

The Role Of Nurses In The Management Of Patients On Urinary Catheterization At The Kumba Baptist Health Center

Yungseh Peter Nshiom

Department of Public Health, School of Health and Medical Science, Kesmonds International University

Email address:

peteryungseh@kesmonsuniversity.org

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Abstract

Nurses are often responsible for the initiation of catheterization procedures for patients within the hospital or community setting. This nursing role requires contemporary information on catheter selection and problem solving in the maintenance of urinary catheters

The role of the nurses working in Kumba Baptist health Centre is the prevention of catheter associated urinary tract infections. A descriptive research was held in 100% of the nurses who work in all the wards in the health unit. The numerical values, percentages and the arithmetic mean were evaluated

Results: shows that 11 (44%) of the respondents identified; from urethral meatus to bladder to be the correct sequence, follow by 7(28%) of them who chose; from vagina to bladder. This is slightly followed by 6(24%) who regarded the option; from urethral orifice to kidney to be the correct placement sequence. Only 1(4%) of the respondent identified; from urethral meatus to ureter as the correct sequence of catheter placement

Conclusion: The study showed that the education level, age, gender and experience of nurses affect the role of nurses in management of patients with indwelling foley catheter. During the study it was discovered that nurses didn't receive adequate training on catheter-associated urinary tract infections in training schools. They have gain sufficient knowledge on how to insert a urinary catheter, but not enough information on catheter care, use of urine bags and the indication for urinary catheterization.

1. Introduction:

The word catheter comes from the ancient Greek word “kathiénai”, which translates “a stem to let go or send”. Throughout time, many different materials have been used to create catheters. Syrians used wooden reeds. Ancient Chinese used onion stalks. The Romans, Hindus, and Greeks all used tubes of wood or precious metal. Silver was especially prized due to its antiseptic qualities. It was also valued because catheter users could easily bend a silver catheter to suit their specific urethral needs. This was especially valuable for male users. Benjamin Franklin, one of the forefathers, made a silver catheter in 1752 for his brother who suffered from “the stone”, otherwise known as a bladder stone. By the mid 1800’s catheters had a very specific niche in the medical device world. This niche was further solidified by the invention of the vulcanization process which allowed hard rubber to be custom formed to specific shapes and sizes. This invention, along with the advent of latex rubber, allowed Frederick E.B. Foley to develop his rubber balloon catheter in June of 1935. Today, we simply know it as the Foley catheter, the longest standing catheterization device. Eventually in 1971, clean intermittent self-catheterization was introduced by Dr. Jack Lapides, as an improvement over Foley catheterization. His contribution to self-cathing revolutionized, not just the management of neurogenic bladders and retention, but also the lives of those who need to cath. This helped in avoiding infections and complications from poor technique. Today, thanks to the many different styles, methods, materials, and contributions to the practice of urological catheterization, those needing to cath are able to enjoy a lifestyle free of limitations posed by self-cathing. Today’s catheter user’s options are a far cry from the wooden tube or rolled up palm leaves of our ancestors.

According to Wyndaele, (2002), intermittent catheterization and self-catheterization have become widely introduced during the last 40 years and the main aims of intermittent catheterization are to empty the bladder and to prevent bladder over distension in order to avoid complications and to improve urological function. Roger *et al*, (2016) further explained that in order to drain the bladder of persons with urinary incontinence, neurological conditions, urological surgeries, and a foley catheter is passed through natural urethral passage or by creating an artificial track between the lower abdominal wall and the bladder. In 2012, Emerge, propounded that repeated and unsuccessful attempts at urinary catheterization induce stress and pain for the patient, injury to the urethra, potential urethral stricture requiring surgical reconstruction, and problematic subsequent catheterization. Thus improving techniques for catheter placement are essential for all healthcare personnel involved in the management of the patients with acute urinary retention, including attending emergency physicians who often are the first physicians to encounter such patients Urinary Tract Infections are responsible for over 30% of all Healthcare Associated Infections being in their entirety related to the instrumentation of the urinary tract, the most important isolated risk factor and that which predisposes patients to infection. Infection may arise in 1 – 2% of patients submitted to catheterization with an indwelling catheter. Approximately 4 million Americans undergo urinary catheterization annually, and more than 500,000 of these catheterizations involve indwelling catheters left in place for some period ([Warren, 2001](#)). Between 15% and 25% of patients may receive indwelling catheters during hospitalization, and the prevalence of catheter use in residents of long-term care facilities is estimated between 7.5% and 10% ([Saint et al., 2000](#)). One study found that of 4,010 individuals receiving home care services, 4.5% used an indwelling catheter ([Sorbye et al., 2005](#)). Although the indications for catheterization have been extensively outlined,

reports of the inappropriate use of catheters range from 21% to more than 50%.

Care of patients on urinary catheter by the nurse involves urinary catheterization assessment, frequent monitoring of the catheter, and pain management through the use of analgesics, monitoring patient's physiologic status to determine any complication and correct application of aseptic techniques to prevent infections. If all these are not properly taken into consideration, complication such as discomfort, trauma, infection, blockage of catheter, bladder spasm and bladder cancer will occur (Adams, 2015)

1.1. Statement of the Problem

In recent times, many patients with urinary tract problems such as urinary retention and incontinence are being prone to higher risks of further disorders and infections which may render them helpless and even loss of lives. Considering the fact that many different types and designs of urinary catheters and techniques have been made recently, many of these patients are still helpless despite the nursing care given in many hospital settings. The patients thus need special attention and follow up especially while on catheterization in order to prevent recurrent complications such as infections which may lead to death if not properly managed. Hence, this research is necessary to come out with standardized urinary catheterization schemes that will improve the condition.

1.2 Research Questions

- What knowledge do nurses at Kumba Baptist Health Center have on urinary catheterization?
- What is the role of the nurses in the management of patients on urinary catheterization
- What are the complications associated with poor management patients on urinary catheterization by the nurses?

1.3 Research Objectives

1.3.1 General Objectives

To determine the role of nurses in the management of patients on urinary catheterization at the Kumba Baptist Health Center

1.3.2 Specific objectives

- To assess the knowledge of nurses at the Kumba Baptist Health Center on urinary catheterization
- To determine the role of the nurses in the management of patients on urinary catheterization
- To identify the complications associated with poor management of patients on urinary catheterization by nurses at the Kumba Health Center

1.4. Rational of the Study

The study is aimed at identifying recent and more convenient management strategies, including the joined or coordinated efforts of nurses that can be used in the management patients on catheterization irrespective of the cause or origin

1.6. Significance of the Study

Knowledge from this study will help nurses know the recent management protocol of urinary catheterization and this will guide them in planning care and treatment for patients on urinary catheters. Effective planning and patient assessment will help in promoting quick recovery, ensuring the general health status of the patients and reducing hospital stay

The study also can be incorporated in the curriculum of training health institution in order to teach student nurses and other health personnel on catheterization and its management strategies by nurses

1.7. Scope of the study

The research entitled “investigating nurses role in the management of patients on urinary catheterization at the Kumba Baptist Health Center” was carried out from the period dating January 2022 to April 2022. It was concerned with assessing nurse’s knowledge on urinary catheterization, determining their role in the care of patients with urinary catheters, and identifying the complications associated with poor management of patients on urinary catheterization. The study involved a sample of 25 nurses, using a convenient sampling technique and the design used was a cross sectional design. The study observed privacy and confidentiality of the participants

2 Methodology

2.1. Study Area

This study was carried out at the Kumba Baptist Health Center. Kumba has an estimated population of about 400.000 inhabitants with $\frac{3}{4}$ of this population falling within the youthful age group.

The Baptist Health Center Kumba is made up of several departmental units including an outpatient department, maternity unit, minor surgical unit, pharmacy, medical and surgical unit, paediatric unit, laboratory, ultrasonography, unit, infant welfare unit and a family planning unit.

2.2. Study Design

The study involved a hospital base cross sectional study design in which data was collected at a given period of time, using well- structured questionnaire.

2.3. Study Population

The target population for this study was made up of nurses, males and females working in the outpatient department, medical and surgical units of the health center

2.4. Sample size determination

The sample size consisted of 25 nurses working at the outpatient department, medical and surgical units of the health center who accepted to take part in the study. The sample size could not be deduced from a formula because the entire nursing population at the health center was included in the study.

2.5. Sampling Techniques

This was a convenient sampling technique whereby any nurse working at the outpatient department, medical and surgical units and who met the inclusion criteria was administered questionnaire

2.6. Inclusion and Exclusion Criteria

3.6.1. Inclusion Criteria

All nurses at the medical and surgical units and outpatient department of the health center who accepted to be part of the research study after informed consent were included in the study.

2.6.2. Exclusion Criteria

Any nurses at the medical, surgical units and the outpatient department who refused to participate in the study after informed consent was excluded from the study. Also excluded were interns at the time of data collection.

2.7. Study Instruments

The main instrument that was used to carry out this study was questionnaire structured according to research objectives. Each section had questions relating to the research objectives

2.9. Method of Data Collection

Data was collected by administering questionnaire. This questionnaire had questions related to fulfillment of the objectives. Verbal questioning was done to obtain information that which could not be gotten from literature relating to the topic under research

2.10. Data management

The questionnaires were cross check on daily basis while in the field. After collection of data, they were secured in a sealed A4 envelope and placed in an inaccessible locker. While analysis was going, they were entered into a computer which was password coded to prevent a secondary user from getting access into the data

2.11. Data Analysis

Data was analyzed using both qualitative and quantitative descriptive statistics in SPSS where percentages (%), ranges, were used to express data. Pie charts, bar charts and tables including Microsoft office Word and Excel 2016 were used to represent and interpret data

2.13. Limitations of study

The only limitation of the study is the socio-political crisis which affected the process of data collections.

3 Presentation of Results

Table 1: Distribution of Questionnaires to respondents

No of questionnaires formulated	25
No of questionnaires administered	25
No of questionnaires returned	25
Total questionnaire unreturned	00
Returned rate of questionnaire	100%

3.1. Demographic data of the respondents

As illustrated by figure 1 below, among the 25 respondents in the study, 8(32%) were within the age

range of 20 – 24 years, closely followed by 7(28%) whose ages range from 31 – 35 years. 6(24%) of the respondents had ages ranging from 25 – 30 years while 4(16%) were of the age range 36 – 40 years and above

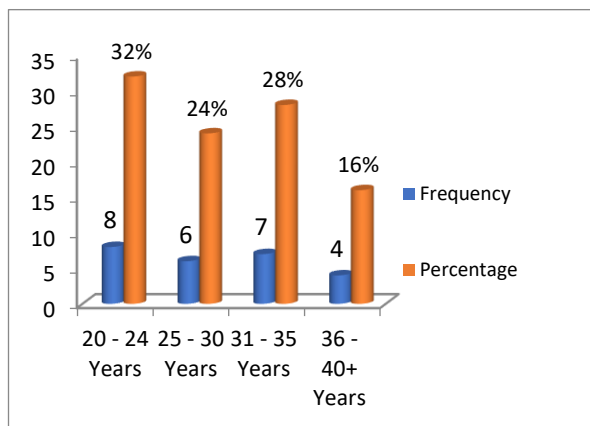


Figure 1: Age frequency distribution of the respondents

Table 2: Gender frequency distribution of the respondents

Gender	Frequency	Percentage (%)
Female	15	60
Male	10	40
Total	25	100

As illustrated in table 2, out of the 25 respondents who took part in the research study, 15(60%) of them were females whereas the remaining 10 were males, giving a percentage of forty (40%)

Concerning their qualification, figure 2 illustrate that 14(56%) out of the 25 respondent were state registered nurses, followed by 5(20%) of them who were state enrolled nurses. 4(16%) constituted HND nurses while only 2(8%) had BSc in nursing

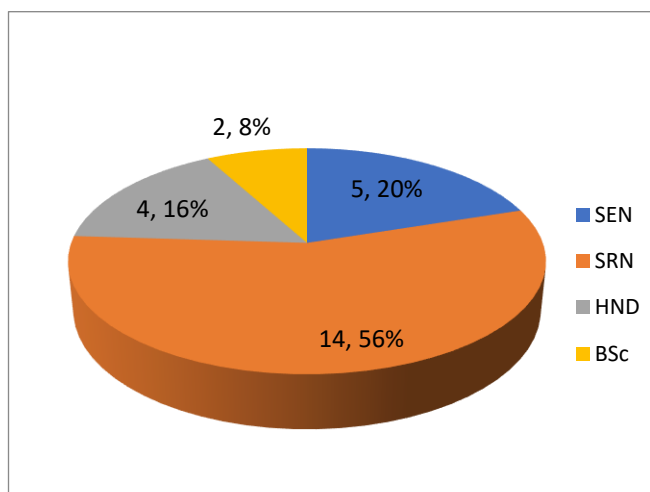


Figure 2 Distribution of Respondents according to Qualification

3.2 Distribution of respondents according work experience

With regards to working experience (longevity in service) of the respondents, figure 3 shows that 10(40%) of them had work for 2 – 4 years, closely followed by 6(24%) with working experience of ≤ 1 year. This is slightly followed by 5(20%) with 10 and above years in service. Lastly, 4(16%) of the respondents had working experience of 5 – 10 years

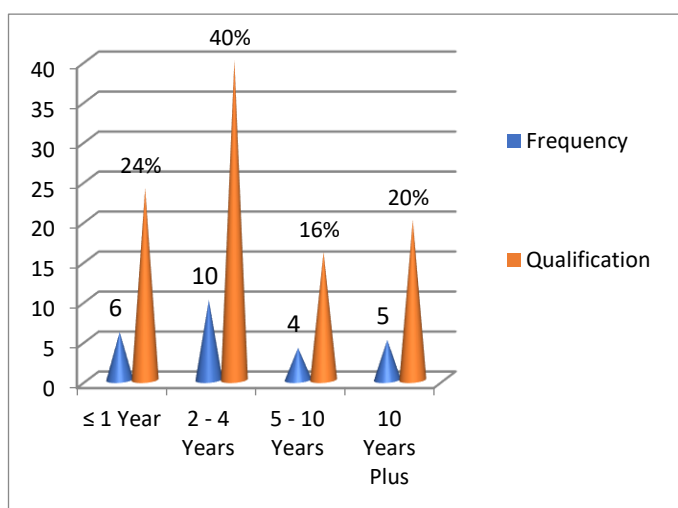


Figure 3: Frequency distribution of working experience of the respondents

3.3 Knowledge on the management of Urinary Catheterization

Table 3: Respondents knowledge on the definition of urinary catheterization

Definition	Frequency	Percentage (%)
Insertion of a catheter into the bladder in order to drain urine	16	64
Insertion of a catheter in the urethra with the aim of removing urine	4	16

Placement of a catheter into the bladder	3	12
Removal of urine from the kidney using a catheter	2	8
Total	25	100

With respect to the definition of urinary catheterization, table 3 shows that 16(64%) considered urinary catheterization as the insertion of a catheter into the bladder in order to drain urine while 4(16%) regarded urinary catheterization as an insertion of a catheter in the urethra with the aim of removing urine. 3 of the respondents who constituted 12% chose the option placement of a catheter into the bladder to be

the definition of urinary catheterization. Lastly, 2(8%) thought urinary catheterization is removal of urine from the kidney using a catheter

3.4 Knowledge on the types of catheterization

Table 4: Respondent knowledge on the types of urinary catheterization

Types	Frequency	Percentage (%)
Condom, supra pubic, intermittent and indwelling catheters	23	92
Anal, abdominal, chest and super pubic	2	8
Total	25	100

As illustrated by table 4 above, 23(92%) of the respondents suggested condom, supra pubic, intermittent and indwelling catheters to be the types of urinary catheterization while 2(8%) of them considered types of urinary catheters to be; anal, abdominal, chest and super pubic. No respondent suggested either the options; internal catheter, external catheters or rectal,

vaginal, penile and urethral catheters to be types of urinary catheterization

3.5 Knowledge of respondents on the indication of urinary catheterization

Table 5: Respondents views on the indications of urinary catheterization

Indications	Frequency	Percentage (%)
Urinary incontinence, urinary retention,	14	56

major surgeries, patients with neurological, spinal cord and urological disorders		
Diagnostic purposes, women in labour, comatose and unconscious patients	9	44
Terminally or critically ill patients	2	8
Total	25	100

Table 5 illustrates that 14(56%) of the respondents had the view that; urinary incontinence, urinary retention, major surgeries, patients with neurological, spinal cord and urological disorders are the main indications for urinary catheterization, followed by 9(44%) who suggested that; diagnostic purposes, women in labour, comatose and unconscious patients are reasons for placing a urinary catheter. 2 of the respondent constituting 12% suggested that a urinary catheter is indicated for terminally or critically ill patients, and

lastly no respondent had view that urinary catheterization is indicated for patients with diabetes and hypertension

3.6 Respondents views on the correct sequence of catheter placement

Table 6: Respondents views on the correct sequence of catheter placement

Sequence of catheter placement	Frequency	Percentage
From urinary meatus to bladder	11	44
From vagina to bladder	7	28
From urethral orifice to kidney	6	24
Urethral ,meatus to ureter	1	4
Total	25	100

Concerning the correct sequence of urinary catheter placement, table 6 shows that 11 (44%) of the respondents identified; from urethral meatus to bladder to be the correct sequence, follow by 7(28%) of them who chose; from vagina to bladder. This is

slightly followed by 6(24%) who regarded the option; from urethral orifice to kidney to be the correct placement sequence. Only 1(4%) of the respondent identified; from urethral meatus to ureter as the correct sequence of catheter placement

3.7 Role of nurses in the management of patients on urinary catheterization

Table 7: First action taken in the placement of urinary catheter

First measure to insert a catheter	Frequency	Percentage (%)
Wash hands thoroughly and wear sterile gloves and inspect the sterile catheterization kit	22	88
Maintain hand hygiene and insert catheter	3	12
Total	25	100

Table 7 above shows that 22(88%) of the respondents suggested washing hands thoroughly and wear sterile gloves and inspect the sterile catheterization kit as the first measure in inserting a catheter, followed by 3(12%) who rather will maintain hand hygiene and insert catheter. No respondent considered the options; observe clean techniques and wear disposable gloves

and do nothing as the first measures in inserting a urinary catheter

3.8 Techniques employed by nurses in the placement of urinary catheterization

Table 8: Techniques of urinary catheterization placement

Techniques	Frequency	Percentage (%)
Clean and aseptic techniques	20	80
Aseptic techniques only	4	16
Clean techniques only	1	4

Total	25	100
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With respect to the techniques employed in the placement of a catheter, table 8 indicates that 20(80%) of the respondents considered clean and aseptic techniques while 4(16%) chose aseptic techniques only as the major techniques employed in catheter placement. Only 1(4%) of them considered clean techniques only whereas none regarded sterilization a technique employed in placement of a urinary catheter

3.9 Precision to wearing gloves before inserting a urinary catheter

With regards to figure 6, 24(96%) of the respondents would wear sterile gloves before inserting a urinary catheter while only 1(4%) would not wear sterile gloves in the procedure

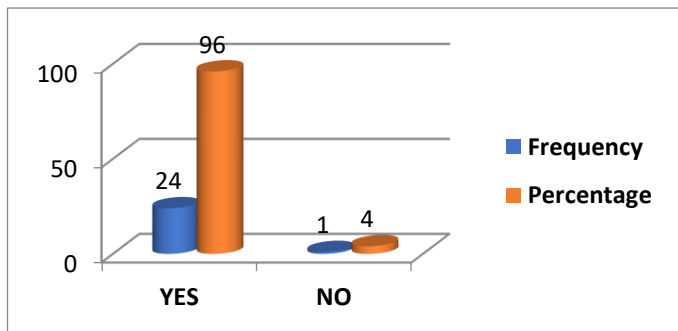


Figure 5: Attitudes towards wearing sterile gloves before catheter insertion

3.10 Care of a patient on urinary catheterization

Table 9: Care of a patient on urinary catheterization

Care	Frequency	Percentage (%)
Monitoring intake and output	11	44
Monitor patient frequently and maintain hygiene.	9	36
Educate and training them on catheter self- care	5	20
Total	25	100

Table 9 shows that 11(44%) of the respondents would care for a patient with a urinary catheter by monitoring intake and output, 9(36%) of them would monitor patient frequently and maintain hygiene. Lastly 5(20%) of the respondent would educate and training them on catheter self- care while no (0%) would give antibiotics to prevent infections

3.11 Complications Associated With Poor patient management Possibility of complications occurring with patients on urinary catheterization

Table 10: Possibility of occurrence of complications

Variable	Frequency	Percentage (%)
Yes	25	100
Total	25	100

With respect to table 10, 25(100%) of the respondents suggested that urinary catheterization can lead to complications when not properly managed

3.12 Complications associated with improper care of patients on urinary catheterization

Table 11: Complications associated with improper care of urinary catheterization patients

Complications	Frequency	Percentage
Infection, bladder trauma, bladder discomfort and bladder stones	15	60
Bladder spasm, catheter twisting and infections	6	24
Infections and bladder pain only	4	16
Total	25	100

Table 11 illustrates that out of the 25 respondents, who said urinary catheterization can lead to complications, 15(60%) of them gave; infections,

bladder trauma, bladder discomfort and bladder stones to be the complications, followed by 6(24%) gave; bladder spasm, catheter twisting and infections.

The remaining 4(16%) of the respondent gave; infection and bladder pain only to be the complications associated with poor care of patients on urinary catheterization

4 Discussions, Conclusion and Recommendation

4.1. Discussion

4.1.1. Nurses knowledge on urinary catheterization

The research findings show that; majority of the nurses (64%) knew the definition of urinary catheterization as they considered it to be an insertion of a catheter into the bladder in order to drain urine. Their views are therefore in conjunction with that of Gould *et al.*, (2009) who stipulated that urinary catheterization

4.1.2. Role of the nurses in the management of patients on catheterization

The findings indicated that a greater proportion of the nurses (88%) considered thorough hand washing, wearing of sterile gloves and inspecting the sterile catheterization kit as the first action they will do before inserting a catheter. Their views can be related to Rafael *et al.* (2008) who incorporate meticulous hand washing and sterile gloving as priorities in the process of catheter placement. These nurses probably have a good mastery of the major roles and preliminary actions a nurse is to consider before placing a urinary catheter. This is backed by their advanced academic portfolio couple with the experience they have had from managing patients with urinary catheterization

4.1.3. Complications associated with improper care of patients on urinary catheterization

With respect to whether there is are possibilities of urinary catheterized complications developing complications, all the nurses (100%) said YES. This

implies that patients placed on urinary catheterization if not careful handed by the nurse are subjected to many problems which can further aggravate their condition. In order to avoid risk of such complications Gray, (2008) explained that the nurse should always inspect the catheter to ensure that it is properly anchored and positioned, as catheter stabilization may be a factor in decreasing the risk of complications especially infections

4.2. Conclusion

From the data generated from the study and careful analyzing of the results, the following conclusion can be made by the researcher

More than half of the nurses sampled at the Kumba Baptist Health Center have knowledge on urinary catheterization especially on its definition, types and indications

Majority of the nurses do not only have an insight in the methodological care of patients on urinary catheterization, but also skilful on the management strategies and procedures

There readily occur complications of urinary catheterization and all of the nurses at the medical, surgical units and outpatient departments have an insight on the complications that are associated with management of patients on urinary

4.3 Recommendations

Despite the fact that more than half of the nurses have knowledge on urinary catheterization, they have to constantly do research on new and recent issues on catheterization and its management schemes and approaches so as to update themselves and fully render care to patients

The nurses equally should organize and hold working sessions, seminars, workshops and symposium in the

clinical setting to train young or newly recruited nurses on catheterization, its indications and management strategies

The study revealed that all of the nurses were versed with the complications that may results due to poor care, these nurses should provide a holistic care with caring for the patient by considering them as an integral whole, and equally producing, implementing, and evaluating patients care plan

Education and training of catheterized patients and their caregivers should be an integral role in the nurse's efforts to ensure best patient outcomes and reduce the likelihood of complications

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