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Research paper

Characteristics of patient communication and prevalence of communication difficulty in the intensive care unit: An observational study

Amy Freeman-Sanderson, PhD [a, b, c, *]
Katherine Morris, Bachelor of Speech Pathology [b]
Mark Elkins, PhD [d, e]

[a] University of Technology Sydney, Graduate School of Health, Australia
[b] Speech Pathology Department, Royal Prince Alfred Hospital, Australia
[c] Speech Pathology, Faculty of Health Sciences, University of Sydney, Australia
[d] Sydney Medical School, University of Sydney, Australia
[e] Centre for Education & Workforce Development, Sydney Local Health District, Australia

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ABSTRACT

Purpose: To summarise the patient communication status in an intensive care unit (ICU), including methods of communication used and the frequency, degree and nature of communication breakdown.
Materials and methods: A multidisciplinary daily ward audit was conducted on ten consecutive weekdays in a 30-bed general ICU of a tertiary Australian hospital. Data included patient demographics, patients' mode of communication and the level of difficulty in communicating. Descriptive statistics and means (standard deviation)/medians (interquartile range) were used to summarise the data.
Results: Over the audit period, data were collected from 87 patients (median age 58 years, interquartile range 43 to 67; 60% males), equivalent to 232 occupied bed days. Patients from non–English-speaking backgrounds accounted for 14% of the cohort, with Mandarin the most common non-English language. Altered cognition occurred on 11% of bed days. Staff reported difficulty in communicating with patients on 35% of bed days, with an inability to communicate with patients in 49% of these cases. Alternate modes of communication were reported, with gesture the most common, but they were not used with all suitable patients.
Conclusions: About one-third of the caseload in the ICU experienced difficulty in communicating. While alternate communication methods were reported, they were not used with all patients. A multidisciplinary approach to enhance communication ability may be beneficial.

1. Introduction

A lack of effective communication between patients and hospital staff can result in decreased understanding of clinical status, poor comprehension of treatment requirements, and decreased patient satisfaction with admission to hospital.[1] Communication between patients and health care professionals in the intensive care unit (ICU) can be further impacted by various physical and environmental factors.

Physical factors impacting communication abilities that have been described by critically ill patients include critical illness neuropathy; presence of artificial airways; altered auditory and tactile sensation; and altered cognitive functioning.[2,3] Environmental factors that have been described include artificial noises from clinical equipment, bright lighting, and a lack of focused staff training in enhancement of communication, among others.[2,3]

The impact of altered communication function has been described as one of the most stressful events of hospital admission,[2] with patients reporting a direct impact on their mood,

* Corresponding author at: Graduate School of Health, University of Technology Sydney, PO Box 123, Broadway NSW 2007, Australia
E-mail address: Amy.Freeman-Sanderson@uts.edu.au (A. Freeman-Sanderson).

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motivation, and stress levels.[1] Effective patient and staff communication within an ICU is required for provision and delivery of care and comfort to patients.[4] Patients have associated positive memories with staff attempts to assist and enhance their communication abilities during ICU.[3] Altered communication during hospital admission is reported to have an ongoing impact beyond hospital discharge, with patients reporting it as a factor that contributed to their decreased health-related quality of life after hospital discharge at 6 months[5] and beyond.[6]

Verbal and nonverbal communication can be supplemented by augmentative and alternative communication (AAC) modes. The spectrum of AAC is wide, ranging from no use of technology (in forms such as picture charts) to highly technology-dependent methods, such as an eye gaze system. Happ et al.[7] identified that a combination of speech pathology consultation and directed training of AAC devices resulted in the most effective patient communication within the ICU. In a systematic review published by ten Hoorn et al.,[8] alternate communication methods such as communication boards, specialised tracheostomy tubes, an electrolarynx, and high-tech augmentative communication devices improved the effectiveness of communication between staff and mechanically ventilated patients. However, specific barriers to their use were identified and included poor physical function, altered cognitive status, and a lack of training in device use.

While altered communication function due to artificial airways and enhancement of communication using AAC devices during the delivery of mechanical ventilation has been well described, there is a paucity of research documenting communication function across the complete ICU cohort, including nonventilated patients. Understanding the current practice of patient communication is a priority research area to enable addressing barriers and improve provision of care.[9] While clinical and demographic data for ICUs are collected and reported in Australia,[10] the status of patient communication ability is not included in this data set. As such, the prevalence and frequency of the communication status, languages spoken, and communication impairments within Australian ICUs are unknown, making it difficult to determine the staff, equipment, resources, and research needed to address the problem.

The purpose of this study was to describe the characteristics of patient communication in the ICU across a 10-day time period including the following: the diversity of languages, type of communication, and nature and incidence of communication difficulty as reported by nursing staff.

2. Material and methods

A prospective cohort study was conducted in a tertiary Australian ICU. All 30 general ICU beds were included in the audit. A once daily multidisciplinary ward audit (two members) was conducted over a 2-week period. Medical, nursing, and allied health staff including speech pathology and physiotherapy completed the ward audits. During the set audit period, all patients admitted to the general ICU, and their allocated nursing staff members were recruited. The audit tool was developed by members of the ICU team including medical, nursing, and allied health professionals. Standardised tools were not used for the audit as the aim was to describe the current practice and patient communication status within the ICU. Items included in the final tool were developed once consensus was achieved among the ICU team. The audit tool was trialled, with all data items tested and finalised before commencing the multidisciplinary ward audit. Data collected from the patients' medical notes included gender, age, admitting medical diagnosis, length of stay (ICU and hospital), and spoken language. Data collected on the multidisciplinary ward audit included the presence of mechanical ventilation, documentation of altered cognitive function, and communication status. For the purposes of this study, altered cognitive function included diagnosis of delirium, encephalopathy, and/or confusion. Data on the mode of communication, difficulty of communication, and use of AAC were collected from the nursing staff caring for the patient during the ward audit. A numerical rating scale was used for rating communication difficulty. The scale ranged from one (some difficulty) to six (unable to communicate). Data for mechanical ventilation and delirium (within the preceding 24 h) were collected from the medical notes.

All data were recorded during the ward audit and stored securely in a custom-built Research Electronic Data Capture (REDCap) database.[11] REDCap is a secure, web-based application designed to support data capture for research studies, providing 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources.

2.1. Data analysis

Descriptive statistics were used to describe demographic data. Age was calculated in years and reported as the patient age on the initial day of the audit. Medical diagnosis was determined from the admission summary. Length of stay was calculated in days, from the day of admission to discharge. Presence of mechanical ventilation, altered cognitive function, and use of AAC were identified from any medical note documentation (24 h preceding the ward audit). Communication difficulty scores were grouped in the following way for analysis—some difficulty (score 1 or 2), moderate difficulty (score 3 or 4), and extreme difficulty (score 5 or 6). Means and standard deviations were used to describe parametric data, and medians and interquartile ranges (IQRs) were used for nonparametric data. Ethical approval was given by Sydney Ethics Review Committee (RPAH Zone) Protocol X17-0143.

3. Results

A total of ten multidisciplinary ward audits were conducted over the 2-week period. Two staff members (nursing, medical, speech pathology, and physiotherapy) were present on all audits, with a speech pathologist present for 100% of audits. Data collection occurred as scheduled for all admitted patients during the 2-week period, resulting in 232 bed days of data collected from 87 participants.

3.1. Participant demographics

Demographic data were complete for all participants. The cohort demographics were 60% male and median age of 58 years (IQR 43 to 67). The admitting diagnosis varied (Fig. 1), with the primary

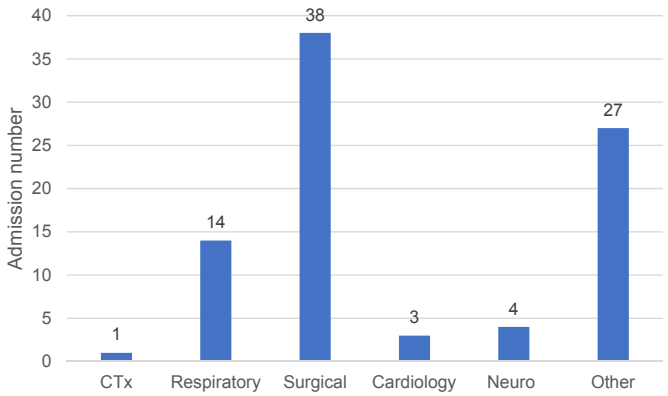

Fig. 1. Medical category. CT_X, cardiothoracics.

medical diagnosis being surgical (44%). Admitting diagnoses under the category 'other' included gastroenterology; infectious diseases; drug and alcohol; renal; ear, nose, and throat; trauma; and obstetrics. The median ICU length of stay was 5 days (IQR 2 to 10 days), and median hospital length of stay was 16 days (IQR 8 to 66 days).

Patients were from culturally and linguistically diverse backgrounds with 14% of patients from non–English-speaking backgrounds. Nine non-English languages were reported, with Mandarin, Greek and Vietnamese the most commonly reported languages spoken.

The prevalence of invasive mechanical ventilation was 41% across the total audit period. Altered cognitive function, which was documented by diagnosis of delirium, confusion, or encephalopathy, was recorded on 25 bed days (11%).

3.2. Communication status

From a total of 232 bed days, communication data were available for 98% (n = 228) of all admitted patients during the audits. Missing data were extracted from the medical notes for the remaining 2% (n = 4). Patients were reported to communicate verbally 83% (n = 189) of the time. A reduced level of consciousness, as defined by Glasgow Coma Scale < 8, was the documented reason for the lack of verbal communication on 11 bed days. AAC methods were reported to be used on 26 equivalent bed days, with 14 of these reported to be used by nonverbal patients. The most used method of AAC for enhancing the communication ability was gesture, followed by mouthing, and use of a smart personal device (phone/tablet).

3.3. Communication breakdown

Staff reported difficulty in communicating with patients on 79 bed days (35%), with the degree of difficulty ranging from some difficulty to extreme difficulty. Less than half of these patients were receiving mechanical ventilation at the time of reported communication difficulty. A rating of extreme difficulty or inability to communicate at all with the patient was reported in 49% (n = 31/79) of these cases. The frequency and range of reported communication difficulty is listed in Fig. 2.

4. Discussion

To our knowledge, this is the first audit published to document the characteristics of patient communication in ICU over a 2-week period including the language spoken, mode, use of AAC, and staff-reported communication difficulty. The audit showed that nursing staff report difficulty in communicating with patients 35% of the time, with almost half of these reported difficulties rated as extreme difficulty or complete inability to communicate. These results reinforce previous qualitative studies, which report communication breakdowns and difficulties in the hospital environment.[5] Granja et al.[5] reported that 55% of patients (n = 189/347) recalled communication difficulties in ICU, with 59% (n = 111) of these associated with increased stress. Any difficulty in communication can have a major impact on the provision of effective exchange of information between patients and staff for care needs within the ICU setting.[12] Communication deficits during the hospital admission have been found to be one of the items

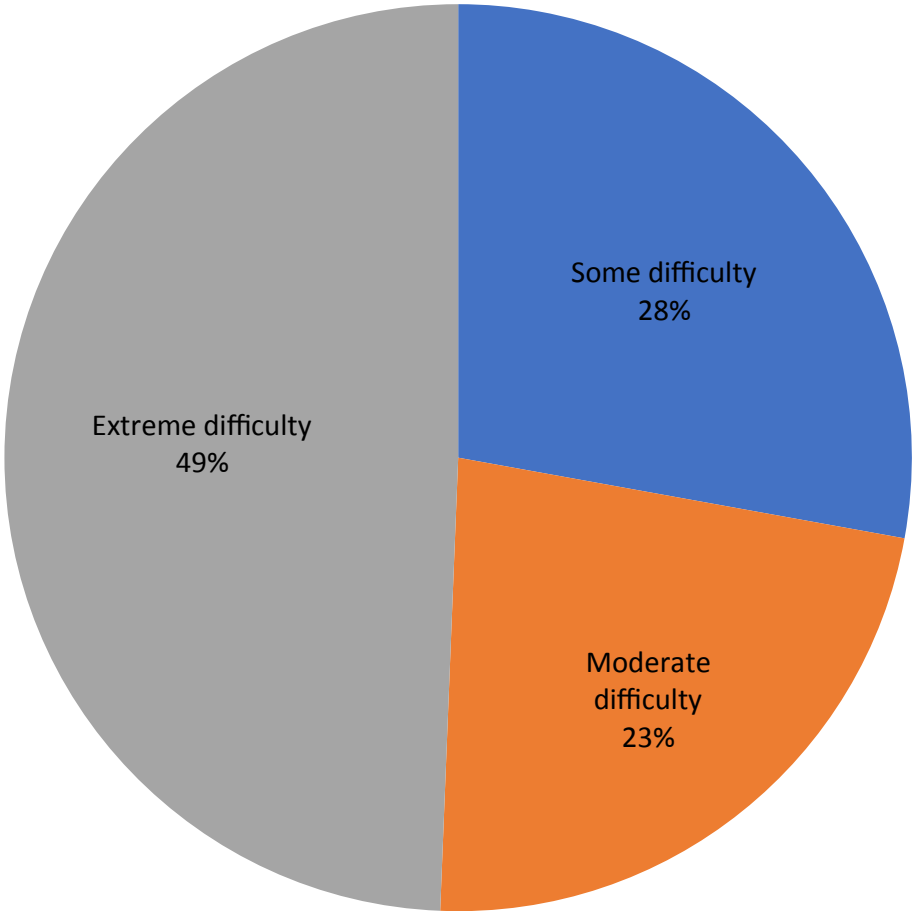

Fig. 2. Communication difficulty.

correlated with poorer health-related quality of life 6 months after hospital discharge.[5]

In the absence of successful verbal communication, alternative methods were reported to be used 11% of the 232 bed days audited. The most used modes of AAC were gesture, mouthing, and use of a personal electronic device. Interestingly, AAC methods were used by patients with and without artificial airways, which reinforces that communication support may be required for all patients within ICU, despite their ventilation status. This previously has been identified for patients only receiving mechanical ventilation.[8] The AAC methods reported in this audit are frequently used in daily communication and reinforce the idea that patients want and rely on naturalistic forms of communication.[13] Use of smart technology and smart devices as modes of communication is likely to increase as these have become more prevalent in the general population. The foci of the literature around the use of smart phones within the provision of health care are limited to the use of patient messaging for appointment reminders[14] and use of the camera for assisting with diagnosis.[15] Therefore, this is an area for increased research in regard to enhancing patient communication within the ICU and hospital setting.

Understanding the barriers to patient communication has practice implications within an ICU. The collection of patient perceptions of communication would have added to the richness of data. Patients report a need for various communication options because of the mobility restrictions,[12] lack of communication options and lack of ability to learn new communication systems due to poor concentration levels.[16] Preadmission patient training in AAC, such as picture boards, where possible, results in improved use and satisfaction of these systems.[17] Access to communication charts (including basic needs and care procedures) in a variety of languages would be beneficial to improve communication effectiveness with patients who are from culturally and linguistically diverse speaking backgrounds. A combination of provision of speech pathology management in the ICU and access for staff training in communication enhancement and enablement, including the use of AAC, would result in enhanced patient communication.[7]

The clinical audit achieved its aim to describe the current communication status within an ICU. Several factors, including diagnosis, languages spoken, presence of artificial airways, altered cognition, and the lack of alternate communication options, were possible factors contributing to ineffective ineffective communication exchange between staff and patients. Research on communication interventions that address these factors is a priority area to enhance patient care in this environment.

The study had some limitations. The collection of data about patient perception of communication would have added to the richness of data; however, this was outside the scope of the audit. In addition, a numerical scale was used to collect ratings from the staff members in regard to the level of communication difficulty. This was a subjective rating scale and did not offer definitions for levels of communication breakdown. Presence of delirium was subjectively reported, and a patient was scored as delirious based on a broad range of descriptors rather than a score from a validated tool.

Use of a validated tool for rating communication would be beneficial in future research into communication within the ICU environment. Consideration should also be given to the implementation of specific supportive communication aids for patients from culturally and linguistically diverse speaking backgrounds, given that 14% of participants from the audit did not speak English as a primary language. Training and tailored communicative support for patients and staff may also increase communication success, as reported by Happ et al.[7] Finally, further research on the impact of delirium and altered cognition on communication effectiveness would provide increased understanding and direction for future care.

5. Conclusions

Over a third of patient care episodes to ICU involved difficulty in communication between patients and staff, with half of these interactions ranked as occurring with extreme difficulty or an inability to communicate at all. While alternate communication methods were reported, they were used less than a quarter of the time. Further research into multidisciplinary management, including provision of speech pathology, may be beneficial to enhance patients communication ability.

Ethical approval

The ethical approval was given by Sydney Ethics Review Committee (RPAH Zone) Protocol X17-0143.

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CRediT authorship contribution statement

All listed authors significantly contributed to the study design and manuscript. **Amy Freeman-Sanderson** was responsible for conception of the study and the original draft of the manuscript. All authors contributed to the final revisions and editing.

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