

## 'A CRITICAL ANALYSIS REGARDING TRACHEOSTOMY CARE AMONG CARE GIVER: A CASE STUDY'

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### ABSTRACT

**Introduction:** In critical care settings, tracheostomy care is crucial to the management of patients who need continuous mechanical ventilation. The need for this study on tracheostomy care is driven by the critical role that effective airway management plays in the recovery and long-term health of patients requiring this procedure. Tracheostomy patients often face significant challenges with a tracheostomy tube. For such patients to have the best results and reduce these dangers, appropriate treatment and supervision are crucial

**Aims and objective:** To critically analyze regarding tracheostomy care among care giver. To identify managing and maintaining tracheostomy tube by the caregiver. To assess and analyse in depth tracheostomy care given by care giver.

**Methodology:** The researcher used a qualitative approach for this study, employing the case study method as the chosen research design. The main focus of the research is on the variable of tracheostomy care. Data was gathered from a specific area in Pune city. The sample included one caregiver of a patient with a tracheostomy tube from the selected region. For selecting this participant, a non-probability purposive sampling technique was applied.

**Results:** The study explored caregivers' lived experiences in managing tracheostomy care by analyzing their verbatim responses, revealing key emotional and practical challenges. Initially, caregivers faced significant fear and anxiety, especially about complications like tube blockages. Later, caregivers adapted and gained confidence through experience. One-week hospital training was inadequate. Many struggled with emergency situations like tube dislodgement due to insufficient training. Despite this, caregivers maintained good infection control through regular cleaning. Caregivers need longer training, emergency management education to improve care and reduce stress.

**Conclusion:** Effective tracheostomy care requires caregiver training, emotional support, and clear communication to improve patient outcomes and caregiver well-being.

**Keywords:** Critical, Analysis, Tracheostomy care, Care Giver, Case Study

### INTRODUCTION

In critical care settings, tracheostomy care is crucial to the management of patients who need continuous mechanical ventilation. Assuring direct access to the breathing pathway, this vital treatment entails making an incision in the neck to insert a breathing device into the passageway called the trachea.<sup>1</sup>

Furthermore, the case study identifies areas for improvement in clinical protocols and patient management strategies. For instance, the timely and effective management of complications such as tube dislodgement or blockage is essential to prevent adverse outcomes. The

study also emphasizes the importance of patient education and psychological support, as tracheostomy patients often face significant emotional and social challenges.<sup>2</sup>

A study involving 50 countries found that approximately 13% of patients with acute respiratory distress syndrome (ARDS) had a tracheostomy throughout the period they were in an intensive care unit (ICU).<sup>3</sup>

In India, tracheostomy is a common procedure performed in various healthcare settings, including tertiary care hospitals and specialized centers. A study conducted across multiple hospitals in India revealed that the primary indication for tracheostomy was assisted ventilation, accounting for approximately 68.1% of cases. The study also highlighted that the most common complications associated with tracheostomy were subcutaneous emphysema (10.6%) and tube displacement (5.6%).<sup>1</sup> The overall complication rate was 21.2%, with a mortality rate of 4.4%. These statistics underscore the importance of standardized tracheostomy care practices to minimize complications and improve patient outcomes.<sup>4</sup>

Pune, a major city in Maharashtra, is known for its robust healthcare infrastructure and numerous medical institutions. The city has several hospitals and clinics that provide tracheostomy care, catering to both urban and rural populations. High-quality tracheostomy treatment is guaranteed by Pune's health care institutions, which are manned by qualified medical specialists and furnished with cutting-edge medical equipment. The city's hospitals follow evidence-based practices and guidelines to manage tracheostomy patients, focusing on infection prevention, airway management, and patient education.

### **NEED OF THE STUDY**

The need for this study on tracheostomy care is driven by the critical role that effective airway management plays in the recovery and long-term health of patients requiring this procedure. Tracheostomy patients often face significant challenges, including risk of infection, airway obstructions, and the psychological impact of living with a tracheostomy tube. For such patients to have the best results and reduce these dangers, appropriate treatment and supervision are crucial.<sup>6</sup>

Bilung et al. (2024) showed that a targeted tracheostomy care protocol reduced complications like wound infection, hypoxia, and tube blockage, while boosting nurses' knowledge and practice—leading to fewer patient issues and shorter hospital stays.<sup>7</sup>

Hyzy RC, McSparron JI, 2024, Tracheostomy: Justification, Significance, and Consequences to offer a thorough rundown of the justification, approved uses, and prohibited uses of tracheostomy. The study underlined the vital importance of evidence-based recommendations for tracheostomy care, stressing the necessity of appropriate choosing patients and surgery scheduling to reduce problems and enhance results.<sup>8</sup>

Ho et al. (2012) found that tracheostomy improved weaning from ventilation and lowered mortality in critical care patients. The study also highlighted the need to improve care practices for even better outcomes.<sup>9</sup>

Varghese and Roy (2023) reported that assisted ventilation was the main reason for tracheostomy, with a 21.2% complication and 4.4% mortality rate. They emphasized the need for standardized care to lower risks and boost outcomes.<sup>10</sup>

Tracheostomy care is complex and demands skilled caregivers to prevent serious complications like infections, airway blockages, and bleeding. However, caregivers—whether nurses or family members—often face challenges due to limited knowledge, inconsistent training, and

lack of standardized protocols. This study is needed to critically analyze the current practices, identify gaps in caregivers' knowledge and skills, and highlight areas for improvement. Understanding these factors will help develop better training programs and protocols, ultimately enhancing patient safety and recovery outcomes in tracheostomy care.

**MATERIALS AND METHODS**

The researcher used a qualitative approach for this study, employing the case study method as the chosen research design. The main focus of the research is on the variable of tracheostomy care. Data was gathered from a specific area in Pune city. The target population consisted of caregivers of patients who had undergone a tracheostomy were discharged with tracheostomy tube. The sample size was till the data saturation which was one. The sample included one caregiver of a patient with a tracheostomy tube from the selected region. For selecting this participant, a non-probability purposive sampling technique was applied. Section A collected demographic data of caregivers and patients, including age, gender, education, employment, residence, diagnosis, and medical history. Section II used semi-structured interviews with open-ended questions to explore experiences, tracheostomy management, care assessment, nutrition, and suggestions for improvement from both patients and healthcare professionals.

**RESULTS**

**Section-I Identify managing and maintaining tracheostomy tube by the care giver.**

**Table No. 1: General Understanding & Experience**

Codes	Sub themes	Themes	Verbatim
Worry Apprehension Nervousness Concern Uneasiness	-Fear of something unavoidable happening - If something goes wrong - What I do it opposite to what I learnt	Initial Fear and Anxiety	The respondent expresses fear and anxiety when first providing tracheostomy care, especially after discharge. <i>"I feel fear, Anxiety initially while providing TT care."</i>
Concern in care outcome Frequently going to hospital Things going wrong	-Facing trials - Difficult task -Overcoming hurdles	Challenges in Tracheostomy Management	Concerns about tube blockage leading to frequent hospital visits. Patient vomiting after feeding and medication. <i>"Initially I fear about Tube block so we visit hospital 2-3 times."</i>

<ul style="list-style-type: none"> <li>-Repeated action</li> <li>-Learning to change in care provision</li> <li>- Learning modifications</li> <li>-Understanding through doing it</li> </ul>	<ul style="list-style-type: none"> <li>-Adjustments</li> <li>-Learning from doing repeatedly</li> <li>-Learning from experience</li> <li>-Doing same things over and again</li> <li>-Discovering through action</li> </ul>	<p>Adaptation and Learning</p>	<p>Over time, the caregiver gains confidence and finds ways to manage challenges.</p> <p><i>"After practicing, we manage it."</i></p> <p>Adjustments made in feeding and medication schedule to prevent vomiting.</p>
<ul style="list-style-type: none"> <li>-Not prepared fully</li> <li>-Need more training</li> <li>-Need more time to learn</li> </ul>	<ul style="list-style-type: none"> <li>-Repeated training need</li> <li>-Continuous guidance</li> <li>-Hand holding                             <ul style="list-style-type: none"> <li>a. Readiness preparation</li> <li>b. Readiness preparedness</li> </ul> </li> </ul>	<p>Training and Preparedness</p>	<p>Received one week of training in the hospital. Felt that the training was insufficient.</p> <p><i>"I receive training in hospital for 1 week. It was not sufficient."</i></p>

The exploration and analysis of themes and sub-themes were based on a thorough examination of caregivers' lived experiences in managing tracheostomy care. By closely analyzing participants' verbatim responses, key emotional and practical challenges emerged, such as initial fear and anxiety, concerns about complications, and the need for ongoing training and support. Repeated patterns in the data highlighted caregivers' evolving journey—from apprehension and worry to gradual adaptation and increased confidence through hands-on experience. The study captured both the psychological impact and the practical difficulties caregivers face, providing a holistic understanding of their experiences. This process-oriented approach allowed for the identification of meaningful themes that reflect not only the challenges but also the learning and preparedness needed to provide effective tracheostomy care.

Caregivers initially face significant fear and anxiety when providing tracheostomy care, especially after discharge, due to concerns about potential complications like tube blockages. Managing care presents various challenges, including frequent hospital visits for tube blockages, dealing with patient vomiting after feeding or medication, and relying on trial-and-error to resolve issues. Over time, caregivers adapt and build confidence through practice and experience. However, the one-week hospital training is often insufficient, underscoring the need for more comprehensive, hands-on training and ongoing support after discharge. Many caregivers struggle with emergency situations, such as tube dislodgement, due to a lack of proper knowledge and training in handling these events.

Despite this, caregivers show a good understanding of infection control by maintaining regular cleaning routines. The emotional and psychological toll on caregivers, particularly parents, is significant, highlighting the need for counseling and psychological support services. Professional guidance, especially from healthcare experts like dietitians, is vital in managing patients' nutritional needs and feeding schedules. Communication also poses challenges, as patients with tracheostomies often have speech limitations, necessitating alternative communication methods. Caregivers suggest improvements such as longer training periods, education on emergency management, and psychological support to enhance their caregiving skills and reduce stress.

## **DISCUSSION**

The study is comparable to a descriptive study on A Systematic Review of Patient and Caregiver Experiences with a Tracheostomy conducted by Ivana Nakarada-Kordic (2018). The findings indicated that there aren't many published studies on tracheostomy experiences for patients and caregivers, particularly in community settings. In order to develop strategies and offer resources to enhance the quality of care and general quality of life for tracheostomy patients and their caregivers both in the hospital and in the surrounding area, a deeper understanding of these encounters is required.<sup>11</sup>

The present study result showed that the Caregivers often experience significant fear and anxiety, especially after discharge, due to concerns about complications like tube blockages. Common challenges include frequent hospital visits and trial-and-error solutions for issues such as patient vomiting after feeding or medication. Over time, caregivers gain confidence and improve their skills through repeated practice and learning from experience. However, the one week of hospital training provided is deemed insufficient, highlighting the need for more comprehensive, hands-on training and continuous post-discharge support.

Caregivers also struggle with managing emergencies, such as tube dislodgement, due to a lack of knowledge and training on tube reinsertion. While caregivers demonstrate a good understanding of infection control through structured daily cleaning routines, the emotional and psychological impact of caregiving, particularly for parents, emphasizes the need for psychological support and counseling services. The involvement of healthcare professionals, such as dietitians, plays a crucial role in managing the patient's nutritional needs and feeding schedule. Additionally, patients with tracheostomies often face speech limitations, requiring caregivers to explore alternative communication strategies. Caregivers recommend extended training sessions, emergency management education, and psychological support to improve their caregiving abilities and reduce stress.

## **INTERPRETATION**

Improving tracheostomy care needs longer training, post-discharge support, clear feeding guidelines, emergency tube reinsertion training, and alternative communication methods. Regular monitoring, infection prevention, psychological support, and dietitian guidance are also important. Easy manuals and refresher courses help keep caregivers confident.

## **CONCLUSION**

The analysis of tracheostomy care among caregivers underscores the necessity for comprehensive training, emotional support, and effective communication strategies. Addressing these areas can significantly improve the quality of care for patients and enhance the well-being of caregivers. Healthcare providers should prioritize developing and

implementing programs that offer robust training, psychological support, and practical resources to assist caregivers in managing the complexities of tracheostomy care.

#### **DECLARATION BY AUTHORS:**

**Ethical Approval:** The study was approved by the institutional ethics committee of Bharati Vidyapeeth (Deemed to be University), Pune. The study participants were briefed about the purpose and nature of the study and written informed consent was obtained before data collection.

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**Conflict of Interest:** The authors declare no conflict of interest.

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