In Post-Extubated Patients What are the Preferred Methods of Communication During Their Experience of Endotracheal Intubation with Mechanical Ventilation

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In Post-Extubated Patients What are the Preferred Methods of Communication During Their Experience of Endotracheal Intubation with Mechanical Ventilation

by

Lanette Dumas

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy College of Nursing University of South Florida

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Date of Approval:
    June 25, 2020

Keywords: critical care, therapeutic relationships, qualitative research, nursing

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ACKNOWLEDGMENTS

I would like to recognize the members of my dissertation committee: Dr. Victoria Marshall, I cannot adequately describe how grateful I am for your guidance, expertise, and support. It has meant the world to me. Dr. Paula Cairns, what can I say? Your mentorship and friendship have been a guiding force in my journey. Dr. John Clochesy, you told me my dissertation would take as long as it would take. You were right! Thank you for your honesty. Dr. Constance Visovsky, Dr. Marcia Johansson, and Dr. Brian Graves, thank you for your willingness to help me in any way possible. You are truly a wonderful team! Most importantly, I would like to thank my husband, Joseph. I could not have done this without you!
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ABSTRACT

To date, communication between mechanically intubated patients and nurses is laden with negative psychological and physiological impacts. Research has focused more on what patients want to communicate, and how nurses communicate with intubated patients. There is limited research identifying the communication methods preferred by these patients. The purpose of this study was to identify communication preferences of mechanically intubated patients using a phenomenological approach.

Semi-structured interviews were conducted with participants in their hospital rooms. The interview questions focused on the period of mechanical intubation when the participants were unable to speak. A total of 27 participants were interviewed at a Level I trauma teaching hospital located in southeastern Florida. Interviews were audio recorded and transcribed verbatim. Analysis was conducted independently by two researchers.

Three major themes were identified: Physical experiences of intubations, emotional experiences of being intubated and communication experiences while intubated. Three subthemes under communication experiences were identified: communication attempts while intubated, family help with communication while intubated, and communication preferences while intubated.

Participants interviewed identified technology as their communication preference. Tablets were cited as the communication preference for their ease of use and adaptability.
Participants described using tablets to write or type as well as utilizing drop down boxes, pictures and icons for communication with nurses and family.
CHAPTER ONE:
INTRODUCTION

Over 2.7 million adults in the United States require endotracheal intubation and mechanical ventilation in the Intensive Care Units (ICU) (Nilsen, Sereika, & Happ, 2013). In 2011 endotracheal intubation and mechanical ventilation was the third most common procedure performed, resulting in 7% of hospital stays (AHRQ, 2013). Since 1997 a 56% increase of hospitalizations due to endotracheal intubation and mechanical ventilation has been seen and is comprised with an in-hospital mortality rate of 34.5% in this patient population (AHRQ, 2013; Association for the Surgery of Trauma, 2018).

Although endotracheal intubation and mechanical ventilation may be life-saving for the patient, longer duration is associated with decreased quality of life (Szilagyi, Dioszeghy, Frituz, Gal, & Varga, 2014). These patients have physiological and psychological distress with increased occurrences of adverse events, the longer the weaning time from the ventilator (Hetland, Guttormson, Tracy, & Chlan, 2018; Leung et al., 2017; Szilagyi et al., 2013). More than one third of ICU patients who are intubated and mechanically ventilated for two or more consecutive days do not survive hospitalization (Happ, Tuite, Dobbin, DiVirgilio-Thomas, & Kitutu, 2004).

It is well documented that intubated patients experience difficulty in communicating because they are unable to speak (Magnus & Turkington, 2006). Intubated patients are unable to communicate their needs to bedside ICU nurses and other members of the critical care team.
Communication difficulties create barriers for patients to express pain, fear, anxiety, helplessness, anger, and distress to their nurses (Randen, Lerdal, & Bjork, 2013). Pain, anxiety and dyspnea are the most commonly reported symptoms that intubated patients want and need to express (Karlsson, Forsberg, Bergbom, 2011; Randen et al., 2013). The inability to communicate these critical needs creates tremendous frustration in these patients, which contributes to negative patient outcomes related to inaccurate patient assessments and indications for physical and chemical restraints (Happ et al., 2015).

Interpersonal communication is a basic human behavior necessary for normal psychosocial development (Happ, 2001). It is well documented in literature that nurse-patient interactions are essential to therapeutic relationships. Communication is a main component in the development of nurse-patient relationships (Dithole et al., 2016a; Happ, 2001; Radtke, Tate, & Happ, 2012). Communication between intubated patients and nurses is often brief, task or procedure oriented, and emotionally unfulfilling (Happ et al., 2011). Primarily, nurses initiate and control communication with intubated patients which is a complex process (Holm & Dreyer, 2017). Nurse verbal interactions with intubated patients are typically less than one minute in duration. Overall, nurses spend an average of five percent of their time verbally communicating with intubated patients (Happ, 2001; Happ et al., 2011; Magnus & Turkington, 2005). Even though nurses are aware of the necessity and importance of effective communication, the evidence suggests such communication with intubated patients does not occur (Khalaila et al., 2011).

Communication methods for this patient population are varied. Lip-reading, physical gestures, hand signaling, written communication boards, alphabet boards, picture boards, and
electronic communication devices are all used in current practice (Otuzoglu & Karahan, 2013). Unfortunately, these communication methods and aids are often unsuccessful and therefore abandoned (Dithole, Thupayagale-Tshweneagae, Akpor, & Moleki, 2017). There is evidence in the literature that indicates patients, who are intubated and unconscious a majority of the time, were able to accurately recall nurse-patient communication attempts. Up to 80% of these patients remain extremely troubled long after hospital discharge from not being able to communicate their needs (Dithole et al., 2017; Khalaila et al., 2011). Communication during intubation is extremely important to critically ill patients, yet largely unsuccessful and unsatisfying for both nurses and patients (Leung et al., 2018).

**Statement of the Problem**

More than half of ICU patients are intubated during the first 24 hours following admission (Association for the Surgery of Trauma, 2018). The inability to communicate is the most prevalent and distressing problem for patients who are intubated (Happ et al., 2015). Being voiceless can create feelings of helplessness, frustration, loss of freedom and control, social isolation, and depersonalization (Happ et al., 2011, Karlsson et al., 2011; Leung et. al., 2017). Furthermore, these patients also experience cognitive impairment and motor weakness due to sedation or paralytics required during mechanical ventilation (Otozoglu & Karahan, 2013). Under these conditions, patients are unable to express their basic needs of thirst, hunger, fear, or pain, and may suffer from long-term consequences such as post-intensive care anxiety and depression (Leung et al., 2017; Otuzoglu & Karahan, 2013).

Intubated patients are provided with a variety of communication-assisted devices, yet, effective communication remains minimal (Dithole et al., 2017; Grossbach et al., 2010). Vital communication breakdown that commonly occurs between nurses and intubated patients may
result in inaccurate assessments followed with inappropriate clinical decisions, which can result in adverse events, negative patient outcomes and longer hospitalizations (Dithole et al., 2016b; Happ, 2001). Identifying and implementing communication-assisted devices requires collaboration with nurses and intubated patients to identify patient communication preferences (Grossbach et al., 2010). Additionally, with the use of lighter sedation, patient-controlled analgesia, or no sedation for intubated patients it is even more important to facilitate communication (Hetland et al., 2018; Holm & Dreyer, 2017; Karlsson & Bergbom, 2015; Laerkner, Egerod, Olesen, & Hansen, 2017).

**Purpose of the Study**

The purpose of the phenomenological study of post extubated patients was to explore the lived experience of patient communication preferences during endotracheal intubation with mechanical ventilation. To date, the research has focused more on what patients want to communicate, and how nurses communicate with intubated patients. There is limited research identifying the communication methods preferred by patients who experienced recent intubation. Exploration of communication preferences in this patient population has provided a deeper understanding on identifying how to optimize communication between nurses and intubated patients. Identification of these communication preferences adds new scientific knowledge, which may facilitate the development of nursing interventions that better meet the needs of this vulnerable population.

**Research Question**

The following research question was developed for this phenomenological study is: **In post-extubated patients, what are the preferred methods of communication during their experience of endotracheal intubation with mechanical ventilation?** Participants were asked
to describe their experience of not being able to communicate while they had a breathing tube, how they tried to communicate, and how they would prefer to communicate. This approach captured the full experience from the patient’s perspective. The content relates to how these patients attempted to communicate, if any communication tools were offered or utilized, and what communication methods patients employed. The main goal of the study was to describe communication preferences of patients during mechanical ventilation. A better understanding of this phenomenon may help ease the negative psychological and physiological impacts for these patients. By using a phenomenological approach, the researcher describes the lived experiences of these patients as described by these patients (Creswell, 2014).

Definition of Terms

**Communication.** This is “A process by which information is exchanged between individuals through a common system of symbols, signs, or behavior.” (Merriam-Webster, 2018).

**Verbal Communication.** A method of communication that is spoken not written. Words are used to relay information rather than actions.

**Nonverbal Communication.** A method of communication using behaviors such as mouthing words, hand gestures, head nods, and writing of words (Dithole et al., 2016a; Happ, 2004). It is the transfer of an idea or message without sound (Happ, 2004).

**Endotracheal Intubation.** The insertion of a tube into the trachea through the mouth or nostrils. The tube passes through the vocal cords and a balloon is inflated to prevent air from passing the vocal cords. The inability for air to pass through the vocal cords prevents speech.

**Mechanical Ventilation.** After the endotracheal intubation, the tube connects to a machine (ventilator) that provides oxygen based upon pressure, flow and volume.
Significance to Nursing

This study provides the basis to better understand how these patients wish to communicate with their nurses, family, and healthcare providers. Although nurses attempt to communicate using various methods and tools, research to date still indicates patients feel sad, helpless, stupid, trapped, and humiliated when communication failed (Holm & Dreyer, 2017). Nurses are also primarily responsible in assessing patients’ symptoms. Failure to identify and correctly treat these symptoms, may result in adverse sequelae, thus increasing length of patients’ hospitalization (Hettland et al., 2018; Radtke, Tate, & Happ, 2012). Establishing a therapeutic communication relationship with these intubated patients is difficult, but not impossible. Also, ICU nurses work in an often noisy, chaotic, and time-sensitive ICU environment (Dithole et al., 2016b). These barriers, along with changes in lighter sedation practices, create even more challenging communication between nurses and intubated patients. Therefore, it is important to determine how intubated patients prefer and need to communicate. This study was designed to clarify communication preferences in this patient population, and thus improve the therapeutic communication relationship between nurses and intubated patients.
CHAPTER TWO:

REVIEW OF LITERATURE

This chapter covers the conceptual framework used in this proposed study. The variables presented in this chapter include communication methods and/or tools, mechanical ventilation and/or intubation, nursing, and adult patients in the intensive care unit(s). These variables were the focus of the study.

Conceptual Framework

Communication Accommodation Theory (CAT) (Appendix A) centers on ways individuals alter or adjust their communication based upon communication with others (Giles & Noels, 2007). CAT relies upon two premises: convergence and divergence. Convergence is adapting communication behaviors whereas divergence accentuates communication differences. CAT is based on three general assumptions: 1) Communication is embedded in context, 2) Communication is how people perceive and evaluate a conversation, and 3) Interactants achieve informational and relational communication by accommodating their communication behavior (Gallois, Ogay, & Giles, 2005). For this exploratory study, CAT was used to guide the interview questions. The conceptual model in Figure 1 demonstrates how communication behaviors between intubated patients and nurses are divergent in nature, whereas this communication behavior can be convergent via patient communication preferences.
Nurse-Patient Communication

Intubated patients who are in the ICU for over 24 hours experience 41 to 165 direct contacts with hospital staff. Unfortunately, there is little to no communication skills training offered for hospital personnel (Karlsson et al., 2012). In a study by Dithole et al. (2017) a communication skills intervention was piloted to promote nurse communication with intubated patients. Findings suggest nurses valued communication training, but did not feel enough training and education, and availability of letter or picture boards in the unit were accessible to staff. This study built upon Dithole et al. (2016b) previous study that concluded about 4% of nurses only communicated necessary information to intubated patients, and no other strategies or devices were used to aid in communication. Findings from both studies emphasized the need for further research on communication preferences and practices by both nurses and patients.

Radtke et al. (2012) described the experiences and perceptions of nurses with a communication intervention tool to be used with mechanically ventilated patients. The communication tool used was a combination of an electronic communication board along with

Figure 1. Conceptual Model of Communication Between Patient and Nurse.
nurse training and speech and language pathologist support. Although this study had small focus groups (2 to 3 participants) with a total of 6 nurse participants, the findings support previous studies. The study identified top barriers to communication, which include nurses do not receive appropriate training, and unavailability of communication aid devices. Interestingly, in both Radtke et al. (2012) and Dithole et al. (2017) studies nurses did not always support communication with mechanically ventilated patients. Nurses cited time constraints, severity of illness, and patient delirium as reasons communication was not initiated and even discouraged with intubated patients.

Rodriguez, Spring, and Rowe (2015) used a qualitative focus group design to describe the experiences of nurse communication with speechless patients. A total of 18 nurses participated. Similar to Dithole et al. (2017) and Radtke et al. (2012) findings, nurses cited deciphering patients’ needs were difficult and frustrating leading to unmet patient needs because of patient communication difficulties. Nurses also felt failure and guilt because of their inability to communicate with these patients. An important finding in this study was nurses, regardless of their level or years of experience, found significant difficulty in communicating with non-vocal patients.

Otuzoglu and Karahan (2013) developed an illustrated communication tool to pilot its effectiveness among 90 intubated patients in a cardiovascular intensive care unit. Findings of the study suggest 77.8% of patients who received the illustrated communication tool felt it was beneficial in communicating with nurses. However, Otuzoglu and Karahan (2013) conceded that their communication method did not solve communication problems with intubated patients, and communication challenges between nurses and mechanically ventilated patients may also contribute to nurse misinterpretation and mismanagement of patients’ symptoms. In a study by
Randen et al. (2013) over 80 nurses underestimated pain, anxiety, and delirium in mechanically ventilated patients. These findings suggest nurses relied upon facial expression, contact response, ventilator alarms, and patient agitation in their assessments. The authors posited further tools are needed to facilitate communication among this patient population.

In the Study of Patient-Nurse Effectiveness with Assisted Communication Strategies (SPEACS), Happ et al. (2011) measured the duration of nurse-patient communication interactions. The mean rate was 2.6 completed communication exchanges per minute. Nurses initiated a majority of communication interactions, but patients still found communicating with nurses difficult to extremely difficult. The researchers concluded further research regarding assistive communication devices and their impact on communication practices need to be conducted. In a secondary analysis of Happ’s SPEACS trial, Nilsen et al. (2013) conducted a quantifiable measure of nurse communication that suggested nurses talked more with patients who were alert and awake while intubated rather than with those patients who were confused, less responsive, or had a reduced level of consciousness. The researchers determined the duration of nurse talk with intubated patients averaged 0 to 123 seconds per a three-minute recorded observation session. Nilsen et al. (2013) concluded nurses need to increase communication during the early stage of mechanical ventilation to stave off deleterious effects, and in fact, early communication may have a positive effect on the psychoemotional response in patients. Happ et al. (2015) expanded the previous SPEACS study with SPEACS-2, which modified the original training to a one-hour online course. A total of 323 nurses completed the course. However, findings indicated modest improvement of nurse knowledge and no change in communication behaviors or practice change was evident.
In a small pilot study by Magnus and Turkington (2005), the researchers explored intubated patient and staff perceptions of communication while in the ICU. The study identified a disparity between patients and staff. Patients modified or avoided communication with nurses whereas nurses identified inadequate training, environment and time restraint as communication barriers. Incidentally, even though the nurses in this pilot study listed various barriers to communication, some nurses circumvented these barriers and developed skills to improve communication with patients despite limited training and resources. A small case study conducted by Laakso, Hartelius, and Idvall (2009) explored communication between a nurse and a ventilator-dependent patient. Five categories emerged regarding communication: comprehension, time, practice, different communication strategies, and personal rapport. Even though this was a single case study, these categories are reflected in the larger studies noted. In a small pilot study \((n=7)\), Holm and Dreyer (2018) tested communication tools in conscious mechanically ventilated patients. The OnScreen Communicator (OSC) was selected as the communication software because of its adaptability with different groups of people with communication complexities. Three themes emerged from the study: when communication tools do not facilitate communication, when communication tools are supportive, and when communication tools are unnecessary. Intubated patients who possessed the cognitive and physical abilities were able to use the communication tool best. Intubated patients who were fatigued or had ICU-acquired weakness, and/or suffered from cognitive defects were unable to use the device. Other intubated patients preferred paper communication instead of the tablet.

Rodriguez et al. (2012) conducted a small pilot study on the usability of a multifunctional communication system with patients \((n=11)\) who were unable to communicate. Findings showed patients were overall satisfied with the use of the multifunctional communication system.
Patients cited importance of the communication system strategies while they were unable to speak. Difficulties mentioned by patients were upper arm coordination and delirium. In a later study by Rodriguez et al. (2016), a quasi-experimental, 4-cohort (control and intervention) repeated-measures design was used to test a technology-based communication intervention in patients unable to communicate. The difference between the control and intervention groups was not statistically significant (-0.06; SE, 0.039; 95% CI, -0.136 to 0.020; P = .14) Nonetheless, patients in the intervention group (n=52) reported an increase in ease of communication compared to the control group (n=63). The intervention group also reported higher ratings of satisfaction with the communication method and decreased frustration levels in communication.

**Patient Communication Experience After Intubation**

In a secondary analysis of a study on the relationship between sedation and mechanically ventilated patients’ recall (n=30) Guttormson, Bremer, and Jones (2014) discovered communication emerged as part of patients’ experiences. Over 30 participants participated in the descriptive study. Their findings suggest ineffective communication also has a negative effect on patients’ perceptions of care. An additional result highlighted patients’ frustration with lack of information received by nursing staff. Lack of information was associated with patients’ feelings of helplessness and lack of control. Although assistive communication devices were used, patients cited challenges using the methods offered and/or having their attempts at communication misinterpreted by staff.

Findings by Guttormson et al. (2014) are mirrored in a phenomenological study by Tembo et al. (2014). Tembo et al. (2014) conducted a study in 12 patients who were mechanically ventilated. These patients described feelings of annoyance, frustration, and isolation regarding their inability to communicate. This study was novel in discovering the
communication difficulties affected these patients for up to 11 months after their hospitalizations. This inability to communicate has negative long-term effects for these patients after their illness and subsequent hospitalization.

One qualitative study looked specifically at post coronary artery bypass graft (CABG) patients and their mechanical ventilator weaning experiences. One of the themes found by Schou and Egerod (2008) was impaired communication. Patients were distressed and embarrassed because they could not communicate not only with nurses, but also with their family. Although this study did not accentuate communication difficulties as a major deterrent in patient experience, this study identifies communication needs to be improved to facilitate better psychological support of the patient during ventilator weaning. In another study on 800 post cardiac surgery patients who were ventilated, Wang et al. (2015) found factors that negatively affected patients included communication barriers. Patients described the inability to speak as distressing and the authors suggested prior preparation regarding communication barriers would better prepare patients psychologically.

In a descriptive correlational study of 80 surgical intensive care patients, Liu, Chou, and Yeh (2009) identified basic needs and communication difficulties in intubated patients. Findings of their study identified feelings of love and belonging were the most common need expressed by patients. As with the other studies cited, communication difficulties caused moderate distress even though these surgical patients had prior education regarding their intubation and what to expect. A lack of communication tools was also listed as a cause of distress. A similar study by Khalaila et al. (2011) studied psychoemotional distress and communication difficulties in intubated patients. Of the 65 patients interviewed, 82% rated communication as extremely to quite difficult. Patients reported feelings of anger, fear, and psychological distress while
intubated, and 50% remembered their communication experience. Typically, patients utilized squeezing hands, shaking or nodding the head, lip reading and facial expressions to communicate with nurses. As with similar studies, patients reported high levels of psychological and emotional distress trying to communicate while intubated.

Martinho and Rodrigues (2016) adapted the Ease of Communication Scale among Portuguese patients undergoing mechanical ventilation with orotracheal intubation. Of the 31 patients sampled, 90% were conscious during the intubation period, and 74.2% of respondents listed communication as “quite hard” or “extremely hard.” These findings are similar to those found by Khalaila et al. (2011) and Liu et al. (2009). Patak et al. (2004) described the frustration level experienced by mechanically ventilated patients who tried to communicate with healthcare providers. Of the patients interviewed, 62% reported a high level of frustration in communicating their needs. The study also found no significant difference between length of ventilator days and diagnoses and level of frustrations.

Leung et al. (2017) studied the scope of communication content of mechanically ventilated patients. Ten patients were interviewed, and the researchers found the scope of communication content was broad and not limited to task-focused communication. Patient communication content included: family advice and comfort, personal perspectives in medical discussions, and psychoemotional needs.

**Patient Communication Experience During Intubation**

In an observational study of 19 patients who were conscious during mechanical ventilation, Karlsson et al. (2012) found patients were able to differentiate between caring and non-caring communication. The nurses’ voices, tone, and words as well as touch, hearing and listening were all methods of caring communication cited. The authors concluded these patients
should be involved in care decisions and be kept informed about their care. In a later study by Karlsson and Bergbom (2014) the researchers described the experiences of nurses, nursing assistants, and anesthetists caring for conscious patients receiving mechanical ventilation. Respondents cited communication with conscious patients was less difficult, but also required a different method of communication compared with patients who are sedated.

In a similar study by Laerkner et al. (2017), researchers explored patients’ experiences of being awake during mechanical ventilation. Patients observed by researchers were found to utilize different methods to communicate with nurses. Spelling, writing, alphabet boards, picture boards, or typing on a computer were some of the methods used by patients. Some patients interviewed reported experiences of being ignored while trying to communicate. These findings support other studies citing patients’ feelings of powerlessness over the inability to communicate.

Holm and Dreyer (2017) studied nurse-patient communication among non-sedated mechanically ventilated patients. The researchers conducted interviews, focus groups and recorded observations over a four-month period. Similar to findings by Karlsson and Bergbom (2014), Holm and Dreyer (2017) found non-sedated patients who are mechanically intubated require a different way of communication. The communication process constantly changes dependent upon patients’ communication abilities, thus nurse interpretation and structuring of communication with these patients is situational. This communication shift requires new processes on how to integrate communication in care.

**Family and Patient Communication Experience During Intubation**

Fink, Makic, Poteet, and Oman (2015) explored not only the mechanically ventilated ICU patient’s experience but also the family member’s experience. A convenience sample of ICU
patients \((n=84)\) and family members \((n=77)\) were interviewed. Twenty-six codes were condensed into four categories; parallels between patients and families were noted. Communication difficulties were one of the key categories that emerged from the qualitative data. Both patients and families expressed frustration with communication barriers and lack of communication tools.

Laerkner, Stroem, and Toft (2016) studied relatives’ satisfaction with care, treatment, and communication of mechanically ventilated patients who received sedation compared to those intubated patients who did not receive sedation. The response rate was 73\% \((n=36)\) from the 49 questionnaires that were sent to relatives. Relatives of intubated patients who were not sedated were more bothered by disturbances compared with relatives of intubated patients who were sedated \((p=0.3)\). No differences were found with relatives’ satisfaction with care, treatment, and communication between the two groups.

Summary

Extensive evidence in the literature on communication between mechanically ventilated patients and nurses suggest inadequate communication creates psycho-emotional distress for both patients and nurses. Nurses feel ill equipped regarding communication strategies with these intubated patients and often feel frustrated and helpless; feelings that are also mirrored by patients. There is evidence on how nurses attempt to communicate, and what patients wish to communicate. However, there is little evidence that supports communication preferences for these patients. Research to date focuses on nurse driven communication methods and tools. This study explored the patient’s communication preferences during endotracheal intubation and mechanical ventilation.
CHAPTER THREE:
METHODS

This chapter presents the process used for this study, and is categorized by the following: method, setting and sample, data collection, data analysis, and rigor of the study. This study explored communication preferences in endotracheal intubated and mechanically ventilated patients (post extubation) while in the ICU.

Method

This goal of this qualitative study was to describe communication preferences in patients while they were intubated. The interviews took place post extubation. A qualitative research method provides rich, detailed data about the lived experiences of intubated patients, instead of a quantitative approach that focuses on relating variables for a sample that is indicative of the population (Creswell, 2014). A phenomenological approach was used. Phenomenology relies heavily on the lived experience, not a preconceived notion of the experience (Streubert & Carpenter, 2011). This experience-focused methodology suspends all preconceptions and is based on the meaning of the individual’s experience, thought, memory, emotion and perception (King, Horrocks & Brooks, 2019). This qualitative methodology perspective valued individual experiences and relied heavily on in-depth interviews. This type of research delves into the data searching for common themes and established patterns of relationships shared by the participants of this particular phenomena (Streubert & Carpenter, 2011).
Setting

Recruitment was conducted at a Level 1 trauma teaching hospital located in the southeastern part of Florida. This site was selected for its 225 critical care beds with eight intensive care units.

Sample

A purposive sampling technique was utilized to recruit 27 participants extubated within a seven-day period as to support participants’ recall of the experience. Inclusion criteria included: 18 years of age or older, alert and oriented to person and place, and English speaking. Palliative care, end-of-life, and patients with tracheostomies were excluded from this proposed study.

Data Collection

Semi-structured interviews were conducted with participants in their hospital rooms. All rooms in the intensive care unit were private to ensure confidentiality. Interviews were conducted within a seven-day time period post extubation. This time period allowed for stronger recall of the participants’ lived experiences of communicating while intubated. Using semi-structured interview questions alleviated interview burden for this participant population and allowed for follow-up questions during the interview. The interview questions were related to the period of endotracheal intubation and mechanical ventilation when the participants were unable to speak. Participants were asked to describe their communication experiences with their nurses. Participants were then asked to describe how they would have preferred to communicate. The interview protocol began with an introduction and an open-ended question:

“Hello, my name is Lanette Dumas and I am a USF graduate student in the PhD program. My research is about communication. I would like you to share with me a description of your experience while you had a breathing tube in place and were unable to use your voice
to communicate with your nurses. Describe for me what was your experience of not being able to talk with your nurses while you had a breathing tube. How did you try to communicate while you had a breathing tube? How you would have preferred to communicate with your nurses/family/doctors while you had a breathing tube?”

Participants provided data about their experience and were prompted as needed. After the interview was complete the researcher closed the interview by thanking the participant for his or her time.

Using an open-ended question allowed participants to discuss their experiences. Themes emerged during the data collection process. Data collection stopped when saturation was met. Saturation occurs when no new themes emerged (Creswell, 2011).

All participant interviews were audio-recorded. The date, time, place of interview, interviewer, and interviewees’ initials were recorded. Data collected included: type of ICU, admitting diagnosis, documentation of delirium and sedation medications used, length of ventilator hours, age, race, and sex of participants, as well as any hearing aids and/or glasses worn by participants. Data was stored in a locked cabinet and a password-protected computer that only the principal investigator accessed. The data was also uploaded to the University of South Florida Box for the dissertation chair to access. Data collected was de-identified by assigning each subject an arbitrary study identification number.

**Data Analysis**

In qualitative research, data collection and analysis are an iterative process. The data gathered is sorted and aggregated into a small number of themes (Creswell, 2014). The meaning of the lived experience is seen through emerging themes as the researcher looks for commonalities elicited from the experiences. There are three guidelines suggesting what
identifies themes (King et al., 2019). First, the researcher makes choices on what to include, what to discard, as well as how to interpret participants’ words (King et al., 2019). Second, identifying repetition. The researcher looks for similar words or phrases across two or more interviews. Although a word or phrase raised one-time should not be identified as theme, it still may be considered in the final analysis (King et al., 2019). Third, the themes must be separate from each other (King et al., 2019). For this study, a thematic analysis was used. The researcher identified recurrent and distinctive qualities of the participants’ experiences, perceptions, and accounts, conducted by individual face-to-face interviews (Creswell, 2011, King et al., 2019). The following processes were used to analyze the data.

**Thematic Analysis**

In thematic analysis carrying out the analysis does not always progress in a sequential manner, but rather consists of a back and forth between data (King et al., 2019). This iterative process enables the researcher to rethink aspects of interpretive coding while engaging in defining themes (King et al., 2019). This allows for reducing large amounts of data into meaningful categories.

The process of analyzing data was broken down into steps (King et al., 2019). The first step the researcher took was to read through transcripts in order to become familiar with the data as a whole. This allowed the researcher to refer back to something the participant said earlier or later in the interview. The second step involved coding data into as many categories of analysis as possible. Categories were established based on content similarity in incidents and dissimilarity of content with other categories. As the coding evolved, the researcher changed from comparison of incident to incident to comparison of incidents into a unified whole. In the third step the researcher analyzed the categories and inductively identified emerging themes.
Figure 2. Steps Used in Analyzing Data.

Coding

Each interview was transcribed verbatim by the researcher. For the purposes of this proposed study, the researcher followed a traditional approach and developed codes only on the basis of the emerging data collected from participants (Creswell, 2014). The researcher, based upon the levels of coding outlined, developed a qualitative codebook. The codebook contained a list of codes used for coding the data (Creswell, 2014). The intent of a codebook provided definitions of codes and maximized consistency among codes, as levels of coding may coincide (Creswell, 2014).
Qualitative research is inherently well placed to confirm validity because of the way it takes context seriously (King et al., 2019). The development of concepts in qualitative research is supported by its close, detailed attention to the data (King et al., 2019). Validation of the research findings occurred throughout the steps outlined below.

**Rigor.** Methodological rigor ensures accuracy and credibility of the findings (Creswell, 2014). The goal of rigor in qualitative research is for accuracy of the research findings and the scientific approach used is consistent (Creswell, 2014). Two nurse researchers, the principal investigator and dissertation chair, reviewed transcripts independently. Results were shared and any discrepancies were discussed until a consensus was met. The operational techniques used to support the scientific rigor were credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985).

**Credibility.** Credibility is confidence in the truth of the findings (Lincoln & Guba, 1985). Member checking was one method used by this investigator. Member checking determined the accuracy of the findings. The investigator checked each individual participant’s responses and clarified any responses made by the participant. At the end of the interview the investigator summarized the interview to ensure the participant’s experience was accurately captured. This provided correlating evidence to support the veracity and consistency of the findings (Creswell, 2014).

Peer debriefing with the dissertation chair is the second method the investigator used. Peer debriefing allowed the dissertation chair to ask questions of the investigator so that the research resonated with others (Creswell, 2014). Peer debriefing added validity to the research.
The investigator used rich, thick description to transmit findings for the third method used. Providing rich detailed descriptions transported readers and provided a component of shared experiences; therefore, the results were realistic and valid (Creswell, 2014).

**Transferability.** Transferability refers to the probability that the findings are consistent and have meaning to others in similar contexts (Lincoln & Guba, 1985). Also described as “fittingness,” transferability occurs when the interview data contains rich and thick descriptions of the occurrence; therefore, the findings are more likely to be transferable to a similar population or group (Streubert & Carpenter, 2011). The determination of transferability rests with the potential users of the research findings and not with the investigator.

**Dependability.** Dependability shows that the findings are consistent and repeatable (Lincoln & Guba, 1985). The dependability of the research was shown through an audit trail (Lincoln & Guba, 1985). The investigator illustrated as clearly as possible the evidence and thought processes that led to the conclusions of the study (Streubert & Carpenter, 2011). This will allow other researchers to follow the investigator’s methods used and come to similar, but not contradictory, conclusions. The audit trail shows dependability and credibility of the study.

**Confirmability.** Confirmability is the process of neutrality in qualitative research (Lincoln & Guba, 1985). The participants, not the investigator’s bias or motivation, formed the findings of the study. An audit trail included all raw data, accuracy of transcription, the relationship between the research question and data, and the level of data analysis (Creswell, 2014). This enhanced the validity of the study and sustained the investigator’s integrity of the research.
Protection of Human Subjects

The investigator received approval from Tampa General Hospital Institutional Review Board, and the University of South Florida Institutional Review Board for the study. (See APPENDIX B and C)

Summary

Chapter Three shares the investigator’s rationale for the qualitative method used and shows the relevant elements of data collection and analysis. Chapter Four describes the results of the data and themes found. Chapter Five discusses significant findings, implications of the findings, study limitations and strengths, and recommendations for future research.
CHAPTER FOUR:
RESULTS

Participant Demographics

A total of 132 patients’ charts were screened resulting in a sample size of 27 patients who met the eligibility requirements. All demographic and descriptive data are presented in Table 1. Demographic and descriptive data was analyzed using Statistical Package for the Social Sciences (SPSS) version 24.

Patients ranged in age from 22 to 80 years, with a mean age of 58 (+/- 13.39). The total number of hours patients were on a ventilator was 1,316.5, with mean of 48 hours (+/- 46.67). Patients spent from one to 31 days in an intensive care unit, with a mean of 7 days (+/- 6.2). A majority of the sample were male (n=20). The sample was largely Caucasian (n=20), with limited representation of other racial groups including African American (n=5), Asian (n=1) and Hispanic (n=1).

Ten of the patients interviewed used assistive devices such as glasses and none of the patients used hearing devices/aids. Patients interviewed were hospitalized on a variety of intensive care units including: cardiovascular/thoracic intensive care unit (n=9), vascular intensive care unit (n=4), cardiovascular intensive care unit (n=4), surgical/trauma intensive care unit (n=4), neurology intensive care unit (n=3), medical intensive care unit (n=2), and burn intensive care unit (n=1). All patients received a combination of sedatives, anxiolytics, and/or pain medications while they were intubated. Medications included: propofol (Diprivan),
dexmedetomidine (Precedex), fentanyl, and/or midazolam (Versed). One patient had haloperidol (Haldol) for breakthrough pain.

**Table 1.** Descriptive Statistics of Sample Demographic, Admitting Diagnosis (n = 27).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>20 (74)</td>
</tr>
<tr>
<td>Female</td>
<td>7 (26)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>20 (74)</td>
</tr>
<tr>
<td>Other</td>
<td>7 (26)</td>
</tr>
<tr>
<td><strong>Assistive Devices</strong></td>
<td></td>
</tr>
<tr>
<td>Glasses</td>
<td>10 (37)</td>
</tr>
<tr>
<td>Hearing Aids</td>
<td>0 (0)</td>
</tr>
<tr>
<td><strong>Drugs</strong></td>
<td></td>
</tr>
<tr>
<td>Dexmedetomidine</td>
<td>8 (30)</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>21 (78)</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>1 (04)</td>
</tr>
<tr>
<td>Midazolam</td>
<td>1 (04)</td>
</tr>
<tr>
<td>Propofol</td>
<td>22 (81)</td>
</tr>
<tr>
<td><strong>Admitting Diagnosis</strong></td>
<td></td>
</tr>
<tr>
<td>Cardiac</td>
<td>7 (26)</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>5 (19)</td>
</tr>
<tr>
<td>Surgical</td>
<td>6 (22)</td>
</tr>
<tr>
<td>Other</td>
<td>9 (33)</td>
</tr>
</tbody>
</table>

| Mean (SD)               |       |
| Age                     | 58.22 (13.39) |
| Number of Ventilator Hours | 48.76 (46.67) |
| Number of ICU Days      | 7.4 (6.2) |

**Themes**

In the 27 interviews conducted, 23 patients remembered their experience of being intubated. Three overarching themes emerged from the data: Physical experiences of intubation, Emotional experiences of intubation and Communication experiences while intubated.

**Physical Experiences of Being Intubated.** Participants described a variety of physical outcomes of being intubated. Many experienced feelings of choking and not being able to breathe. In addition, participants were often restrained which magnified these feelings. Many participants felt pain, discomfort, and throat irritation from the endotracheal tube.
“You think you’re choking. I felt like I was choking. I couldn’t breathe. Basically, I was trying to pull at the restraints” (Participant 01).

“I felt like I was choking and um, it wasn’t a good feeling. You don’t want to have it.” (Participant 05).

“It was painful for me at the time because I never felt like I could actually was breathing. Like there were times like when they were like, just breathe, just inhale. It felt like nothing was going in, and nothing was going out, so I was losing traction there.” (Participant 08)

“I had that tube in my mouth and it felt like it was going all the way down into my throat and hitting the bottom of my throat and coming out. Um, they tied me down so I can’t do anything. One time I got loose and scratched my nose. I didn’t pull it.” (Participant 11)

“I feel like, how you say, like you can’t breathe sometimes.” (Participant 14)

“It was hard to breath with the breathing tube.” (Participant 16)

“A breathing tube down your throat and your hands ties so you can’t move it is absolutely horrifying.” (Participant 21)

Participants also included physical complaints of having a sore throat, dry mouth and throat irritation. Even after removal of the endotracheal tube, participants experienced difficulty swallowing and talking because of a sore oral mucosa and throat.

“It was alright for the first two days, but on the third day it was getting sore. It was down there. And while it was down there it was irritating.” (Participant 06)

“It was very sore and I couldn’t talk.” (Participant 12)

“My throat is brick dry. I can’t swallow, and they keep saying ‘we’re taking this out, we’re taking this out.” (Participant 13)
“It was hard to swallow. I felt like something was in my throat and I couldn’t do anything. I was coughing up mucus and stuff like that.” (Participant 16)

**Emotional Experiences of Being Intubated.** Participants described a wide range of emotions surrounding their intubation. Feelings of helplessness, lack of control, being scared and feeling panicked were among some of the emotions experienced.

“Helpless. Um, it’s not a very nice thing at all. It’s not a good situation to be in at all.” (Participant 01)

“It’s scary. Very, very scary. Scary.” (Participant 05)

“It was probably the hardest thing I ever done. But in my brain I kept telling myself its gotta be there so chill out. There was a very big panic in by body. I didn’t know if I was going to survive it. Worse thing I ever did.” (Participant 07)

“I felt like I had no control.” (Participant 11)

Some described their experience similar to being incarcerated, constricted and alone. One participant’s experience of being intubated resulted in a lack of trust with healthcare providers and was followed by changes in her healthcare decisions.

“I felt restricted like, you know, prison. I felt, this, I always felt and I would watch the clock all night long cause they were looking for numbers to pull it, but I just couldn’t achieve them for a while and I would hope all night long to get that tube out of me.” (Participant 11)

“(I felt) Like enclosed.” (Participant 05).

“When I woke up, I was terrified. I was alone and just awake in a room.” (Participant 23).

“The first thing out of my mouth was ‘you liars’ because when the tube, I was kept telling ‘we’re going to get it out, we’re going to get it out, we gotta do this, we gotta check that.’ You
don’t need to do that. You need to get it out of the patient’s mouth. I mean there was a surgery we were contemplating, but I made it very clear, nope, nope. I made the decision I’m not taking the risk of being intubated again. I do know I am going to get an advance directive done.”

(participant 02)

Others described their experience as horrifying, terrible and uncomfortable. These experiences were traumatic for the participants.

“It was unbearable.” (Participant 12)

“Um, it was horrific. Totally, totally horrific. (Participant 13)

“Very uncomfortable. I was very frantic when I was awake with the tube in my throat.”

(Participant 15).

“Terrible, terrible.” (Participant 18)

“You don’t know what to do. It is something no human should have to experience.”

(Participant 21)

Communication Experiences While Intubated. Participants recounted a number of experiences with communication while intubated. These are organized under three subthemes: communication attempts while intubated, family help with communication while intubated, and communication preferences while intubated. Many participants used a variety of communication methods with different levels of success described. There were also several barriers to communication while intubated that negatively impacted participants. Several utilized family support to initiate communication while intubated. Lastly, communication preferences were provided by participants.
Subthemes

Communication Attempts While Intubated. Participants described various communication barriers while intubated. Many expressed frustrations of not being understood, not being able to talk, and not being heard. The inability to communicate was cited as one of the biggest obstacles while being intubated.

“I wasn’t able to convey. They weren’t understanding what I meant.” (Participant 01)

“You can’t communicate.” (Participant 02)

“I wasn’t able to communicate very well. You’re frustrated because there is maybe something you want to explain to somebody, and you can’t talk or breathe. You can’t communicate at all.” (Participant 08)

“That was a big problem – was communication.” (Participant 11)

“I just wanted to let them know what was going on.” (Participant 12)

“I was trying to talk with people. I couldn’t talk. There has to be a better way.” (Participant 13)

“There was this communication barrier that I wish I could of broke. I felt like they couldn’t hear me. There was no acknowledgement that they heard me.” (Participant 23)

Participants described a variety of communication methods used while intubated. Pen and paper, and hand gestures such as finger pointing, finger tapping, and nodding or mouthing words were the most commonly used method to communicate. Many had difficulty trying to write because of upper body weakness, medication effects, not being able to see well or focus, and the physical limitations of being restrained.
“With my hands down here, I couldn’t even see what I was writing. I was doing things like hand signals, and I had to use my hands to say ‘come down here, come down here’”

(Participant 01)

“I tried to do it in my handwriting, but they didn’t understand. By nodding my head (to communicate with nurses and family)” (Participant 06)

“I would be trying to somehow write a message. They (nurses) would say ‘what is this?’ And I would be circling like no this is what I meant. Like Pictionary which I’m not really good at. I would just be like hitting (demonstrates hitting the side rail) to kinda get their attention”

(Participant 08)

“I would write words and they (nurses) would understand what was going on. I wrote pain, different things. I used hand signals, point to my foot when I had pain” (Participant 11)

“I tried to write. My hands were like this (demonstrates shaking).” (Participant 13)

“I just pushed the button (call bell) and used hand gestures.” (Participant 14)

“I would just point to stuff.” (Participant 16)

“I made like I was writing. Then they (nurses) handed me a pad and a pen.” (Participant 19)

“I started out with hand signals. I would nod my head ‘yes’ or ‘no.’ That’s how I started out. I would just go like this (demonstrates a writing motion), and they (nurses) would understand I wanted to write something.” (Participant 22)

“I tried tapping on things and no one was still was able to understand me. I tried using a white board, but I couldn’t spell right. I couldn’t see what I was looking at mostly and it came out all scrambled.” (Participant 23)
**Family Help with Communication While Intubated.** Some participants looked to family for communication support. Nurses did not offer or initiate any communication tools for family or patient use. Participants described using pen and paper, while others used hand gestures to relay messages.

“I actually pulled my wife down. I pulled my wife down to me and put my hands around her neck, like I was choking her. That’s when she got me.” (Participant 01)

“I was asking her (daughter) for a piece of paper and a pencil to write.” (Participant 05)

“Hand signals. My sister was here and she kinda knew what I was talking about.” (Participant 11)

“So, I had my sister get me pencil and paper and I wrote down what I wanted to ask her to ask the doctor.” (Participant 12)

“I communicated with my wife by tapping on her hand. So, I communicated with my wife and she communicated with the nurses.” (Participant 15)

“I kinda asked my wife. We communicated that way (motions with hands.)” (Participant 26)

**Communication Preferences While Intubated.** These subthemes identified are a culmination of how patients attempt to communicate. Communication preferences identifies how patients want to communicate. Although pen and paper had been cited as a common communication tool, participants looked at technology as the preferred communication type. Technology, as a communication preference, was defined as tablets and texting. Tablets were identified as the preferred communication tool because of its versatility in communication, ease of handling, and size. Participants described a variety of ways to communicate with a tablet such as typing, writing with a stylus, or tapping on pictures or icons.
“Maybe text them or something. If I could text.” (Participant 01)

“Icons or little characters (on a tablet). I imagine the top 10 or 20 things people ask for, and you could (mimics pointing). To have something that is handy so you could say this is it and they don’t have to guess.” (Participant 08)

“I think if they had a big pad (tablet) so you could write (type) it. Just have a board that has pictures on one half and you could write (type) on the other half.” (Participant 11)

“It would have been easier if I had had a tablet. Something as big as this (points to a tablet) with larger letters. When it’s bigger you can see it when you type. The tablet sounds like a really great idea. A large tablet so you can easily see what you type.” (Participant 19)

“If it was a tablet, I don’t think (communication would have been difficult). ‘Cause I could have sat here and (makes typing motions). Those tablets have typewriters on them.” (Participant 20)

“I was trying to use Evernote to write things down, but I’m fat fingered, so it’s hard for me. Using a tablet with a stylus might have helped. I prefer words over pictures. Even typing using the keyboard on a tablet would have been a lot easier than on a phone. Tablets would be the best thing. I did not write well. Sometimes I would have to write some of the words over again so they would know. With a tablet they have the capability to correct or suggest spelling. So that’s another thing that works with a tablet - it corrects my missed writing.” (Participant 22)

Participants also described drop down boxes on a tablet that when tapped with a finger or stylus would open other questions or icons for further communication. A tablet with both words and pictures allows for flexibility in communicating per participants’ responses.

“I tried texting. My best idea is having little squares that say ‘where am I,’ ‘what am I doing,’ ‘what happened,’ ‘how did I get here.’ Those were the four main questions. If I had a
tablet, I would put who, what, where, when and how. Just kinda put who are we, what happened, how I got here and why am I here. That would have been so helpful. If you’re using the ipad it would immediately state what the day and time is.” (Participant 23)

“A tablet would have been good with the alphabet on it. You could find the ‘s’ for spell, or ‘n’ for nurse, or ‘f’ for food. Icons would work. A picture of food, nurse, coffee, bathroom.” (Participant 24)

“It’s easier on a tablet because I have big fingers. I would have been able to type better. Writing on a tablet would have been easier. Looking up pictures to try to explain what you need. If the nurse didn’t know what I exactly needed I could look it up on Google, like how I am feeling. The tablet is what I preferred.” (Participant 25)

“Using a tablet (would have been a good idea). I could have texted my wife ‘could you ask the nurse,’ or ‘something for pain,’ or ‘may I have water,’ or something like that.” (Participant 26).

Summary

The focus of this chapter was to describe participants’ experiences while intubated and not able to communicate. Three major themes were identified: physical, emotional and communication, as well as three subthemes identified under communication. These participants’ experiences highlight the need for individualized interventions for this specific population. Further discussion of significant findings, implications of the findings, study strengths and limitations, and recommendations for future research is addressed in Chapter 5.
**Figure 3.** Three overarching themes with subthemes identified.
CHAPTER FIVE:
DISCUSSION

The purpose of this qualitative research study was exploring the lived experience of patient communication preferences who were recently intubated. The goal of this study was to identify preferred communication preferences of patients who were intubated. Three overarching themes were identified: physical experiences of intubation, emotional experiences of intubation and communication experiences while intubated. Additional subthemes were noted under communication experiences while intubated: communication attempts while intubated, family help with communication while intubated, and communication preferences while intubated.

Current literature and studies have described participants’ experiences while intubated. Research shows patients still feel anger, fear, and anxiety as well as physical complaints of difficulty breathing, sore throat, thirst and pain. This study supports current literature and existing research, but also provides new research opportunities to be explored. This study fills the knowledge gap in the current literature by describing patients preferred method of communication. This chapter includes a discussion of significant findings, nursing implications of the findings, study strengths and limitations, and recommendations for future research.

Significant Findings

Patient communication has been recognized as a research priority in critical care nursing for over 20 years (Happ, 2001). To date qualitative studies have focused on the physical and emotional ramifications of not being able to communicate while intubated. This study supports
literature on participants’ emotional response while intubated and the inability to communicate. What is novel about this research study is describing participants’ preferences for communication while intubated. Determining how participants want to communicate will allow for interventions to improve patient care, outcomes, and treatment. Research findings also have implications for nurse satisfaction and comfort communicating with intubated patients.

The three overarching themes described participants’ experience while intubated, but the subtheme, communication preferences while intubated, identifies how participants want to communicate. Participants cited technology, specifically tablets, as a preferred communication method. Current communication strategies such as writing, gesturing, and mouthing of words were unsuccessful. Participants stated they were unable to write because of physical restraints, upper arm weakness, medication effects, and the inability to focus. Also, the basic needs of participants were not met. A majority of participants described difficulty breathing, feelings of choking and pain while they were intubated. Participants expressed feelings of frustration, anxiety, anger and fear over repeated and failed communication attempts. In addition, a new paradigm shift in lighter sedation show participants are more aware of their environment (Holm & Dreyer, 2017). Identifying optimal methods of communication with mechanically ventilated patients may reduce post-traumatic stress disorder, delirium, and longer ICU stays (Fink et al., 2015).

Communication tools are available such as alphabet, word or picture boards, but these tools are not used consistently in clinical practice (Holm & Dreyer, 2018). Nurses in this study did not offer any communication tools to study participants, even though all of the intensive care units had communication boards available (Appendix D). Nurses may not have offered communication tools to participants due to time constraints, unfamiliarity and ease of use of the
communication tools available, and the chaotic environment of the ICU. Some participants relied upon family to interpret or assist in communication, whereas others attempted to write (Appendix E). Study findings showed participants preferred tablets due to the ease and adaptability of use. Tablets are versatile and can be used for writing, typing or selecting pictures or words. Participants interviewed stated tablets allow them communication choices: icons, drop down boxes, and/or typing/writing that may improve communication in intubated patients.

**Implications of the Findings**

This study suggests communication needs are not being met by participants. The CAT conceptual framework used in this study guided the researcher in communication in mechanically intubated patients. The research supports that communication in mechanically intubated patients is divergent or different with healthcare professionals as patients are verbally restrained when intubated. A communication convergence model is one in which both the patient and nurse adapt and come together via a digital format on a tablet. This work may help the researcher develop a conceptual framework as it relates specifically to intubated patients and their nurses, doctors and families.

Participants described their feelings of frustration when misunderstood, resulting in increased stress, anxiety and fear. Participants also had difficulty expressing physical symptoms to their nurses such as dyspnea, choking, and pain. This divergent communication may lead to nurses’ failure to recognize patients’ needs, mask important clinical assessments or misinterpret clinical signs. This lapse in communication may also contribute to poor patient satisfaction, adverse events, increased length of ICU stay and poor patient outcomes.

Good communication between participants and healthcare professionals is critical for patients’ success (Dithole et al., 2017). Failed communication with healthcare professionals
negatively affects these patients. Participants described feelings of untrustworthiness with their nurses, being misunderstood and feeling helpless over their healthcare decisions. The results of this study demonstrate how failed communication created obstacles in care. Participants’ physical complaints such as choking, not being able to breathe and pain were difficult to convey to their nurses which increased participants’ anxiety and fear. Communication remains an obstacle in effective nurse-patient relationships.

The findings of this study highlight the need for technology-based interventions such as tablets to best support communication for intubated patients. Participants identify via tablets as a preferred communication method, and the ability to individualize tablets for participants will enhance communication with healthcare providers and family. The results of this study add to the existing body of knowledge on communication with intubated and mechanically ventilated patients.

**Strengths and Limitations**

Qualitative research was the best methodology for this research study. This study identified a gap in communication preferences with intubated patients that produced new knowledge about this population. Qualitative research when conducted appropriately is valid, reliable, credible and rigorous (Anderson, 2010). The strengths in qualitative research show how issues can be examined more thoroughly, how human experience is more potent and compelling than quantitative research, and how the research direction can be revised as relevant information emerges (Anderson, 2010). Although quantitative research is supported by facts, this study sought to describe a phenomenon through a rich narrative provided by participants. Interviews conducted by the researcher offered further understanding of communication preferences in
intubated patients. Other strengths included variation in age of participants (23 to 80), the diversity of ICUs represented in this study, and the diversity of diagnoses/diseases.

As this research was conducted at one hospital/ICU center, these results cannot necessarily be generalized, but these findings can be transferable to another hospital/ICU setting. Researcher bias was another limitation of this research study. The researcher acted as an instrument as the researcher observed, interviewed, and interpreted data (Streubert & Carpenter, 2011). Unavoidably, participants’ responses may have been affected by the researcher’s presence during interviews. Research interpretation of findings was shaped by the researcher’s age, gender, ethnicity and occupation. Subjective bias is inherent in qualitative research. This limitation was addressed by having another researcher analyze the data until a consensus was met.

The small sample size (N = 27) was a limitation of this study although typically sample sizes in qualitative research is lower until data saturation is met. Four of the participants interviewed stated they did not remember, but the researcher included the inability to remember being intubated as an experience.

Another limitation was participants were largely Caucasian males. A sample size with more diversity and gender equality may have added to themes identified. Another study limitation was nurses were not interviewed to better understand why existing communication tools were not utilized as this study focused solely on the experiences of intubated patients.

**Recommendations for Future Research**

A follow up study to assess and evaluate the specific communication needs that can be digitized on tablets will be explored to address important topics specific to patients intubated in the ICU. These include: font size, color and hue of the tablet screens as to not cause
overstimulation, as well as simple and easy to understand commands and responses. There are potential downfalls with the use of tablets. Poor internet connection for any necessary applications, low lighting in the ICU and on tablets, and medical devices such as arterial lines, and/or pulse oximetry cables that may create difficulty in holding and manipulating a tablet are some possible considerations as research moves forward. It will be important to include the major stakeholder such as patients previously and currently intubated, nurses, and family members who provide social support during hospitalizations. The following pilot study to inform quantitative research is the next logical step. A small pilot study to test tablets with 10 intubated patients in an ICU will be proposed with the potential aims: 1) assess acceptability and feasibility of tablet use in this specific population; 2) assess potential reduction in delirium and/or agitation using the Delirium Screening Tool and the Richmond Agitation Sedation Scale; 3) assess potential reduction in ventilator days and 4) nurse/patient satisfaction using tablets in the ICU setting. A multidisciplinary approach will be used and will include a computer science engineer to help with design of the tablet and an occupational therapist for range of motion exercises with intubated patients. The researcher will apply for funding via the National Institute of Nursing Research, Research Project Grant (R03 or R21), Sigma Theta Tau, and/or the American Association of Critical-Care Nurses. Findings of this quantitative research will be disseminated to peer-reviewed nursing research journals such as American Journal of Critical Care, American Journal of Nursing, or Critical Care Nurse. Research will be disseminated at the National Teaching Institute and Critical Care Exposition (NTI) as well as to critical care leaders and nurses, administrators, and nurse researchers at Tampa General Hospital.
Conclusion

Communication among intubated patients is still a problem. With lighter sedation practices, severity of illness, and family involvement in care, it is important to improve communication practices with patients. This research was rich in description and shows how important communication was to participants. This study highlights the need for better communication tools and emphasized the lack communication tools available. With technological advances in healthcare, it is not unrealistic to provide patients with tablets in order to communicate their needs, questions, and/or concerns. This ability to effectively communicate with mechanically intubated patients may lead to improved plans of care as directed by the patient.
REFERENCES


ventilated intensive care unit patients. *Australian Critical Care, 31*, 153-158. 
https://doi.org/10.1016/j.aucc.2018.02.001


http://dx.doi.org/10.1016/j.ijnurstu.2017.06.016

http://dx.doi.org/10.1016/j.iccn.2016.08.002


APPENDIX A:

CAT MODEL

Gallois, Ogay & Giles, 2005.
APPENDIX B:

IRB LETTER OF APPROVAL

August 12, 2019

Lanette Dumas
College of Nursing
Tampa, FL 33612

RE: Expedited Approval for Initial Review
IRB#: Pro00038886

Title: A Grounded Theory Study of Post-Extubated Patients: What are the Preferred Methods of Communication During Their Experience of Endotracheal Intubation with Mechanical Ventilation?

Study Approval Period: 8/11/2019

Dear Ms. Dumas:

On 8/11/2019, the Institutional Review Board (IRB) reviewed and APPROVED the above application and all documents contained within, including those outlined below. Please note this study is approved under the 2018 version of 45 CFR 46 and you will be asked to confirm ongoing research annually in place of a full Continuing Review. Amendments and Reportable Events must still be submitted per USF HRPP policy.

Approved Item(s):
Protocol Document(s):
Pro 00038886 Study Protocol V1.0.07.16.19.docx

Consent/Assent Document(s)*:
TGH Patient Consent , Version 1, 08.08.10.pdf

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent documents are valid until the consent document is amended and approved.

It was the determination of the IRB that your study qualified for expedited review which includes activities that: (1) present no more than minimal risk to human subjects, and (2) involve
only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45 CFR 46.110 and 21 CFR 56.110. The research proposed in this study is categorized under the following expedited review category:

(5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis).

(6) Collection of data from voice, video, digital, or image recordings made for research purposes.

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your study qualifies for a waiver of the requirement for signed authorization as outlined in the HIPAA Privacy Rule regulations at 45 CFR 164.512(i), which states that an IRB may approve a waiver or alteration of the authorization requirement provided that the following criteria are met:

(1) the PHI use or disclosure involves no more than a minimal risk to the privacy of individuals;
(2) the research could not practicably be conducted without the requested waiver or alteration; and
(3) the research could not practicably be conducted without access to and use of the PHI.

A partial waiver of HIPAA Authorization is granted for recruitment/screening only; signed Authorization will be obtained as part of the informed consent process. Pursuant to this partial waiver, the study team is allowed to obtain PHI through a record review of adult patients admitted to the TGH ICU to confirm eligibility as outlined in the protocol.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB via an Amendment for review and approval. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) business days.

We appreciate your dedication to the ethical conduct of human subjects research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Melissa Sloan, PhD, Vice Chairperson
USF Institutional Review Board
APPENDIX C:

PARTICIPANT CONSENT FORM

Study ID: Pro00038886_MOD000003 Date Approved: 11/7/2019

Informed Consent to Participate in Research Involving Minimal Risk and Authorization to Collect, Use and Share Your Health Information

Information to Consider Before Taking Part in this Research Study

Title: A Grounded Theory Study of Post-Extubated Patients: What are the Preferred Methods of Communication During Their Experience of Endotracheal Intubation with Mechanical Ventilation?

Pro #: 00038886

Overview: You are being asked to take part in a research study. The information in this document should help you to decide if you would like to participate. The sections in this Overview provide the basic information about the study. More detailed information is provided in the remainder of the document.

Study Staff: This study is being led by Lanette Dumas who is a graduate student at/in University of South Florida, College of Nursing. This person is called the Principal Investigator. Lanette Dumas is being guided in this research by Dr. Paula Cairns. Other approved research staff may act on behalf of the Principal Investigator.

Study Details: This study is being conducted at Tampa General Hospital and is supported/sponsored by University of South Florida, College of Nursing, and Tampa General Hospital. The purpose of the study is to learn about your experience of trying to communicate while you had a breathing tube and were on a ventilator. The interview will take place in your hospital room and will take 20 to 30 minutes. The interview will be audio-recorded.

Participants: You are being asked to take part because you were unable to communicate while you were ill. We want to see how you tried to communicate and how that made you feel.

Voluntary Participation: Your participation is voluntary. You do not have to participate and may stop your participation at any time. There will be no penalties or loss of benefits or opportunities if you do not participate or decide to stop once you start. Your decision to participate or not to participate will not affect your healthcare at Tampa General Hospital.

Benefits, Compensation, and Risk: We do not know if you will receive any benefit from your participation. There is no cost to participate. You will not be compensated for your participation. This research is considered minimal risk. Minimal risk means that study risks are the same as the risks you face in daily life.

Confidentiality: Even if we publish the findings from this study, we will keep your study information private and confidential. Anyone with the authority to look at your records must keep them confidential.

Social-Behavioral Adult, Pro00038886, Version # 2.0, Date: 08-26-19
Why are you being asked to take part?
We are asking you to take part in this research study because you had a breathing tube and were on a ventilator.

Study Procedures:
The expected duration of participation will be 20 to 30 minutes and the number of visits will be one session. The interview will take place in your room. The interview will be audio-recorded and then transcribed by principal investigator.
At the visit, you will be asked to:
- Describe your experience of trying to communicate while you had a breathing tube in place and were on a ventilator.
- The principal investigator will ask you to share your experience of trying to communicate while you had a breathing tube in place and were unable to use your voice.
- Audio-taping of the interview will be used once your consent is given. You will be assigned an arbitrary code number to conceal your identity on all research data, and all research data will be maintained in locked file cabinets under the direct supervision of the PI. The PI will have access to your audio-taping, and you will be assigned an arbitrary code number for de-identification. The audio-recordings will be maintained for 5 years after the Final Report is submitted to the IRB, and after 5 years will be audio-taping will be deleted.

Total Number of Participants
About 40 individuals will take part in this study at USF and TGH.

Alternatives / Voluntary Participation / Withdrawal
You do not have to participate in this research study.

You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study.

Benefits
You will receive no benefit(s) by participating in this research study.

Risks or Discomfort
This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.

Compensation
You will receive no payment or other compensation for taking part in this study.
Costs
It will not cost you anything to take part in the study.

Conflict of Interest Statement
There is no conflict of interest

Privacy and Confidentiality
We will do our best to keep your records private and confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Certain people may need to see your study records. These individuals include:

- The research team, including the Principal Investigator, study coordinator, research nurses, and all other research staff.
- Certain government and university people who need to know more about the study. For example, individuals who provide oversight on this study may need to look at your records. This is done to make sure that we are doing the study in the right way. They also need to make sure that we are protecting your rights and your safety.
- Any agency of the federal, state, or local government that regulates this research. This includes: the Department of Health and Human Services (DHHS) and the Office for Human Research Protection (OHRP).
- The USF Institutional Review Board (IRB) and its related staff who have oversight responsibilities for this study, and staff in USF Research Integrity and Compliance.

We may publish what we learn from this study. If we do, we will not include your name. We will not publish anything that would let people know who you are.

Data collected for this research will be stored at the College of Nursing, located at the University of South Florida in the United States.

You can get the answers to your questions, concerns, or complaints.
If you have any questions, concerns or complaints about this study, call Lanette Dumas at (813) 317-6378. If you have questions about your rights, complaints, or issues as a person taking part in this study, call the USF IRB at (813) 974-5638 or contact by email at RSCH-IRB@usf.edu.

Authorization to Use and Disclose Protected Health Information (HIPAA Language)
The federal privacy regulations of the Health Insurance Portability & Accountability Act (HIPAA) protect your identifiable health information. By signing this form, you are permitting the University of South Florida to use your health information for research purposes. You are also allowing us to share your health information with individuals or organizations other than USF who are also involved in the research and listed below.

In addition, the following groups of people may also be able to see your health information and may use that information to conduct this research:

- The medical staff that takes care of you and those who are part of this research study;
• Each research site for this study including TGH. All designated review committees such as Data Safety and Monitoring Board
• The USF Institutional Review Board (IRB) their related staff who have oversight responsibilities for this study, including staff in USF Research Integrity and Compliance and the USF Health Office of Clinical Research.
• Data Safety Monitoring Boards or others who monitor the data and safety of the study;
• There may be other people and/or organizations who may be given access to your personal health information, including Tampa General Hospital.

Anyone listed above may use consultants in this research study, and may share your information with them. If you have questions about who they are, you should ask the study team. Individuals who receive your health information for this research study may not be required by the HIPAA Privacy Rule to protect it and may share your information with others without your permission. They can only do so if permitted by law. If your information is shared, it may no longer be protected by the HIPAA Privacy Rule.

By signing this form, you are giving your permission to use and/or share your health information as described in this document. As part of this research, USF may collect, use, and share the following information:
• Your research record
• All of your past, current or future medical and other health records held by USF, other health care providers or any other site affiliated with this study as they relate to this research project. This may include, but is not limited to records related to HIV/AIDS, mental health, substance abuse, and/or genetic information.

You can refuse to sign this form. If you do not sign this form you will not be able to take part in this research study. However, your care outside of this study and benefits will not change. Your authorization to use your health information will not expire unless you revoke (withdraw) it in writing. You can revoke your authorization at any time by sending a letter clearly stating that you wish to withdraw your authorization to use your health information in the research. If you revoke your permission:
• You will no longer be a participant in this research study;
• We will stop collecting new information about you;
• We will use the information collected prior to the revocation of your authorization. This information may already have been used or shared with others, or we may need it to complete and protect the validity of the research; and
• Staff may need to follow-up with you if there is a medical reason to do so.

To revoke your authorization, please write to:
Principal Investigator
For IRB Study # Pro 00038886
University of South Florida, CON 12901, Bruce B. Downs, Tampa, FL 33612

While we are conducting the research study, we cannot let you see or copy the research information we have about you. After the research is completed, you have a right to see the information about you, as allowed by USF policies.
Consent to Take Part in Research and Authorization for the Collection, Use and Disclosure of Health Information

I freely give my consent to take part in this study and authorize that my health information as agreed above, be collected/disclosed in this study. I understand that by signing this form I am agreeing to take part in research. I have received a copy of this form to take with me.

Signature of Person Taking Part in Study/Authorization ________________________________ Date _________________

Printed Name of Person Taking Part in Study _________________________________

Statement of Person Obtaining Informed Consent and Research Authorization

I have carefully explained to the person taking part in the study what he or she can expect from their participation. I confirm that this research participant speaks the language that was used to explain this research and is receiving an informed consent form in their primary language. This research participant has provided legally effective informed consent.

Signature of Person Obtaining Informed Consent _________________________________ Date _________________

Printed Name of Person Obtaining Informed Consent _________________________________
APPENDIX D:
COMMUNICATION BOARD
Reprinted with permission from Tampa General Hospital
Can you scoot me up?

until I get a drink and I really need to clear my tho. I'm not doing this feels like I can't B.