


Communicating to Non-Speaking Critically Ill Patients: Augmentative and Alternative Communication Technique as an Essential Strategy

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Abstract

Introduction: Communication with hospitalized patients is crucial to improve the quality and safety of health care.

Methods: The study assessed the communication methods used by nurses while communicating to non-speaking critically ill patients. The participants included staff nurses working in ICU, CICU, HD units of neuro- surgical, orthopedic, medical and oncology wards. Purposive sampling technique was used to recruit a total number of 194 nurses. The communication methods used were assessed by a questionnaire comprised of a list of 21 strategies used to communicate with non-speaking patients.

Results: The most commonly used strategies were reading the patient's mouthing words, encouraging the patient by telling them that they are doing well and nurses helping them to get better, assessing the patients for their communication ability, "thumbs up" to indicate "yes", "shake head" indicating "no", use OK, or point to body parts, speaking slowly and waiting for the patient's response, spending time to listen patiently to what the patient say and touching the non-speaking critically ill patient when the nurse speaks with the patient.

Conclusion: The study reported that the nurses used variety of communication strategies while communicating to non-speaking critically ill patients. However very few nurses used Augmentative and alternative communication strategies to communicate to non-speaking critically ill patients. The study recommends the importance of establishing Augmentative and Alternative Communication strategies in the hospitals.

Keywords

communication strategies, nurses, non-speaking critically ill patients

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The critically ill patient is conceptualized as a person who requires intensive nursing and medical care due to an instability, vulnerability and complexity created by an internal disease or traumatic or biochemical condition (Garwood, 2015). Because of this, critically ill patients tend to have a high risk for developing other complications, including the risk of death (Serpa Neto et al., 2018). In most clinical settings, critically ill patients are treated in Intensive Care Units (ICUs) which may or

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may not be structured as separate units for cardiac, trauma, surgical, neurologic, pediatric and neonatal patients. As these patients' needs are complex and unique, ICUs are often staffed by highly specialized healthcare workers to ensure better patient outcomes (Boniatti et al., 2011; Wilcox et al., 2020). In recent years, the prevalence of patients who become critically ill has increased. The patients with different comorbidities including diabetes mellitus, chronic obstructive pulmonary disease, cancer, end-stage renal disease, end-stage liver disease, HIV infection, and obesity most often become critically ill and this leads to higher mortality rates (Esper & Martin, 2011).

In the United States for instance, every year about 5.7 million patients are admitted for monitoring and care in a critical care unit. The most common reason for their admission to ICU is respiratory problems (Ervin et al., 2018). Similarly, in China Zhao et al. (2018) reported increased incidence of ICU admissions for various reasons including pregnancy related admission. In like manner, ICU and High Dependency Unit (HDU) admission rates and mortality are also on the increase in Gulf Cooperation Council (GCC) countries, namely Kuwait, Bahrain, Oman, Qatar, Saudi Arabia and the United Arab Emirates due to complications associated with Non-Communicable Diseases (NCDs). This trend may be most attributed to the unhealthy lifestyles being adopted in the region, including high calorie diet, inadequate physical activity, lack of attention to disease prevention and management, inadequate treatment options to manage NCDs and weak primary care infrastructure (Ahmed et al., 2017; Moradi-Lakeh et al., 2017). Furthermore, it is important to note that at the time of the study, whilst research data was available on the causes and estimates of critical care related mortality, there was limited published information indicating the overall number of critically ill patients admitted to ICUs and HDUs in the GCC countries.

Patients admitted to ICU and HDU often suffer from an illness or a condition with an uncertain prognosis, usually presenting with abnormal vital signs and major complications, including the loss of consciousness. To sustain their lives and ensure that they are cared for with dignity, critically ill patients usually require specialist care including advanced respiratory and other system and organ support (Boniatti et al., 2011). For providing a comprehensive and holistic care, nurses' need to have expertise, technical and communication skills as well as display caring behavior that is critical to relieving the patient of fear and worries (Boniatti et al., 2011; Hofhuis et al., 2008). Therefore, to ensure desirable health outcomes, communicating effectively with critically ill patients in the clinical area is an essential component of holistic care (Campbell & Happ, 2010; Ten Hoorn et al., 2016). In ICU and HDU, the disease

process and the intubation deprives patients of the ability to speak and to communicate with members of the healthcare team. This reduced ability to communicate effectively with their caregivers and others in a hindered manner is frequently associated with development of severe emotional reactions among critically ill patients. The commonly reported emotional reactions include frustration, stress, anxiety, and depression (Baumgarten & Poulsen, 2015; Karlsson et al., 2012).

In addition, the recovery period for patients admitted in ICU is prolonged and often associated with complications (Olsen et al., 2017). This complication might be attributed to the fact that the health care environment in these units presents several challenges that complicate the provision of patient- and family-centered care for some patients especially the long-stay patients (Minton et al., 2018). Many patients thus experience post ICU complications such as anxiety, depression and post-traumatic stress disorder, all linked to suppressed communication needs. Indeed, researchers have identified that the most at risk population of ICU patients for such complications are ventilator-dependent patients although nearly all critically ill patients experience communication difficulties (Radtke et al., 2012; Ten Hoorn et al., 2016).

The most common communication challenge experienced by ventilator-dependent critically ill patients who are most often non-speaking is their inability to communicate their needs to nurses and other care providers (El-Soussi et al., 2015). These patients' inability to express themselves fully is exacerbated by the inadequate implementation of standardized and modern communication methods in critical care units. As previously articulated, whilst assistive communication tools exist, they are seldom used to augment the care of ICU patients, resulting in inadequate nurse-patient communication. Overall, this increases the level of stress and anxiety in patients, their families and the ICU team (Grant, 2015). This communication challenge also causes patients and their families to experience frustration, confusion, fear and distress because ICU teams often misunderstand them (Black et al., 2013; Patak et al., 2006). The importance of communicating effectively with ICU and HDU patients is emphasized because effective communication between caregivers and patients preserves their self-esteem and self-identity. This in turn helps to enhance patients' optimism and well-being, which translates into faster recovery (Alasad & Ahmad, 2005). In fact, recent studies show that effective communication helps to minimize the development of post ICU and HDU complications like anxiety and distress in patients and their families (Shin et al., 2020).

These findings therefore show that communication is an important aspect to be considered by nurses and other health care providers while providing care to critically ill patients in ICUs. Communicating in an

appropriate manner and identifying patient needs are critical in providing high quality care (Shin et al., 2020). In comparison, communication efficiency of nurses is especially important since nurses usually spend the most time with patients compared to other healthcare providers. This is critical because communicating effectively with patients benefits both patients and nurses. In fact, Slatore et al. (2012) reported that effective communication with patients increases their satisfaction levels, decreases their anxiety and allow patients to address their worries and concerns directly to the nurses thereby improving clinical decision making for the nurses. Furthermore, effective communication allows patients and families to be involved in the care of the patient, leading to patient-centered care (Grant, 2015; Olsen et al., 2017).

In order to ensure quality communication between clinicians and patients within ICUs, nurses and others therefore need to use different methods of communication to enable them to understand their patients' needs, especially for non-communicative intubated patients who frequently struggle to make themselves understood (Black et al., 2013; Karlsen et al., 2019). It is therefore vital for clinicians to remember that while mechanically ventilated patients are voiceless, they still communicate constantly to others including by use of silence (Rodriguez et al., 2016; Watzlawick et al., 2011). This therefore means that since all human behavior within interactional situations has a message of value, nurses and others need to communicate and collaborate with patients in a way that makes patients and their families to feel understood, appreciated, and involved in patient care (Karlsen et al., 2019).

As a remedy to these communication difficulties, Khalaila et al. (2011) and Grossbach et al. (2011) as well as Happ et al. (2011) describe that nurses often resort to traditional communication methods such as lip reading, facial expression, gestures, and head nods to communicate with their non-speaking patients. However, while these methods may help to bridge the communication gap to a certain extent, they are often too time-consuming and often fail to meet all the communication needs of patients and nurses, thereby resulting in frustration for both patient and caregivers (Otuzoğlu & Karahan, 2014; Rodriguez et al., 2012). Augmentative and alternative communication (AAC) strategies are thus a vital solution to overcome the communication barriers associated with nonspeaking critically ill patients (Sharpe & Hemsley, 2016). AAC strategies are methods used to facilitate speaking with non-speaking patients or those with communication problems. This innovative strategy uses communication board including picture boards, alphabet boards and new technology such as computers and smartphones to facilitate exchange of information between

patients and their caregivers in ICU environments (El-Soussi et al., 2015).

However, whilst modern alternative methods to communicate with the critically ill patient such as AAC exist, nurses and other health care providers make little to no use of these devices for patients in the ICUs and other HDUs in hospitals (Istanboulian et al., 2019; Khalaila et al., 2011; Ten Hoorn et al., 2016). There is an evidence that low usage of AAC persist despite the knowledge that they not only help nurses to communicate more effectively with non-speaking and intubated patients, but that they also increase patient's satisfaction (El-Soussi et al., 2015; Mobasheri et al., 2016; Ten Hoorn et al., 2016). Consequently, nurses in critical care areas experience psycho-emotional distress due to their inability to communicate efficiently with their patients. Similarly, the patients also feel frustrated due to their inability to express their needs to nurses and others fully (Khalaila et al., 2011).

Globally, the low usage of AAC strategies may be due to the lack of innovative ways or simply the lack of interest among nurses and other caregivers to communicate with non-speaking critically ill patients (Sharpe & Hemsley, 2016). A similar situation exists in Oman where the authors found no studies that reported the use by nurses of ACC in communicating to non-speaking critically ill patients in GCC countries including in Oman. This lack of research evidence exists despite reported difficulties faced by nurses and non-speaking patients in communicating their needs to each other in various hospitals in Oman. In addition, currently, there is neither a policy that guides nurses and other clinicians on how to use innovative methods of communication, nor are there any special training sessions available to facilitate nurse-patient communication, especially for non-speaking patients situations. Therefore, to better understand the extent of the problem, the investigators set out to evaluate the communication strategies ICU nurses in Oman use to effectively communicate with their non-speaking critically ill patients.

Materials and Methods

Purpose and Design

The researchers used a cross sectional descriptive survey research design to assess the existing communication methods used by nurses in ICU as well as in HDU to communicate with their non-speaking critically ill patients.

Setting and Population

The study was conducted in a 750 bed- tertiary-level public university teaching hospital in Oman. The target population were nurses working in the ICU, CICU and

HD units of neurosurgical, orthopedic, male and female medical and female oncology wards of the university teaching hospital.

Sample and Sample Characteristics

The investigators used purposive sampling technique to recruit 194 nurses from a total population of 245 nurses. The sample size was calculated by using Slovin's formula based on $e = 0.05$ margin of error. The required sample size was 170 nurses. However, 194 nurses were enrolled in the study. The inclusion criteria limited participation to: a) nurses working in ICU, CICU, and HD units; b) nurses who cared for non-speaking critically ill patients for more than one year; and c) nurses who agreed to participate in the study and provide informed consent. The study excluded: a) nurses with less than 1-year of clinical experience in dealing with critically ill patients, b) nurses in administrative positions, and c) trainee nurses such as student nurses and intern nurses.

Data Collection Instrument

A structured questionnaire consisting of two parts was used to collect data. The first part of the questionnaire was participants' demographic characteristics, while the second part assessed the methods nurses used to communicate with non-speaking critically ill patients. The demographic data section had five items: age, gender, clinical experience, education, and work area, while the section to assess nurses' communication methods used an instrument with 21 questions. This instrument was prepared referring to the previous literatures. The instrument was pretested and found reliable. The reliability of the tool was 0.78. The participants responded to the 21-items based on a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree". All the questions were clear.

Ethical Considerations

Ethical approval was obtained from the Research and Ethics Committee of College of Nursing, Sultan Qaboos University and the Medical Research and Ethics committee, College of Medicine and Health sciences, Sultan Qaboos University, Oman. Thereafter, formal permission for data collection was obtained from the Directorate of Nursing, Sultan Qaboos University Hospital, Oman. Prior to commencement of data collection, the researchers explained the study purpose, data collection procedures and answered any of participants' questions before enrolling them into the study. The participants were told they had the right to stop their participation at any time without penalty. They were also informed there were no risks involved in participating in the study. The data collection began after participants

filled the informed consent form. After data collection, all questionnaires were checked for accuracy and data sheets were coded and kept confidential, under lock and key in a pass word protected file by the principal investigator to enhance the confidentiality.

Data Collection Procedure

After obtaining ethical clearance, the investigators pre-visited the study settings to meet the head nurses to obtain permission for the study activities. The information gained during the pre-visit was used to develop a suitable schedule for data collection. On data collection days, researchers approached nurses who were on duty in ICU, CICU and the HDUs of the selected wards who met the inclusion criteria for permission to participate in the study. After fully addressing their questions, nurses who agreed to participate in the study were given consent forms. The researcher then accompanied the nurses to the seminar room of their unit to complete the questionnaire in a calm atmosphere. After completing the questions, the researcher checked the questionnaire for completeness before each participant left the data collection point.

Data Analysis

The Statistical Packages for Social Sciences (SPSS) software program- Version 24 was used for data entry, data cleaning, data management and data analysis. The computerized data was compared to the original data from each survey tool to assess the accuracy of data entry. During data cleaning, the investigators looked for consistency, eliminated errors, and checked on the values of the variables. Frequency tables were run to monitor for missing data and outliers. Descriptive statistics such as frequency, percentage, mean and standard deviation were used to describe the sample characteristics, and the communication strategies adopted by the nurses.

Results

A total of 194 nurses participated in the study and a response rate of 100% was achieved after receiving all the questionnaires from participants. As shown in Figure 1, the mean age of the nurses who participated in the study was 36.37. Of the 194 nurses who participated in the study, 73.2% were female nurses while 26.8% were male nurses. Majority of the nurses (40.2%) had 6-10 years of experience in dealing with non-speaking critically ill patients. Slightly over one-third (32.5) percentage of the nurses had more than 11 years of experience in dealing with such critically ill patients. In terms of their level of education, most participants, 59.3% completed a Bachelor's degree in nursing while the remaining 35.6% completed Diploma in

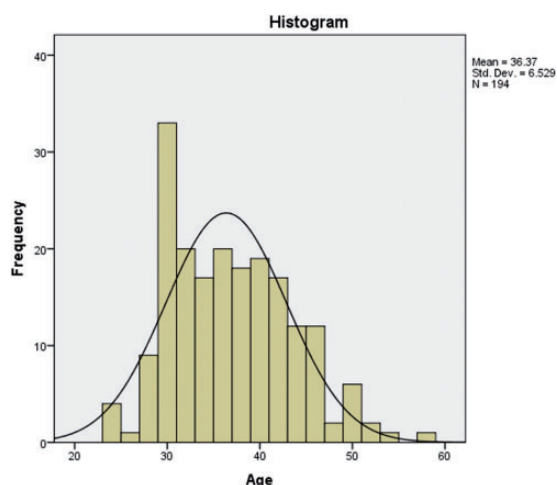


Figure 1. Distribution of Age of Nurses Participated in the Study.

Nursing. In regards to the place of work, 42.3% of the nurses worked in ICUs and CICUs while the rest, 57.7% of the nurses worked in the HDUs of male medical, female medical, orthopedic, neuro-surgical and female oncology wards (Table 1).

As shown in Table 2, the various communication methods used by nurses are presented with their individual means and the standard deviation scores. The results of the study revealed that nurses utilized a number of communication strategies. The most used communication strategy was: “I usually try to read patient’s mouth-ing words” with a mean of 4.06 and SD of 0.91. In addition, many nurses also used the strategy: “I usually encourage patient by telling them that they are doing well and that I am here to help them get better” (Mean: 4.39, SD: 0.61). Another communication strategy used was: “I usually introduce myself to non-speaking critically ill patients” (Mean: 4.09, SD: 0.84). Furthermore, a large majority of nurses reported using the communication strategy: “I usually assess patients for their communication ability” (Mean: 4.31, SD: 0.75). In addition, some nurses used the strategy: “I usually use signals to communicate with non-speaking critically ill patients such as “thumbs up” indicating “yes”, “shake head” indicating “no”, use OK, or point to body parts” (Mean: 4.15, SD: 0.76). The study further revealed that few nurses used the communication strategy: “I usually speak slowly and wait for patient’s response” (Mean: 4.3, SD: 0.59). Similarly, the strategy: “I usually have time to listen patiently to what the patient says” was used by the nurses (Mean: 4.25, SD: 0.70). Another strategy that was reported by a vast majority of nurses was: “I usually touch the non-speaking critically ill patient when I speak with him/her” (Mean: 4.23, SD: 0.79). The study also found that a small percentage of nurses used the strategy: “I usually use alphabet board to facilitate

Table 1. Demographic Variables of Nurses (N = 194).

Demographic variables	Frequency	Percentage
Gender		
Female	142	73.2
Male	52	26.8
Years of experience		
1–5 years	53	27.3
6–10 years	78	40.2
> 11 years	63	32.5
Educational level		
Diploma	69	35.6
Bachelor’s degree	115	59.3
Master degree	6	3.1
Others	4	2.0
Working unit		
ICU/CICU	82	42.3
Male medical	28	14.4
Female medical	17	8.8
Ortho/Neuro	32	16.5
Female oncology	34	17.5

communication”, (Mean: 2.68, SD: 1.00). Likewise, the strategy: “I usually use picture board to facilitate communication” was used by a few nurses (Mean: 3.01, SD: 1.08). The study further revealed that a scanty number of nurses utilized the strategy: “I usually write or draw to facilitate communication” (Mean: 2.95, SD: 1.08). This observation was comparable to that of the communication strategy: “I usually use electronic devices to facilitate communication” (Mean: 2.73, SD: 1.11). In addition, other communication strategies used by nurses included using “yes and no questions”; “using pointing and gesture movements”; “teaching patients about their condition and why they are unable to speak”; “orienting non-speaking critically ill patients to unit environment, date and time of the day”; “making communication plan for their patients, and collaborating with non-speaking critically ill patients in choosing a communication method”. The study further revealed that only a few nurses used body movement such as fist for no, pointing, and oral sounds to communicate with their non-speaking patients. Another communication strategy adopted by the nurses was: “speaking slowly and waiting for the patient’s response”. The study also found that some nurses experienced severe challenges with finding reliable communication strategy. As a result, some of them expressed that: “No reliable method is established” as they cared for their non-speaking patients (Mean: 3, SD: 0.95). In summary, these results demonstrate that the vast majority of the participants used traditional communication strategies to communicate with their non-speaking critically ill patients in the ICUs, CICUs and HDUs of the hospital.

Table 2. Communication Methods Used by Nurses in SQUH (N = 194).

S. no	Communication methods used by nurses in SQUH	Mean	Std. deviation
1.	I usually use Yes/No questions in communication.	3.51	1.17
2.	I usually notice Patient pointing/gesturing as a method for communication	3.91	0.87
3	I usually try to read patient mouthing words.	4.06	0.91
4.	I usually use alphabet board to facilitate communication	2.68	1.00
5.	I usually use picture board to facilitate communication	3.01	1.08
6.	I usually Write or draw to facilitate communication	2.95	1.08
7.	I usually use electronic devices to facilitate communication	2.73	1.11
8.	I usually teach patient about his condition and why he is unable to speak.	3.96	0.87
9.	I usually encourage patient by telling them that they are e.g. doing well and/or I am helping them to get better	4.39	0.61
10	I usually introduce myself to non-speaking critically ill patients.	4.09	0.84
11	I usually orient non-speaking critically ill patients to unit/environment	3.78	0.99
12	I usually orient non-speaking critically ill patients to date and time.	3.76	1.00
13	I usually assess patients for their communication ability.	4.31	0.75
14	I usually have communication plan for my patient.	3.95	0.81
15	I collaborate with non-speaking critically ill patients in choosing a communication method.	3.72	0.85
16	I usually use signals to communicate with non-speaking critically ill patient such as thump up for yes, shake head for No, use OK, or point to body parts.	4.15	0.76
17	I usually use body movement; fist for no, pointing, oral sounds to communicate with patients.	3.61	1.06
18	I usually speak slowly and wait for patient's response	4.3	0.59
19	I usually have time to listen patiently to what the patient say.	4.25	0.70
20	I usually touch the non-speaking critically ill patient when I speak with him/her	4.23	0.79
21	No reliable method is established	3	0.95
	Total score	78.07	8.57

Discussion

In healthcare settings, patient-centered communication improves health care outcomes of the patients and enhances patient satisfaction. The importance of communication in patient care is emphasized because effective communication between health care providers and patients enhances the safety and quality of patient care (Campbell & Happ, 2010; Grant, 2015). However, due to their disease condition or its treatment process, many non-speaking critically ill patients are unable to communicate verbally. This means that such patients are unable to communicate their real needs to nurses and other caregivers, usually due to the intubation or their physical weakness.

This inability of patients to communicate their needs to their caregivers and nurses leads to high level of emotional reactions including increased levels of frustration, depression, stress and anxiety (Baumgarten & Poulsen, 2015; Carroll, 2007; Engström et al., 2013; Guttormson et al., 2015; Karlsen et al., 2019; Khalaila et al., 2011; Menzel, 1998; Patak et al., 2004; Tate et al., 2012). However, despite this knowledge, authors Ten Hoorn et al. (2016) and Istanbulian et al. (2019) report that whilst various modern communication tools are available for health care providers to communicate to their

patients more effectively, these communication tools are not frequently used by nurses and others as expected to communicate to their non-speaking patients in the ICUs, CICUs and HDUs.

Our study found that very few nurses used alphabet board and picture board to facilitate communication with their critically ill patients. This was surprising since the use of alphabet board and picture board is highly recommended as mechanically ventilated patients experience high level of frustration when they are not able to communicate their needs. Scholars have reported that communication boards are very helpful and an effective strategy to facilitate communication between patients and their caregivers and nurses (Patak et al., 2004). In fact, besides facilitating communication, picture boards with twenty-two pictures also improves patient's satisfaction with the care they receive (Stovsky et al., 1988). With advancement in mobile communication, mobile devices help to improve communication between non-speaking patients and their caregivers while removing environmental barriers (Sharpe & Hemsley, 2016). Similarly, alphabetical board help to improve the quality of communication between health care providers and the patients thereby reducing their frustration (Otuzoglu & Karahan, 2014). It was clear

that few nurses used the available AAC strategies to enhance their communication with the non-speaking critically ill patients. These findings call for more efforts to increase the adoption of AAC strategies to ensure more effective nurse-patient communication.

The adoption of multiple AAC strategies is recommended because research evidence shows that patients who use several of these communication approaches simultaneously tend to be more successful in communicating their needs (Dowden et al., 1986). This means that the nurses need to provide non-communicative patients various communication methods. Our study identified that the nurses used various methods to communicate such as “thumbs up” indicating “yes”, “shake head” indicating “no”, uses OK, or pointed to body parts. In addition, the nurses also used body movement; fist for no, pointing, and oral sounds to communicate to their patients. Furthermore, the nurses also spoke slowly and waited for their patient’s response. It was evident in our study that the nurses utilized several traditional approaches simultaneously to help patients who have difficulty in communicating their needs. While this approach has some advantages, our findings show that nurses did not use any of the modern communication approaches to exchange information with their assigned patients. This observation is consistent with the observation by researchers Khalaila and colleagues (2011) as well as Ten Hoorn and colleagues (2016) who both reported in their studies that frequently many healthcare workers are reluctant to adopt and utilize assistive devices for communicating with their patients in the ICUs and other HDUs in hospitals. This reluctance to adopt best strategies that enhance communication with non-speaking patients means many patients end up feeling frustrated and misunderstood during their care in the ICUs.

In essence, ineffective communication between nurses and patients results in poor healthcare outcomes in critically ill patients. This is especially true when the nurses establishes no reliable communication method with their non-speaking critically ill patients, as was reported by some nurses in our study. As a remedy to this challenge, systematic and standardized augmented methods are required to be developed and adopted to communicate effectively with non-speaking critically ill patients. The authors found that while the nurses in our study adopted several traditional models of communication, this practice was inconsistent with the current research evidence that recommends the adoption of AAC strategies for effective communication with non-speaking critically ill patients. The authors further recommend wider adoption of AAC strategies in ICUs, CICUs and HDUs. This is because AAC strategies improve the quality of care patients receive while at the same time they promote

the wellbeing of the nurses, thereby reducing frustration and stress for both patients and nurses.

Limitations and Recommendations

In terms of limitation of the study findings, our study findings have limited generalizability since data was collected from only one tertiary level public hospital in Oman. To address this limitation, the authors recommend the study to be replicated in various settings in Oman to increase its generalizability. Secondly, although we identified various communication strategies used by nurses, we could not find any standardized communication strategy used by all the nurses in the study. We therefore recommend identifying the most suitable standardized communication strategy that would be beneficial in communicating to these patients. A key finding is that the effectiveness of the identified communication strategies are subjective in nature and their effectiveness is not yet explored. Since AAC strategies are more objective and leave less room for misinterpretation of what the patient is trying to communicate, we recommend that future studies should focus on the effectiveness of AAC in meeting the communication needs of non-speaking critically ill patients. Finally, to facilitate communication between non-speaking critically ill patients and nurses, clear policy, work instructions and training regarding proven communication methods are urgently needed in the critical care units of tertiary hospitals in order to improve patient outcomes.

Conclusion

Our study reported that very few nurses used alphabet board, picture board, writing or drawing, as well as modern assistive electronic devices, while majority used the traditional approach such as lip reading. The non-adoption of modern assistive devices resulted in some nurses expressing that they had no reliable method of communication with their patients, despite studies showing that AAC strategies increase the level of patient’s satisfaction and decrease distress for both nurses and their patients. In conclusion, since patient satisfaction is an important measure of quality patient care, we recommend identification of hospital specific proven AAC strategies and then training nurses to use them as standard measure to communicate with non-speaking critically ill patients.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval

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