35 (100.0%)
Knowledge about prostatic sugary may be done for BPH or prostate cancer. Surgical approach immediate nursing role.			
Perform manual irrigation with 50 ml irrigating fluid using aseptic technique	34 (97.1%)	1 (2.9%)	35 (100.0%)
Administer ant cholinergic medications to reduce bladder spasm, as prescribed	32 (91.4%)	3 (8.6%)	35 (100.0%)
Avoid over distention of bladder, which could lead to hemorrhage	34 (97.1%)	1 (2.9%)	35 (100.0%)

Monitor flow of three-way closed irrigation and drainage system, continuous irrigation helps prevent clot formation which can obstruct catheter	35 (100.0%)	0 (0.0%)	35 (100.0%)
Maintaining patency of urethral catheter place after surgery	35 (100.0%)	0 (0.0%)	35 (100.0%)
Knowledge about home nursing for prostate patient (prostatectomy)			
Encourage prostate cancer patients to have a PSA blood test every 3 to 6 months after prostatectomy	34 (97.1%)	1 (2.9%)	35 (100.0%)
Teach measures to regain urinary control. Teach patient correctly perform pelvic floor exercises	34 (97.1%)	1 (2.9%)	35 (100.0%)
Encourage patient to express fears and anxieties related to potential loss of sexual function and to discuss with partner	33 (94.3%)	2 (5.7%)	35 (100.0%)
Tell patient to avoid sexual intercourse, straining at stool, heavy lifting, and long periods of sitting for 6 to 8 weeks after surgery	34 (97.1%)	1 (2.9%)	35 (100.0%)
Advise follow-up visits after treatment because urethral stricture or bladder neck contracture may occur	34 (97.1%)	1 (2.9%)	35 (100.0%)

Table (5): Distribution of study population according to their knowledge Nephrectomy surgical procedure

Statement	Study population knowledge		Total
	Yes	No	
knowledge about Radical Nephrectomy: refers to Removal of kidney and associated tumor, adrenal gland, surrounding peri renal fat: it is complications			
Low urine output in adequate fluid replacement intraoperatively and postoperatively	34 (97.1%)	1 (2.9%)	35 (100.0%)
Shock due to blood loss	32 (91.4%)	3 (8.6%)	35 (100.0%)
Basal atelectasis: (partially collapsed lung	31 (88.6%)	4 (11.4%)	35 (100.0%)
primary hemorrhage	34 (97.1%)	1 (2.9%)	35 (100.0%)
knowledge about nursing role in Radical Nephrectomy			
Documentation	35 (100.0%)	0 (0.0%)	35 (100.0%)
observe intake and out	35 (100.0%)	0 (0.0%)	35 (100.0%)
i.v fluid replacement	35 (100.0%)	0 (0.0%)	35 (100.0%)
Blood transfusion and it is components	35 (100.0%)	0 (0.0%)	35 (100.0%)
Observe vital signs	35 (100.0%)	0 (0.0%)	35 (100.0%)

knowledge about early complications postoperative radical nephrectomy			
Secondary hemorrhage as a result of infection	30 (85.7%)	5 (14.3%)	35(100.0%)
Fever	34 (97.1%)	1 (2.9%)	35(100.0%)
Nausea and vomiting	34 (97.1%)	1 (2.9%)	35(100.0%)
Acute confusion: common in older patients in the first week after surgery	33 (94.3%)	2 (5.7%)	35(100.0%)
pain due to renal surgery	35 (100.0%)	0 (0.0%)	35(100.0%)
knowledge about Nurse's Role in partial nephrectomy			
Administer pain medication as prescribed	35 (100.0%)	0 (0.0%)	35 (100.0%)
Using non- pharmacological method to relieve the pain like distraction	31 (88.6%)	4 (11.4%)	35 (100.0%)
Encourage patient to ambulate	35 (100.0%)	0 (0.0%)	35 (100.0%)
Assess pain location, level and characteristics, Transient renal colicky pain	34 (97.1%)	1 (2.9%)	35 (100.0%)
knowledge about infective nurse role in partial nephrectomy			
Administer choice Antibiotic as prescribed	35 (100.0%)	0 (0.0%)	35 (100.0%)
Using aseptic technique in all procedure	32 (91.4%)	3 (8.6%)	35 (100.0%)
Laboratory investigation C.B.C – CRP – ESR and BFF as ordered	34 (97.1%)	1 (2.9%)	35 (100.0%)
Inspect signs and symptoms of inflammation	34 (97.1%)	1 (2.9%)	35 (100.0%)
knowledge about long term partial nephrectomy complications			
Keloid formation	28 (80.0%)	7 (20.0%)	35 (100.0%)
Recurrence of reason for surgery due malignancy	34 (97.1%)	1 (2.9%)	35 (100.0%)
DVT	34 (97.1%)	1 (2.9%)	35 (100.0%)
Incisional hernia	31 (88.6%)	4 (11.4%)	35 (100.0%)
Bowel abstractive due to fibrous Adhesions	33 (94.3%)	2 (5.7%)	35 (100.0%)
knowledge about Nurse's role early complications of nephrectomy			
Administer Anticoagulant as prescribed	35 (100.0%)	0 (0.0%)	35 (100.0%)
Coagulation investigation	35 (100.0%)	0 (0.0%)	35 (100.0%)
Wearing antiembolic socket	32 (91.4%)	3 (8.6%)	35 (100.0%)
Ambulation as early as possible	35 (100.0%)	0 (0.0%)	35 (100.0%)

Bowel sound abdominal distension is monitored	35 (100.0%)	0 (0.0%)	35 (100.0%)
Nasogastric decompression due to paralytic ileus	31 (88.6%)	4 (11.4%)	35 (100.0%)
knowledge about Home Nurse role for patients with nephrectomy			
A void heavy lifting and reduction as prescribed on	35 (100.0%)	0 (0.0%)	35 (100.0%)
Daily weight and document it	32 (91.4%)	3 (8.6%)	35 (100.0%)
Intake and output to balance	35 (100.0%)	0 (0.0%)	35 (100.0%)
Observe any signs and symptoms inflammation at incisional site report	35 (100.0%)	0 (0.0%)	35 (100.0%)
Advise patient for necessity of follow-up periodically	35 (100.0%)	0 (0.0%)	35 (100.0%)

UNDER PEER REVIEW