



Original Article

Knowledge of Nurses Regarding Tracheostomy Care in Tertiary Care Hospital Karachi

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ARTICLE INFO

Key Words:

Assess, Knowledge, Nurses, Tracheostomy, Care

How to Cite:

Ali, R., Shaikh, M. H., Bibi, A., & Khan, N. (2023). Knowledge of Nurses Regarding Tracheostomy Care in Tertiary Care Hospital Karachi : Nurses Knowledge Regarding Tracheostomy. NURSEARCHER (Journal of Nursing & Midwifery Sciences), 3(02). <https://doi.org/10.54393/nrs.v3i02.42>

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Received Date: 24th July, 2023Acceptance Date: 5th September, 2023Published Date: 31st December, 2023

ABSTRACT

Tracheostomy is a surgical procedure in which a surgical opening, called a tracheostomy or stoma, is created in the front of the neck into the trachea (windpipe). This opening provides an alternative airway for breathing when the normal route through the nose and mouth is obstructed or compromised. **Objective:** To determine the level of knowledge of staff nurses regarding tracheostomy care in Tertiary Care Hospitals in Karachi. **Methods:** This cross-sectional study was conducted at a Tertiary Care Hospital in Karachi. Fifty participants were recruited through a convenient sampling method. The data were collected from the fifty male and female participants aged 18-50 years old of staff nurses working in the tertiary care hospital. The adopted questionnaire was used for the data collection. **Results:** The result reveals that 60% were female and 40% were male. Moreover, most nurses 60% had unsatisfactory and 40% had satisfactory knowledge regarding tracheostomy care. **Conclusions:** This shows a need for additional education and training to enhance nurses' general knowledge and proficiency in delivering the best care for patients with tracheostomies. By filling in this information gap, we can improve patient outcomes and lower the chance of problems from tracheostomy care.

INTRODUCTION

Tracheostomy is a surgical procedure in which a surgical opening, called a tracheostomy or stoma, is created in the front of the neck into the trachea (windpipe). This opening provides an alternative airway for breathing when the normal route through the nose and mouth is obstructed or compromised [1]. Moreover, a tracheostomy can make it easier to utilize a ventilator when a person needs long-term or permanent help breathing. This is frequently observed in people with specific respiratory disorders or who have had significant surgeries [2]. In addition, tracheostomy is one of the earliest surgical treatments where a person's natural airway is disrupted and requires long-term ventilation. A capable nurse is needed to provide care and educate patients, their families, and anyone involved in the care to

maintain the airway's patency [3]. Because problems from tracheostomies frequently carry a high risk of morbidity and mortality and the possibility of litigation, malpractice involving tracheostomy care is a significant public health issue. Tracheostomy-related issues caused by subpar care and bad practices often result in patient death [4]. Along with this, patients with tracheostomies frequently need to stay in bed or be immobile for extended periods, raising the risk of developing pressure ulcers [5]. As a result, if pressure is not released or handled correctly, it can cause tissue damage to specific body parts, including the elbows, heels, buttocks, and back. One of the most physically devastating conditions in the modern era, pressure ulcers are the third most costly illness after cancer and heart

disease [6]. The management of tracheostomies requires a multidisciplinary approach, with nurses playing a critical role in minimizing problems such as tube obstruction, infection, and bleeding [7]. According to a study on the multidisciplinary team's involvement in treating patients with tracheostomies, there have been more instances of poor treatment of tracheostomy patients, as shown by several well-known reports from registries of recorded patient self-incidents. It is crucial to watch the situation closely and react appropriately when a clinical occurrence involves a tracheostomy. Tracheostomies that failed included insufficient professional training, insufficient supplies of equipment, and poor oversight and responsiveness to clinical problems [8]. Furthermore, patients with tracheostomies frequently have an infection, subcutaneous emphysema, bleeding, and other potentially deadly consequences such as inadequate ventilation and airway obstruction. Poor bedside nursing techniques and understanding can result in the patient's life-threatening difficulties with tracheostomy care [9]. Since nurses spend more time with patients while providing tracheostomy care, nurses significantly influence the success of tracheostomy patients. Despite this, virtually little was known about or practiced by nurses in tracheostomy care [10]. This study evaluates nurses' knowledge of tracheostomy care at a particular referral hospital in Karachi, Pakistan.

METHODS

A cross-sectional study was conducted from March 2023 to June 2023 with utilizing a convenient sampling method. The sample consisted of 50 nurses who provided bedside care in a tertiary care hospital. The sample size was calculated through open Epi. The inclusion criteria for the study were as follows: the participants had to be staff nurses, caregivers of bedridden patients, free from medical diseases that could interfere with patient care, and willing to participate. Exclusion criteria included caregivers who refused to participate and those who were not medically fit. An adopted study tool was used for the data collection [1]. The questionnaire has 22 items, including four sociodemographic and 18 knowledge-based topics. Participants with a score of less than 50% were thought to have an unsatisfactory level of knowledge; those who received a score of between 50% and 100% had satisfactory knowledge. Participants were approached, provided with information about the study, and asked to complete a demographic data collection form and a written consent form. The data collection took three days, and the response rate was 100%. Some staff members had limited time to complete the questionnaire, but they completed it at the end of the day. Some staff were initially reluctant to participate due to fear of job loss or lack of knowledge, but

they agreed after reassurance. Statistical analysis was conducted using the SPSS version 26.0. Descriptive statistics were used to analyse the participants' level of knowledge regarding Tracheostomy care. The results were reported using frequency and histogram graphs. Ethical considerations were taken into account by ensuring participants' autonomy and maintaining their information's confidentiality. Approval was obtained from the institute and hospital authorities, and participants were informed about the voluntary nature of their participation and their right to refuse to answer questions. Participants were asked to sign a consent form, and the gathered data were kept secure and confidential.

RESULTS

Table 1 shows the distribution of participants based on gender, education, experience, and age group. Of the sample, 40% were male, and 60% were female. Regarding education, the majority had a nursing degree, with 24% holding a BScN, 38% being registered nurses (RN),. However, Practical nurses (PN) were assessed 8.0 % Licensed practical nurse (LPN) were 10.0%, and 28% having a midwifery diploma (MW). In terms of experience, 60% had less than three years of experience, while 40% had more than three years. Age-wise, 50% of participants were in the 20-25 age group, 30% were in the 26-30 age group, and 20% were above 30.

Table 1: Demographic information n=50

Variables	Frequency (%)
Gender	
Male	20(40)
Female	30(60)
Education	
BScN	12(24)
RN	19(38)
MW	10(20)
PN	4(8)
LPN	5(10)
Experience	
Less than three years	30(60)
More than three years	20(40)
Age group	
20-25	25(50)
26-30	15(30)
Above 30	10(20)

Figure 1 shows the overall level of knowledge. Most nurses, 60%, had unsatisfactory, and 40% had satisfactory knowledge regarding tracheostomy care.

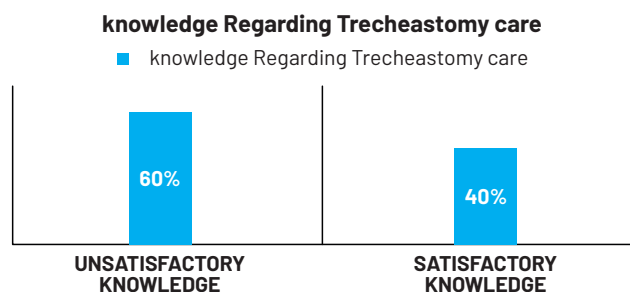


Figure 1: Levels of knowledge

DISCUSSION

Care for patients with artificial airways established by tracheostomies is crucial to nursing practice [11]. To care for patients safely and effectively, nurses must have the necessary skills and knowledge in tracheostomy care [12]. It is necessary to evaluate nurses' knowledge regarding tracheostomy care. The present findings revealed that the majority of the nurses, 60% had unsatisfactory knowledge regarding tracheostomy care. A study from Saudi Arabia found that 59% had inadequate awareness of problems and indications associated with tracheostomies [13]. Similarly, a study from India shows that most participants had inadequate knowledge of tracheostomy care. The study suggested a lack of tracheostomy care knowledge among nurses. A systematic intervention led by otolaryngologists that include didactic lectures, instructional films, and hands-on training can enhance all three dimensions and positively affect the results of post-tracheostomy patient care [14]. Additionally, another study from Oman found similar results and showed low competency and knowledge regarding tracheostomy care. The study highlights the importance of staff education for post-operative tracheostomy care to increase care and reduce adverse events. A qualitative re-audit is needed to improve the care after training [15]. In addition, another study from India found that according to statistical analysis, 40% had inadequate knowledge before the test [16]. Another study from Turkey demonstrated that we must acknowledge the lack of a standardized education program for tracheostomy care and that nurses' understanding of tracheostomy care was below expectations. Educational programs are required to close the knowledge gap [17]. During their professional education, nurses may receive varied training on tracheostomy care [18, 19]. There may be gaps in nurses' knowledge and abilities due to the lack of standardized curricula and protocols relevant to tracheostomy care, which could have a negative impact on patient outcomes [20]. Furthermore, the present study found that 40% had satisfactory knowledge regarding tracheostomy care. In contrast, a study from Saudi Arabia demonstrated that only 2% had good knowledge [13]. In addition, a study from Pakistan shows that only 14.7% of

respondents indicated they had adequate knowledge [21]. Teaching tracheostomy care may not receive enough time or funding in nursing education programs. Because of this lack of focus on specialized areas like tracheostomy care, nurses may not have had enough exposure to this part of patient care, which can result in inadequate knowledge and abilities. Registered nurses who work in all units, including internal medicine, surgical wards, and intensive care units, can address concerns about knowledge and practice gaps through in-service continuing professional development. This will help identify these deficiencies' fundamental causes [22].

CONCLUSIONS

The findings revealed that the majority % of the nurses, 60% had unsatisfactory and 40% had satisfactory knowledge regarding tracheostomy care. This shows a need for additional education and training to enhance nurses' general knowledge and proficiency in delivering the best care for patients with tracheostomies.

Authors Contribution

Conceptualization: RA

Methodology: RA, NK, MHS

Formal Analysis: AB

Writing-review and editing: RA, NK

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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