

## Original Research Article

# Urethral catheterization: do nurses have adequate exposure?

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## ABSTRACT

**Background:** Urethral catheterization is a vital basic skill which not learnt properly will lead to numerous complications. The aim of the study is to assess the knowledge and practice of urethral catheterization procedure among the nursing students.

**Methods:** This study was conducted by a questionnaire to all the nurses in our hospital. It includes precautionary methods, knowledge of urethral catheterization procedure and the necessity for the demonstration of the procedure to the nurses.

**Results:** A total of 120 nurses were included in the study. During training program, all were able to define and observed urethral catheterization. Overall, 19% did not perform the procedure as undergraduates and only 14% passed >10 urethral catheterization. On assessing the steps, 61% described the steps involved in catheterization and 87% listed the possible complications of catheterization. Meanwhile, 93% revealed the need for practical demonstration of procedure during their training phase.

**Conclusions:** With regards to urethral catheterization, poor practical experience was observed in nurses. An attempt should be formulated to enhance the supervised urethral catheterization training programme conducted for nurses, in order to deliver preventable complications.

**Keywords:** Catheterization, Complications, Nurses, Urinary catheters, Urethra

## INTRODUCTION

Urethral catheterization is a common basic procedure done in all hospitals.<sup>1</sup> It is an aseptic simple procedure which involves passage of catheter into the bladder. One should have good anatomical knowledge of urethra especially in males, in order to prevent the complications. The complications include bleeding, trauma, stricture, urinary incontinence, urinary tract infection, infertility and erectile dysfunction.<sup>2,3</sup> Many centres in the world don't have structural training programme for this simple basic procedure before letting the nurses to perform on

patients. An Irish study showed that the catheter associated urethral trauma is the commonest complication when performed by junior trainee.<sup>4</sup> Hence, it is essential to assess the exposure level of the nurses during their undergraduate periods. The aim of the present study is to assess the knowledge and practice of urethral catheterization procedure among nurses.

## METHODS

This study was conducted by using a questionnaire to all nurses in the PES medical college and hospital, Kuppam. 120 participants were included in the study. It is a

prospective study conducted between June 2019 to March 2020. The inclusion criteria were all the nurses and exclusion criteria were paramedical workers and doctors. The element of the questionnaire includes, what is urethral catheterisation, formal demonstration was carried out or not during nursing school, number of procedures performed and observed, procedure steps, precautionary measures and complications encountered during and after the procedure. Result was analysed using SPSS version.

## RESULTS

120 nurses participated in the study. The age, mean  $\pm$  SD of the participants was  $21 \pm 2.13$  years. Out of which, 92 (77%) were females and 28 (23%) were males. The patient demographic characteristics were shown in (Table 1).

**Table 1: Participants demographic data.**

Parameters	Outcomes
Age in years, Mean $\pm$ SD	21 $\pm$ 2.13
Sex, N (%)	
Male	28 (23)
Female	92 (77)

Ninety one percent had formal urethral catheterization demonstration during undergraduation. 31% were able to describe catheterization procedure including the aseptic component. All participants observed urethral catheterization. However, on categorising, 19% did not perform any procedure and 17% performed more than ten procedures as shown in (Table 2).

**Table 2: Distribution of respondents according to number of procedures.**

Number of procedures performed	N (%)
None	23 (19)
5	31 (26)
5-10	49 (41)
>10	17 (14)

**Table 3: Response to questions on the steps of the procedure.**

Steps of the procedure assessed	Correct response N (%)	Wrong response N (%)
Meatus cleaning	96 (80)	24 (20)
Lubricant type	78 (65)	42 (35)
Lubricant volume	59 (49)	61 (51)
Lubricant application	61 (51)	59 (49)
Signs of bladder entry	82 (68)	38 (32)

On assessing the knowledge with regards to the complications, 87% were able to list the possible

complications and 93% suggested that there is a need for urethral catheter practical demonstration during nursing training period. The response to questions with regards to steps involved in urethral catheterization is depicted in (Table 3).

## DISCUSSION

Urethral catheterization is a standard procedure performed in all the parts of the world. It is a procedure that should be carried out in strict aseptic conditions. Omission of this important component may lead to increase chance of urinary tract infection. Moreover, knowledge of the procedure among nurses are still questionable. Nurses found to be the initial contact among the patients in many centres. Thus, formal training programs should be conducted among nurses in order to enhance the skill and make it a complication free one.

In the current study 91% had formal urethral catheterization demonstration during undergraduation and 31% were able to describe catheterization procedure including the aseptic component. However, this has to be encouraged. In addition to that, observation without performance is not adequate. Under supervision, hands on experience boosts one's confidence level and finalises once own skills that eventually prevent complications.<sup>5</sup>

In current study, only 14% performed more than ten procedures while 19% did not perform any procedure during training period. These results were concurrence with the previous study conducted in the UK i.e. 1 in 5 never performed.<sup>6</sup> A study conducted by Popoola et al in the Nigeria showed highest number of catheterizations of about 93% which is in contrast to our study. Thus, we have to conduct and encourage more training program in order to increase the basic skills to be performed by the nurses.<sup>7</sup>

Urethral catheterization involves certain basic steps which is vital in preventing the complication. These steps were assessed in our study and results demonstrated incompetent knowledge of some essential steps. The most important step is the urethral meatus cleaning. In our study 80% correctly demonstrated correct response which is vital to prevent the translocation of bacteria into the urinary tract.<sup>8</sup> However, this step has to be encouraged and increased to 100%. Another vital step is the lubrication. Lubrication is essential for the frictionless passage of the catheter. It should also have an anaesthetic property as well, in order to relax the urethra and the sphincter. Munalo et al reported 98% of correct mode of application of the lubricant.<sup>9</sup> However, the present study accounts for 65% and 49% for the lubricant type and volume. This poor wisdom will result in trauma to the urethra and hence effort should be taken to improvise this step.

The correct successful response for the signs of bladder entry was demonstrated by only 68% nurses. Moreover,

87% were able to list the possible complications and 93% suggested that there is a need for urethral catheter practical demonstration. This eventually highlights the inadequate exposure of the catheterization procedure during nursing school. Tobias et al conducted a study and found that the stimulation as well as hands on experience on catheterization procedure demonstrated good transfer of wisdom in the clinical practise.<sup>10</sup> Thus, this procedure should be included in nursing curriculum with minimum five procedures performed during training period.

### Limitations

The current study has few limitations like the sample size was too small and it was further planned to include more number of participants in the future.

### CONCLUSION

To conclude, poor practical knowledge of urethral catheterization was demonstrated in nurses. A proper, structural and supervised training, preferably by a urologist in a simulator or live patients would be recommended before commencement as a registered nurse. This is essential to avoid the complications accounted due to this procedure.

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