

Hearing the Silent Voices of COVID-19 Patients on Mechanical Ventilators: The Use of Augmentative and Alternative Communication (AAC) Approach

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Abstract In an emergency setting while the patient on a ventilator with light sedation, effective functional and therapeutic communication with patients is mandatory to promote their well-being and to prevent the clinical frustration of healthcare workers. Through an examination of relevant literature, this paper aims to step up the type of communication problems faced, based on the patients' experiences during ventilation treatment. The paper offers a scoped review and then proposes a viable approach for the development of more effective communication channels between the healthcare workers and the patients.

Keywords COVID-19, Ventilators, Communication Model, Empathetic Design, Empathy, Pandemic

1. Introduction

In an emergency setting like ICU, while the patient on a ventilator with light sedation, a functional effective and therapeutic communication with patients is an obligatory assessment tool. As being aware of surrounding but incapable to communicate and express the demand is a destructible feeling for patients and frustrate the healthcare worker. Good communication between healthcare providers and patients actively contributes to creating valued service that helps the service provider listen to the patients and understand what they feel and what is their needs. Breen et al. (2019), Karlsen et al. (2019).

2. Literature Review

2.1. The Essential Need for Patient Communication as Part of Quality Healthcare Services

Communication patients on a ventilator are a very vital tool in the assessment process as accuracy in assessing, monitoring, and reporting of changes in the health status of patients is a key domain of vital health care Guttormson et al (2015). as long that speech communication cannot always be achieved, it wise to establish tools and skills that allow

effective communication than to promotes positive clinical outcomes and to prevent clinical frustration of healthcare workers. Karlsen et al. (2019).

2.2. Importance of Communication of Effective Patient-Healthcare Staff Communication during Infectious Diseases

COVID-19 pandemic constitutes a major public health problem worldwide, which still consider mysterious infectious disease with its symptoms; the way of transmission and natural course of it, especially in a situation where there is neither medicine nor vaccine for it, efficient communication becomes even highly critical in the order set up on every patient compliance, and follow-up the disease progress which then will reduce both side anxiety and build their confidence. On the contrary, ineffective communication of a patient potential contributor diminishes the amount of health care and also loses patients' satisfaction. Karlsen et al. (2019), Buheji (2018).

2.3. Importance of Empathetic Communication with COVID-19 Patients

COVID-19 pandemic brings a huge challenge to healthcare worker particular those in ICU were dealing with the patient on a ventilator, in this undefined and extremely stressful situation, there is persistent need to maintain the functional efficient communication with the patient where the healthcare worker approach the communication with empathy which is a key ingredient to helping alleviate the stress of patient when they recognize that they are being cared and there feeling understood, Karlsen et al (2019). On the other hand, Feeling empathy allows the healthcare

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worker to provide better care without overwhelmed by their anxieties during times of stress. Empathy is an essential tool practice in health care as it reported that it “influence patient satisfaction, clinical outcomes, and professional satisfaction” and raise feeling in the patient that they are secured. Shin *et al.* (2020).

2.4. The Need for Effective Communication for Patients on Ventilation

Communication is a basic human need it is a necessary process in any case, whether there is talk or not. Using various forms of augmentative and alternative communication (AAC) methods (AAC refers to all forms of communication, other than speech, which used to facilitate clinical interaction) will add value in the assessment process and meet individualized patients’ needs through facilitating more effective communication with patients on ventilator patients when the patients are unable to speak. When there are different categories of AAC available, it is an important issue to assess communication needs in an attempt to select each type of communication method for different intents and purposes, which might appropriate alternative communication strategies accordingly with the patient-level of sensorium and cognitive function Rodriguez *et al.* (2016).

Hoorn *et al.* (2016) emphasized the importance of communicating with conscious and mechanically ventilated critically ill patients. These ventilator-dependent patients in the ICU often experience difficulties with one of the most basic human functions, namely communication, due to intubation. Thapa *et al.* (2019), Ten Hoorn *et al.* (2016).

When patients requiring artificial ventilation, but unable to communicate create a novel experience for patients and produces problems for medical staff. Baumgarten *et al.* (2015). Communication with ICU patients is considered one of the major challenges for effective therapy. Therefore, Te Hoom *et al.* (2016) seen that there needs to be communication channels development to ensure safe and suitable nurse-patient interactions during patients’ intubation or have tracheostomies. Mechanically ventilated patients experience a high level of frustration when communicating their needs. The inability of ventilated patients to communicate found to be correlated also with experiences of sleeplessness, fear, leading to both ‘physical and psychological suffering’ due to. Kefang Wang *et al.* (2008).

Feeling in control, talking to patients ideally makes them feel the control they feel is losing outside the home as they control their life there and this is what contributes to their sense of greater responsibility. Ten Hoorn *et al.* (2016).

2.5. Augmentative and Alternative Communication AAC

AAC contact with a COVID-19 patient is very important because it contributes to reducing social spacing. COVID-19 is mainly spread among people who have been in close contact (within about two meters or six feet) for a long time. Shin *et al.* (2020).

Although the risk of severe disease may vary from person to person, anyone can obtain and publish COVID-19.

Everyone has a role to play in slowing the spread and protecting themselves, their families, and their community.

Augmentative communication, also known as alternative communication, employs a wide range of communication forms to assist those with impairments in producing and understanding speech or writing.

This study provides an insight into the importance of using augmentative alternative communication for Covid-19 patients who are on a ventilator. Since speech therapists are keen on how patients communicate with others as well as expressing their feelings and needs during the position of ventilation, they are keen on developing communication boards and the best techniques that patients have that will enable them to communicate in the best possible and understandable way.

The AAC boards that have been designed will not be limited only to patients with Coronavirus because it contains branches to know the location and level of pain, the patient's feelings, and needs, and he can also ask about his medical condition, so it is possible to use these panels in various health care centers, especially Intensive care, because it contains more properties, serves patients there.

The need for the use of the AAC program increased after the COVID-19 where the medical staff had difficulty communicating with patients in general due to heavy PPE or due to patients being on ventilation, or due to the noise coming from the equipment. Thapa *et al.* (2019).

A well-designed AAC system is flexible and adaptable, i.e. the mode of access changes as the individual's language and physical needs change over time. A well-designed system also maximizes the individual's abilities to communicate effectively and efficiently with a variety of people. (Beukelman & Mirenda, 2013).

AAC devices contribute to understanding the expressions and gestures used in many ways. Emotional listening patiently allows you to learn about the feelings of the patients. Using various forms of augmentative and alternative communication (AAC) methods (AAC refers to all forms of communication, other than speech, which used to prompt sending and receiving messages).

Two types of AAC available unaided and aided categories, Unaided forms of AAC require some degree of motor control rather than an external tool, these could encompass body language, sign language, spoken language or facial expression and the Aided forms of AAC require some form of exterior support which could be either electronic or nonelectronic to get across a message. Nonelectronic aided methods are referred to as "low-tech." while the Electronic forms are referred to as "high-tech."

Low-Tech communicating tools are usually not battery powered and use simple methods as picture exchanging, printed word boards, communication books, sign language. and recorded speech devices. While High-Tech electronic devices permit storing and retrieving of messages while having symbols displayed on the device to encourage interaction.

Each of the categories used for different intents and

purposes. A skilled communicator will often use both systems to achieve effective communication to provide suitable treatment. AAC can be described in different ways. Understanding these different descriptions will help you know about the types of systems available, as well as help guide your decision-making as to which AAC system might be the best fit.

3. Methodology

The challenge healthcare workers are facing with the current outbreak of COVID-19 is that the patients on ventilators suffer in addition to their critical condition from difficulties in communication as a consequence of both their condition and weakness and the obstruction caused by the mechanical ventilators use. Our objective is to provide an effective way to mend this difficulty.

We have based our strategy on implementing an effective AAC system we need it to be, simple and easy to understand by all the parties (the user and the receiver), language-independent, portable, inexpensive, easy to operate, and replace.

Our plan to do so consists of the following steps, to review the literature on AAC systems and their implementation. Choose the suitable features for our objective, develop our AAC system, implement it, and having feedback and outcome analysis of its use for possible improvements and/or adjustments.

A review of the literature using primary and secondary sources. Key studies relating to the communication challenges encountering both patients and health care providers in emergency care facilities were reviewed, with particular attention to the situation of COVID-19 outbreak in the globe. Also, the review encompassed previous research suggesting and discussing strategies for effective communication to develop a conducive environment to patients' feelings of wellbeing and satisfaction.

To collect and collate the literature we conducted an

electronic search that was conducted in EMBASE, PubMed/MEDLINE, Cochrane, Google Scholar, Scopus, Science Direct, and Web of Science from inception to May 2019. The search strategy included relevant keywords for mechanical ventilation and communication. And the review yielded the following.

A well-designed AAC system is flexible and adaptable, i.e. the mode of access changes as the individual's language and physical needs change over time. A well-designed system also maximizes the individual's abilities to communicate effectively and efficiently with a variety of people. (Beukelman & Mirenda, 2013; Flaubert, et al 2017).

An individual may use multiple modalities or many systems of AAC in combination, allowing for change based on context, audience, and communicative intent. A well-designed AAC system is flexible and adaptable. It allows for changes to vocabulary and mode of access as the patient's language and physical needs change over time. A well-designed system also maximizes the patient's ability to communicate effectively and efficiently across environments and with a variety of communication partners (Beukelman & Mirenda, 2013).

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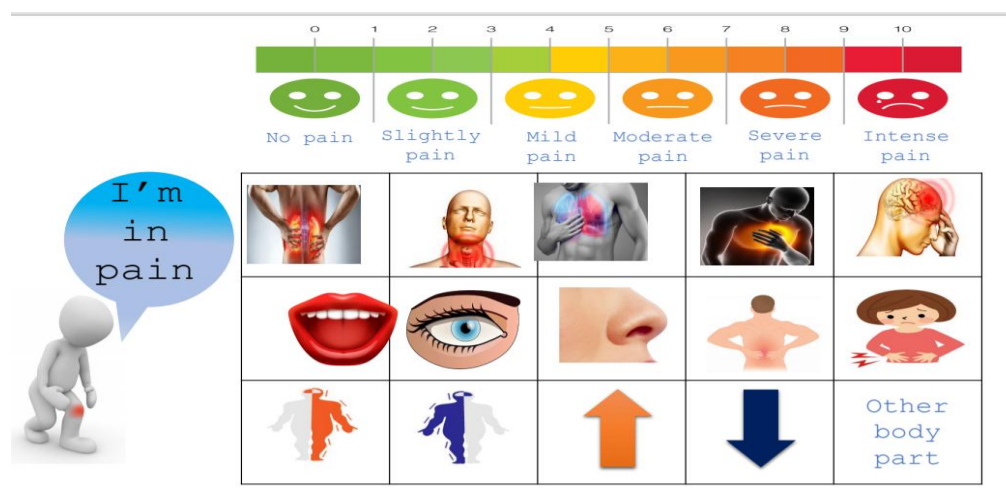


Figure (1). Pain chart demonstrating the severity and the site, with picture and codes when a patient on a ventilator



Figure (2). Demonstrating ACC Emotional status, symptoms, using a picture when a patient on a ventilator



Figure (3). Demonstrating ACC Inquiries about the patient condition, using text cards when a patient on a ventilator

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To become more effective for Covid-19 patients, the choice was developing The AAC program by selecting symbols appropriate for the patient's ages and needs and includes basic personal and medical needs as it contains a pain indicator with pictures of body parts to aid in evaluation and treatment. It is very important to choose clear and easy-to-understand symbols. The focus is on providing the

easiest possible way for effective communication so that these boards can be used with high technologies or low. Furthermore, we can easily translate the written language to accommodate other patients' languages to facilitate communication in the best possible way. Figures (1), (2), and (3) show ACC physical pain diagnosis, emotional feelings, and text patient conditions non-electronic communication cards used when patients on a ventilator.

4. Application & Analysis

4.1. Differentiation of this Research

What differentiates this research from previous research is that it is aimed at improving communication with Covid-19 patients when they are on ventilation in ICU. As it focuses on developing communication boards in a manner that suits Covid-19 patients as closely as possible taking into account the different ages and the extensive methods of prevention followed with these patients, it also adds that it serves a large group of patients who do not speak the country's language because of this flexibility in changing the written language

with Pictures and cards that are easy to understand.

4.2. Benefits of Using Low-tech, Light-tech, Non-electronic AAC

One of the main benefits of simple low-tech designs is that it can be customized to the purpose of the communication. The design must be durable and portable.

5. Conclusions and Recommendations

Using augmentative and alternative communication (AAC) methods will add value in communication between the healthcare worker and patients when an opportunity of speech is missing. There is a necessity for further investigation of devices that can help to initiate effective and therapeutic communication between the healthcare worker and patients during ventilator treatment.

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