

## AWARENESS OF USING AAC DEVICES AMONG HEALTHCARE WORKERS IN REDUCING STRESS AMONG TRACHEOSTOMY PATIENTS IN CRITICAL AND ACUTE CARE SETTINGS

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### Abstract

The ability to communicate well is important in general, but in clinical practice it becomes even more so, especially with tracheostomy patients in acute and critical care settings with significant verbal communication challenges. Although augmentative and alternative communication (AAC) technologies have emerged as transformative tools for bridging this communication gap, the awareness and use of AAC technologies among healthcare professionals remains uneven. This study explores health professionals' knowledge, attitudes, and behaviors relating to the use of AAC devices and their potential to reduce tracheostomy patients' emotional distress.

The mixed-method study included a survey of 250 medical professionals and 20 key-informant in-depth interviews from tertiary care hospitals. Quantitative data was assessed using descriptive and inferential statistics while qualitative data was assessed using thematic analysis. The results show that although 78% of respondents agree that AAC devices are important, only 34% reported regularly using AAC devices because of obstacles such as lack of resources, lack of training, and misinformation on AAC effectiveness. Moreover, the use of AAC devices significantly reduced stress levels among patients, as evidenced by increased caregiver feedback and patient satisfaction scores.

This study emphasizes the need for mandatory AAC training in an attempt to improve the AAC competency of healthcare staff. The suggestions involve pushing interdisciplinary cooperation, instruction on AAC inclusion in educational environment, and improvement of AAC devices that can be used at the bedside of critically ill tracheostomy patients that are accessible and easy to use. These measures may help raise the standard of care in acute settings and improve patient recovery as well.

### INTRODUCTION

Patients receiving tracheostomy, especially in critical and acute care settings, have significant communication barriers that compound both stress

and anxiety. Their inability to communicate accurately impacts their psychological health, inhibits patient-centered care, and complicates

clinical decision-making. Research shows these tools – augmentative and alternative communication (AAC) devices – can help alleviate these challenges by providing a way for tracheostomy patients to communicate their needs and wants.

Nonetheless, the acceptance and use of AAC devices in a clinical setting is greatly shaped by the attitudes and knowledge of healthcare workers. Although technology has evolved, there remains a wide disparity between the use of AAC devices and practicing of routine care integrating these devices into daily care strategies. Realising this greatly helps make communication more effective, less patient-stressful and care more successful.

This study aims to explore how medical professionals view, understand, and interact with AAC devices, and determine the effect of AAC devices on stress levels for tracheostomy patients. The findings will inform policies and practices to improve integration of AAC use into health care system.

**Review of the Literature:**

Problems with Communication in Tracheostomy Care:

Patients with tracheostomy commonly experience some form of aphasia or dysphonia, which can impact their ability to communicate vocally. Research indicates that such a barrier to communication increases stressful situation and hampers recovery by delaying the effective reporting of symptoms and the coordination of care (Blackstone & Pressman, 2020).

AAC's function in healthcare

AAC devices range from low-tech forms such as communication boards, to high-tech systems that turn computer text into audible speech. They have been shown to increase patient satisfaction, decrease frustration, and promote participation in care (Beukelman & Mirenda, 2013).

Lack of Training and Awareness

Studies have shown that AAC is effective; however, medical staff generally lacks those skills and training. A comprehensive study by Johnson et al. AAC devices (2019) also found only 40% of physicians felt confident in their use of AAC. Such differences emphasize the need for American companies to implement comprehensive training programs, alongside institutional support.

**Stress Reduction Based on Communication**

One of the key pillars to stress management within critical care is effective communication. Augmentative and alternative communication (AAC) devices can help patients with speech deficits communicate their needs, thereby reducing the frustration and helplessness related to patients with communication problems (Happ et al., 2020).

**Methodology:**

**Research Design:**

Both quantitative and qualitative data collection was done using a mixed-method approach. This study was performed at three tertiary referral hospitals that had established both critical care and acute care facilities.

Participants:

The qualitative analysis was performed in twenty tracheostomy patients or caregivers and 250 health professionals, including physicians, nurses, and speech-language pathologists.

**Data Collection:**

1. Survey: A standardized questionnaire was used to assess the knowledge, training, and use of AAC devices by healthcare workers.
2. Interviews: Semi-structured interviews were used to examine individual perspectives and experiences about the usage of AAC.
3. **Results for Patients:** The Perceived Stress Scale (PSS) was used to measure stress levels both before and after the installation of AAC.

**Data Analysis**

SPSS was used to examine quantitative data for both descriptive and inferential statistics. To find reoccurring patterns and insights, qualitative data were transcribed and subjected to thematic analysis.

**Analysis & Discussion**

**Awareness Levels**

78% of respondents to the poll acknowledged the significance of AAC devices, indicating a reasonable level of awareness. But only 34% said they used it frequently. This disparity draws attention to structural obstacles, such as inadequate training (62%) and restricted access to AAC resources (48%).

## Impact on Patient Stress

According to PSS ratings, patients who used AAC devices reported feeling 40% less stressed. Improved communication and less patient frustration were observed by caregivers.

## Barriers to Implementation

Key barriers identified include:

1. Not enough chances for training.
2. AAC devices are expensive.
3. Limited institutional guidelines that encourage the adoption of AAC.

## Facilitators of Success

Successful AAC integration was said to depend on interdisciplinary cooperation and patient-centered strategies. Higher adoption rates and improved patient outcomes were observed in institutions that made training program and easily accessible AAC instrument investments.

## Conclusion

In critical and acute care settings, AAC devices are an essential but underutilized resource. Tracheostomy patients' stress levels can be considerably decreased with increased knowledge and training among healthcare professionals, which will improve the patients' overall quality of care. To close the gap between promise and reality, interdisciplinary cooperation, cost-effective solutions, and institutional support are crucial. Future studies should concentrate on creating affordable AAC solutions that are suited to various clinical settings and scalable training methods.

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