Training of Urinary Catheter Insertion in Increasing Nurse Knowledge in PKU Muhammadiyah Bantul Hospital

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Abstract:

Urinary catheter insertion is the most common cause of bacteriuria. The risk of bacteriuria in the catheter is estimated at 5% to 10% per day. UTI is the cause of >30% of all nosocomial infections. At least 80% of UTIs by invasive procedures or urinary tract equipment are usually catheterized. Knowledge level of each nurse is different, it is a factor causing of urinary catheter installation quality. This study purpose was to analyze nurse installing urinary catheters knowledge before and after training. This research is an quasi experimental study that used a quantitative method (one group pretest-posttest design). The total population was 186 nurses and a sample of 52 people, with Simple Random Sampling technique. Univariate and bivariate data analysis using paired t test analysis. The results showed that the knowledge of urinary catheter insertion prior to training was mostly in enough category of 36 respondents (69,2%). Nurses' knowledge about urinary catheter placement during training was mostly in the good category with 42 respondents (80,8%). The Wilcoxon Test results were 0.000 <0.05. There is a difference in urinary catheters insertion knowledge before and after training at PKU Muhammadiyah Bantul Hospital.

1 INTRODUCTION

The hospital is one type of medical service unit that is very complex, not only in terms of types and kinds of diseases that must get the attention of doctors (medical providers) but also to establish diagnosis and prioritize patient safety (Masella et al, 2016). In Indonesia the issue of patient safety has become an important issue, one of the results of the study revealed that inpatients in 15 hospitals with 4,500 medical records showed very diverse Unwanted Events (KTD), namely 8.0% to 92.2% for diagnosis error and 4.1% to 91.6% for medication errors (Utarini, 2011). The goal of patient safety is to encourage specific improvements in patient safety by prioritizing the parts that have problems in health services and explaining evidence and solutions so that they can provide safe and high-quality health services (Permenkes, 2011).

The hospital is also required to be able to prevent and control infections in order to achieve quality hospital services and improve patient safety in hospitals, one of which is to control urinary tract infections (Permenkes,2012).

Urinary tract nosocomial infections are most often caused by the installation of a dower catheter which is around 40%. In several prospect studies, it has been reported that the rate of urinary tract infections associated with the installation of a deter catheter or urinary catheter ranges between 9% - 23%. According to other literature found that the installation of urine catheters has an impact on 80% of urinary tract infections (Jana, 2016).

Installation of a urine catheter is the most common cause of bacteriuria. The risk of bacteriuria in the catheter is estimated at 5% to 10% per day. Urinary tract infections are the cause of more than 1/3 of all hospital-acquired infections. Most of these infections (at least 80%) are due to invasive procedures or urinary tract instrumentation which is usually a catheterization (Gloud et al, 2009).

The high risk of installing a urinary catheter that is harmful to patient safety due to various things, one of which is the lack of sterile medical equipment used because nurses do not adhere to established Standards Operating Procedure (SOP) so that it is felt necessary to evaluate and be given training. The possibility of a lack of nurses knowledge towards SPO will have an impact on patient safety (MOH, 2006). Standard Operating Procedure (SOP) greatly helps nurses to achieve quality care, besides that SOP can maintain work safety, so nurses must think realistically about the importance of systematic evaluation of all aspects of high quality care.

Indicators of treatment for quality urinary catheter are based on nurses' knowledge of the hospital's standard operating procedures (SOP) regarding the installation of urine catheters. One of the factors that influence nurses in nursing actions to make logical and accurate decisions is the nurse's knowledge. Knowledge or cognitive is a domain that is very important for the formation of one's actions. Behavior based on knowledge will be more lasting than behavior that is not based on knowledge (Wawan and Dewi, 2011: 12). Therefore the knowledge of nurses will have an impact on the understanding of nurses in the installation of urine catheters, so that nurses do not make mistakes.

The level of knowledge and understanding of each nurse varies, this is one of the factors causing the quality of urinary catheter installation. The results of research conducted by Dewi (2009) regarding the level of nurses 'knowledge of urinary catheter care at PKU Muhamadiyah Hospital in Yogyakarta showed that the nurses' level of knowledge about SOP for urinary catheter care as a whole was in the good criteria of 20% and in enough criteria as much as 80%.

Nurses are also required to have good abilities. The most common is related to non-technical skills that are defined as cognitive and interpersonal skills related to the delivery of safe care and include communication, teamwork, situation awareness, decision making and problem solving (Brasaite, 2016). Research by Kasmad, 2007 on the relationship between the quality of catheter care and the incidence of urinary tract nosocomial infections explained that there was a relationship between the quality of catheter care and the incidence of urinary tract nosocomial infections.

Training is now widely applied to increase nurses' knowledge, for example training in Basic Trauma Life Support (Proemergency, 2017). Other studies related to training have been carried out. One of them is a study by Rosliani et al (2013) which is known that effective refresher increases the knowledge of nurses.

PKU Muhammadiyah Bantul Hospital is still continuing to make efforts to improve the implementation of standard operating procedures in the selection and installation of urinary catheter hoses. This is a challenge for both hospital management and especially medical personnel or nurses who are assigned to PKU Muhammadiyah Hospital in Bantul.

2 METHOD

This is a quasi-experimental research with one group pretest-posttest design approach. The population in this study were 186 nurses and a sample of 52 people with Simple Random Sampling technique. Univariate and bivariate analysis techniques using paired t test analysis.

3 RESULTS

3.1 Univariate Analysis

3.1.1 Respondents Characteristic

The condition description of the respondent gives an explanation regarding the analysis of the research variables. Descriptions of respondents obtained as described in Table 1.

Table 1: Crosstab description of respondents characteristics with Pretest Nurse Knowledge.

No.		Pretest Knowledge			Chi Square
		Good	Enough	Less	
1.	Age				
	a. < 30 y.o	0	4	0	0,409
	b. 31 – 40 y.o	10	23	4	
	c. 41 – 50 y.o	2	9	0	
	Total	12	36	4	
2.	Sex				
	a. Man	1	5	0	0,658
	b. Woman	11	31	4	
	Total	12	36	4	
3.	Education				
	a. DIII	9	30	4	0,511
	b. SI	3	6	0	
	Total	12	36	4	

Source : Primary Data processed, 2018

Based on the table above shows that out of 52 research respondents before being given training, the majority of respondents aged 31-40 years and had enough knowledge as many as 23 people. Nurses at this age are assets for hospitals because they have good performance and productivity for nursing services, at this age nurses have a maturity of soul, are wiser and think more rationally in carrying out work.

Most respondents were female with enough knowledge as many as 31 people and male sex as many as 5 people. This shows that human resources at PKU Muhammadiyah Bantul Hospital are on average female. The number of respondents, mostly female, illustrates that the nurse is identical to a profession that requires a loving instinct and sincerity in caring which is reflected in the instinct of a mother (mother instinct). Nurse profession is more attractive to women than men because women have more instincts to care for themselves and women have more intuitive sensitivity and character.

Based on the table above it is known that the most respondents have DIII education level with enough knowledge as many as 30 people and a few respondents with SI education as many as 6 people. Descriptions of respondents and knowledge after being given training obtained as described in Table 2.

Table 2: Crosstab description of respondents characteristics with posttest nurse knowledge.

No.		Pretest Knowledge		Total	Chi Square
		Good	Enough		
1.	Age				
	a. < 30 y.o	3	1	4	0,230
	b. 31 – 40 y.o	32	5	37	
	c. 41 – 50 y.o	7	4	11	
	Total	42	10	52	
2.	Sex				
	a. Man	3	3	6	0,077
	b. Woman	39	7	46	
	Total	42	10	52	
3.	Education				
	a. DIII	34	9	43	0,422
	b. SI	8	1	9	
	Total	12	36	52	

Source : Primary Data processed, 2018

3.1.2 Frequency Distribution of Nurse Knowledge Level About Installation of Urine Catheters

3.1.2. 1 Knowledge of Nurses Before Training (Pretest)

Frequency distribution for nurse knowledge before being given training in urine catheter installation can be seen in table 3 below:

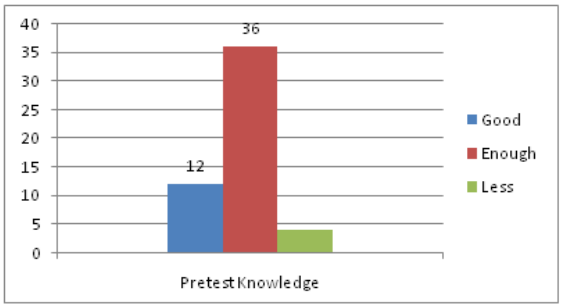

Figure 1: Results of nurse knowledge distribution before training.

Of the 52 nurses, the knowledge of nurses before training in the placement of urine catheters was mostly in the category of enough as many as 36 respondents (69.2%) and good category as many as 27 respondents (25.0%). These results can be concluded that the knowledge of nurses before being given training in the installation of urine catheters is enough.

3.1.2. 2 Nurse Knowledge After Training (Pretest)

Frequency distribution for nurses' knowledge after being given training in the installation of urine catheters:

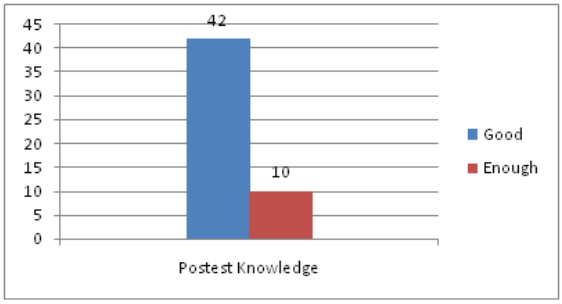

Figure 2: Results of nurse knowledge frequency distribution after training.

Of the 52 nurses, the nurses' knowledge after training in the installation of urine catheters was mostly in the good category as many as 42 respondents (80.8%) and enough categories were 10 respondents (19.2%). These results can be concluded that the knowledge of nurses after being given training in the installation of urine catheters is good.

3.1.3 Normality Test

Before conducting a different test analysis, the normality test is done first by using Kolmogorov-Smirnov (data totaling more than 50) to test whether the data distribution is used normally or not. The results of the normality test can be seen based on the following table 5:

Table 3: Nornality test results.

Variable	P value	Information
Pretest	0.002	Abnormal
Postest	0,000	Abnormal

Source : Primary Data processed, 2018

Kolmogorov-Smirnov results obtained pretest P value of 0.002 <0.05 and posttest 0.000 <0.05 so that the data is said to be not normally distributed. The results of pretest and posttest were not normally distributed, so the hypothesis test analysis used the Wilcoxon Signed Ranks Test.

3.2 Univariate Analysis

The results of pretest and posttest knowledge about the installation of urine catheters are seen in the table below:

Table 4: Wilcoxon signed ranks test table level of knowledge about installation of urine catheters.

Variable	Mean Rank	Sig	Information
Pretest	9,50	0,000	Significant
Postest	26,01		

Source : Primary Data processed, 2018

Table 6 shows that the mean rank value at the time of the pretest was 9.50 while the post rank was 26.01. Significant value obtained 0,000 (p <0,05), it can be seen that there are significant differences in the results of pretest and posttest on the level of knowledge about the installation of urinary catheters by doing training. These results prove that after the intervention, Ho's hypothesis is rejected and Ha is accepted. This means that there is a difference in the nurses knowledge to installation of urine catheters before and after being given training at PKU Muhammadiyah Bantul Hospital.

4 DISCUSSION

4.1 Knowledge of Pre-Training Nuses (Pretest) Installation of Urine Catheters at PKU Muhammadiyah Hospital in Bantul

The results of the study prior to the training of urine catheter installation showed that most respondents had enough category of knowledge as many as 36 people (69.2) and was known 4 people (7.7%) had less knowledge.

The presence of nurses who still lack knowledge about training in urinary catheter placement is supported by the acquisition of the lowest trend value of 0.15 in question number 15, namely "Wash your hands with liquid soap and water then alcohol gel.". Based on the answers of respondents, 44 people answered wrongly. This shows that nurses still do not understand the procedure for the installation of urine catheters.

The level of knowledge and understanding of each nurse is different, it is one of the factors that causes the lack of quality of urinary catheter installation. (Wawan and Dewi, 2011: 12).

The results of research conducted by Shah et all (2017) showed that nurses have less or lack knowledge, control of infection in the use and installation of urinary catheters. Based on the results of the questionnaire it is known that 60% of nurses still do not understand the best practices to prevent CAUTI related to the installation of urine catheters. This indicates that nurses need to be educated and trained more on infection control in the use and installation of urine catheters to avoid mistakes and negligence of nurses.

Efforts that can be made by nurses at PKU Muhamamdiyah Hospital in Bantul to improve their knowledge are through mass media information and through education and training carried out by hospitals by referring to the hospital's Standard Operating Procedure (SOP) as well as the procedure for the installation of urine catheters according to the NHS as additional knowledge of nurses. Nurses can explore more information about urinary catheter fitting according to Standard Operating Procedures (SOP) so that they can avoid the high risk of installing a urine catheter that is harmful to patient safety and is able to improve the quality of PKU Muhammadiyah Bantul Hospital services.

4.2 Knowledge of Nurse After Training (Posttest) Installation of Urine Catheters at PKU Muhammadiyah Hospital in Bantul

Nurses' knowledge after training (postest) of urinary catheter placement in PKU Muhammadiyah Bantul Hospital, showed that most nurses had good knowledge of 42 people (80.8%) and enough categories of 10 people (19.2%) and no nurse has less knowledge. The training of urinary catheter installation at PKU Muhammadiyah Bantul Hospital was able to provide increased knowledge possessed by nurses and after being given training no one had less knowledge.

Training is very important in providing information to the public, especially nurses in the application of patient safety in hospitals. Notoatmodjo (2010) argues that health education or training is an effort so that nurses or health workers behave or adopt health behaviors by appealing, inviting, providing information, giving awareness and so on. Training can have a positive impact in order to increase the knowledge, awareness, willingness and ability of the community to live healthy and actively participate in health efforts.

4.3 Differences in Knowledge of Nurse Before and After Training Urine Catheters Installation in PKU Muhammadiyah Bantul Hospital

Training on urinary catheter placement performed at Muhammadiyah Bantul Hospital by measuring pretest posttest, knowledge of nurses has increased. The results of the analysis of knowledge variables showed a significant value of 0.000 ($p < 0.05$). These results prove that after intervention, there were differences in knowledge of nurses before and after being given training in urinary catheter placement in PKU Muhammadiyah Bantul Hospital. Knowledge of nurses at PKU Muhammadiyah Bantul Hospital after training showed that most had good knowledge of 42 people (80.8%) and enough categories of 10 people (19.2%) and there were no nurses who lacked knowledge.

Previous research on the knowledge of urinary catheter installation conducted by Bidayati (2015). Shows that after evaluation, the knowledge of nurses regarding the installation of urine catheters has a high knowledge of 71.43%, 28.57% of nurses with moderate knowledge, and no nurses who have low knowledge. Increasing nurses' knowledge about the installation of a urine catheter is very important. Especially related to the prevention of the risk of infection as part of efforts to achieve patient safety. This is in accordance with research conducted by Brasaitė (2016) health safety knowledge of patients, one of which is the installation of a urine catheter has a significant positive relationship with all safety attitudes and safety skills carried out by evaluation, so that the knowledge, attitudes and skills of nurses or health workers are very important applied in the hospital.

Increased knowledge of nurses at PKU Muhammadiyah Bantul Hospital which was carried out by training in the installation of urine catheters based on the application of the Standard Operating Procedure (SOP) is very important. Especially related to the prevention of the risk of infection as part of efforts to achieve patient safety. This means that a program to increase nurses' knowledge in properly installing a urine catheter can be part of the patient safety program. The patient safety program is expected to prevent injury caused by the error of the nurse in carrying out the urinary catheter installation at PKU Muhammadiyah Bantul Hospital.

5 CONCLUSIONS

Knowledge of nurses regarding urinary catheter insertion before training was carried out mostly with enough categories. Nurses' knowledge of urinary catheter placement after training was mostly good. There is a difference in the knowledge of nurses in the installation of urinary catheters before and after being given training.

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