




Communication with Chronic Patients Weaning from Mechanical Ventilation: A Qualitative Study on Iranian ICU Caregivers

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Abstract

Background: Mechanical ventilation in chronic patients is associated with major risks and complications. Therefore, rapid and safe weaning from mechanical ventilation is of great importance.

Objectives: The present study aimed to explain the communication strategies with chronic patients weaning from mechanical ventilation from the perspective of the intensive care unit (ICU) staff.

Methods: In this descriptive qualitative study, the participants included 12 ICU nurses, three nurse managers, and three patients, who were selected via purposive and maximum variation sampling from hospitals of Ahvaz in southwest of Iran. To collect the data, the researcher conducted semi-structured interviews using open questions. The recorded interviews were then transcribed and analyzed via conventional content analysis in MAXQDA.

Results: The two main themes identified in this study were [1] the time spent with the patient and [2] the soothing umbrella that indicated the importance of communication with the patients during the weaning process and the significance of nurses' use of communication strategies.

Conclusion: Communication strategies can lead to a better understanding of the patients and management of the weaning process. On the other hand, loss of communication skills can hinder the process of weaning. Therefore, improved communication skills and active bedside presence are recommended.

Keywords: *critical care nursing; weaning; mechanical ventilation; communication strategies*

Introduction

Mechanical ventilation is necessary for more than 90% of critically ill chronic patients. However, the weaning process takes more than 40% of the mechanical ventilation time [1,2]. Therefore, rapid and timely weaning from mechanical ventilation is important to minimize the side effects of this complicated process, including decreased cardiac output, ventilator-associated infections, hyper- or hypoventilation, atelectasis, oxygen toxicity, barotrauma, and psychological dependence on the ventilator, all by reducing the time of ventilation [3-5]. Weaning refers to the gradual process of reducing respiratory support for the patient until he/she does not need any

more assistance [6]. However, difficult or long weaning from mechanical ventilation can occur in almost 30% of chronic patients [7].

Although some patients are weaned from mechanical ventilation without any problems [8], in chronic patients, this process can be delayed due to several organizational and clinical factors, including the staffing level, skill mix, experience, and decision-making hierarchy [9]. Generally, weaning from mechanical ventilation is a complex and challenging process. It is not merely the discontinuation of ventilation, but is the continuity of care, familiarity with the patient, and development of patient-centered, individualized weaning plans, which suggest the importance of

nurses' involvement in this process [6]. Although all aspects of mechanical ventilation for chronic patients are considered as nursing challenges, weaning of patients from ventilators is often the most demanding process [10].

Over the past decades, the role of ICU nurses in the weaning process has been highlighted. The definition of weaning, which focuses on the patient and a special weaning plan, reflects the importance of communication between the nurses and patients in intensive care units (ICUs) and the complex nature of the weaning process [2]. However, few studies have been conducted on the involvement of nurses in the weaning process. Nurses are the main caregivers in ICUs, where they spend most of their time on patients who are connected to ventilators and need continuous monitoring; this reflects the important role of nurses in communication with the patients [11].

Regardless of the criteria selected for weaning from mechanical ventilation, nurses are responsible for identifying the criteria and the patient's access [8]. A nurse can understand the patient's condition through mutual trust and rapport, positive nurse-patient interactions, continuous contact, and meaningful interactions [9]. On the other hand, the nurses' performance has received increasing attention in the evolving environment of ICUs in Iran, given the important role of nurses, delegation of authority to them, and an increase in the number of nursing graduates [12].

Since nurses are continuously in contact with patients, attention to different dimensions of their communication with the patients can indicate their vital role during the weaning process [13]. Therefore, this qualitative study aimed to describe the communication strategies used by nurses during the weaning process and to identify the facilitators and obstacles of patient-nurse relationship, based on the experiences of ICU nurses.

Methods

To meet the objectives of this study, the conventional content analysis method was used. The setting of the study was the ICUs of five hospitals in Ahvaz, Iran. There were eight beds in each ICU, and the staff worked three shifts (morning, evening, and night). Patients with chronic conditions, such as chronic obstructive

pulmonary disease (COPD), cancer, and endocrine disorders, were admitted to the ICUs.

Besides willingness to participate in the study, the selected nurses had more than six months of work experience in the ICUs as caregivers to mechanically ventilated patients. The participants were selected via purposive sampling until reaching data saturation [14]. Data collection was initiated with clinical nurses, followed by nurse managers. Finally, to understand the patients' experiences, three adult chronic patients (>18 years), who had experienced weaning within the past ten days and were hospitalized in the surgical wards of the same hospital, were selected by purposeful sampling. Finally, a total of 18 participants, including 12 ICU nurses, three nurse managers, and three chronic patients, were enrolled in this study.

Permission was initially obtained from the Ethics Committee of Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran (code: IR.AJUMS.1396.83). Prior to the study, the researcher introduced themselves to the participants and then explained the objectives of the study, voluntary participation, the possibility of withdrawal from the study at any time, the reasons for recording the interviews, the confidentiality of data, and the participants' access to the information. Finally, an informed consent was obtained from the selected subjects.

To collect the data, semi-structured, face-to-face interviews were conducted. The first stage of the interview focused on discussions about work days with the participants, who provided care for mechanically ventilated patients in the ICUs of the hospitals. They were then asked to describe their perceptions and experiences of the weaning process. Next, regarding the stage of weaning, the main study questions were asked: "When caring for a patient, what needs do you consider in communication with the patient?", "What factors can help you to better communicate with the patient?", and "What aspects do you take into account during patient care?". The participants were also asked to provide clear examples of their experiences. The transcripts of the recorded data were prepared on the same day and later used as the original data. The data were collected over eight months in 2019. The first sessions of the interviews, which continued for 30 to 80 minutes,

were held in a private room in the ICU once the shift work was over.

The content analysis method, proposed by Graneheim and Lundman [15], was used as the method of data analysis in the current study. This method of analysis includes the following steps:

- The content of the recorded interviews was written and reviewed by the researcher several times to reach a general understanding.
- Words, sentences, or paragraphs were considered as semantic units. Semantic units were a collection of words and sentences linked together in terms of content. The semantic units were summarized according to the content.
- The semantic units reached a level of abstraction and conceptualization and were labeled by codes, according to the concept behind them.
- The codes were compared according to their similarities and differences and were classified with specific labels in more abstract classes.
- Finally, by comparing different classes based on deep and careful reflections, the extracted content of the data was introduced as the theme of the study.

Research rigor:

To measure the rigor of the study, the Lincoln and Guba criteria were applied [16]. The researchers evaluated the credibility of data via member-checking, peer-checking, and prolonged engagement. Next, the researchers contacted the participants and provided them with a full transcript of their coded interviews, besides a summary of the extracted categories, so that they could express their opinions about the researchers' interpretations.

Results

A total of 18 participants, including 12 nurses, three nurse managers, three chronic patients from five different hospitals, were recruited in this study. Table 1 presents the demographic data of the participants. According to the rich descriptions given by the participants, 1070 initial codes were extracted. After several reviews, the codes were summarized and classified based on similarities. The content of the codes was classified into main themes. The participants introduced seven strategies for establishing effective communication with patients in two main themes: the time spent with the patient and the soothing umbrella (Table 2).

Table 1: The demographic data of the participants

Demographic characteristics of participants	Nurse n=12	Nurse manager n=3	Patient n=3
Age	21-30	4	0
	31-40	3	1
	41-50	5	2
Gender	F	8	1
	M	4	2
Experience in ICU	<5 years	4	0
	6-10 years	5	1
	>10 years	3	2
Qualifications	BSc Nursing	10	1
	MSc Nursing	2	2

Table 2: The study themes

Themes	Sub-themes
Time spent with the patients	<ul style="list-style-type: none"> • Continuous communication • Long face-to-face interactions • Time spent on building trust
Soothing umbrella	<ul style="list-style-type: none"> • Reassuring the patient • Supporting the patient • Securing the patient's cooperation • Involving the family in the care process

Time spent with the patients

Since ICU nurses spend significant amounts of time with patients, they have a better understanding of their patients' conditions, their

responses to treatments, and spontaneous changes. For the participants, long-term communication with mechanically ventilated patients and the weaning process were the two main principles of

care during weaning. Moreover, three subthemes, including long face-to-face interactions, building trust, and frequent verbal communication with the patients, were identified.

Long face-to-face interactions

Several participants mentioned the significance of nurses' physical presence and long face-to-face interactions:

"I always ask my colleagues to have face-to-face conversations and interactions with the patients. A patient needs more than mere care by a distant nursing station. We should spend long hours with the patients." (P12, nurse manager)

The patients participating in this study claimed that the nurses' presence at their bedside for a long time could be a motivating factor for the weaning process. One of the patients said:

"Whenever the nurse was standing next to my bed, talking to me, I was hopeful that I would be able to breathe all by myself. I feel like I could not have done it if I had been alone. Their presence always reassured me." (P17, patient 2)

Building trust

For some participants, building trust and confidence seemed to be time-consuming. They believed that constant communication with the patients, which reflects the caregiver's commitment, can result in the patient's trust in nurses as caregivers:

"Why should the patient trust me and follow my commands when he or she does not see me a lot? We always try to stay close to our patients to gain their trust." (P2, nurse)

The patients believed that the nurses could gain their trust if they were constantly present at their bedside:

"Nurses were in contact with me for a long time, and I always tried to build a relationship with my nurse. I saw my nurse more frequently, and I trusted her." (P16, patient)

Frequent verbal communication with the patients

Nurses believed that they should frequently talk with their patients at their bedside, since care delivery without communication increases the patients' concerns and raises several questions in their minds. One of the nurses emphasized the importance of having frequent verbal communication with the patients:

"We should frequently talk with the patients when we are at their bedside. We should not only explain what we are doing, but also talk about the progress of the weaning process. It is obvious from the patients' eyes that they have several questions and need somebody to talk to." (P10, nurse)

Frequent and regular informing of patients about the weaning process, giving brief descriptions of each measure, and informing them about the progress of weaning play important roles in developing a logical understanding of the conditions in the patients' minds. These measures also reduce anxiety, confusion, and ignorance in the patients. In this regard, a nurse said:

"The patients' experiences show that they do not have complete trust in the quality of treatment and care, and fear of the unknown in the process of weaning increases their anxiety. They found the nurses' performance and verbal communication as the most reassuring and relaxing factors."

Securing the patient's cooperation

The patient's cooperation in the weaning process is a prerequisite for its progress. Independent breathing should be eventually done by the patient, and adherence to the instructions results in the gradual respiratory recovery. The participants emphasized the important role of nurses in convincing the patients to follow the instructions and encouraging them to focus on regular respiration:

"If the patient doesn't cooperate, nothing good will happen. Encouraging the patient to make more efforts, motivating them, and making them understand the importance of their efforts are very difficult tasks." (P1, nurse)

According to the participants, weaning is a process that is accomplished with the gradual improvement of the patient's respiratory efforts. Nursing care during the weaning process is provided to engage the patients in the process and to facilitate weaning from the ventilator. Considering the importance of controlling the patient's mentality and attitude, one of the nurses said:

"You know, we try to control the patients' mentality and attitude to encourage them. I dare say, many late cases of weaning are due to the lack of patient's cooperation, since doctors and nurses fail to establish a strong connection with the patients." (P8, nurse)

Involving the family in the care process

The nurses stated that they sometimes asked the family members who had the deepest emotional connection with the patients to attend the patients' bedside and talk to them to reinforce their tendency toward the process. One of the nurses said:

“After identifying the influential family members, I ask them to motivate the patients and elevate their mood before I enter the room. To encourage the patients' tendency for weaning from the ventilator, I also monitor them closely. If I see that the companion behaves well and doesn't have a negative influence, I let him or her spend more time with the patient; this is very effective.” (P3, nurse)

Overall, the participants suggested the presence of a family member, together with a nurse at the patient's bedside

Discussion

According to the present findings, nursing care for weaning from mechanical ventilation involves communication skills. This indicates the importance of having interactions with the patients during the weaning process and also highlights the significance of communication strategies in the use of nursing services [17-19], as nurses spend a major part of their time on engaging with the patients during the weaning process and encourage them for independent respiratory efforts. These strategies, which are mainly non-physical, are the main ways to return the patient to an independent life. In other words, these communication skills are an instrument for nurses to provide continuous and holistic care. These results are in agreement with those reported by Crocker and Scholes (2009), who emphasized on continuous care as a requirement for knowing the patient [18]. When the caregiver spends a lot of time with the patient during mechanical ventilation, he/she also benefits from this communication, as it boosts his/her confidence when making clinical judgments. Moreover, identification of the patient's incentives for weaning, familiarity with their personal preferences and coping styles, and selection of a proper strategy for easier weaning are a few other important factors [17,20].

According to a study by Schou and Egerod (2008), continuous communication facilitates weaning from mechanical ventilation. On the contrary, poor communication causes anxiety and leads to a slow recovery in patients [21]. While proper communication reassures the patients in ICUs, poor communication disturbs them [22, 23]. Also, the lack of information about the weaning process and the ongoing measures is the major complaint of patients after weaning; this issue has been also addressed by Schou and Egerod (2008) [24]. In this regard, Chen et al. (2009) reported that unfamiliarity with the implemented procedures during weaning and unanswered questions were the most stressful factors for the patients [25]. Besides, Ekerblad et al. (2009) reported that increasing the patient's confidence is an important component of a successful weaning process. Overall, the sense of security and confidence in patients can be built by nurses both physically and emotionally. Also, it seems that nurses have higher levels of knowledge than physicians about the patients' needs and capacities [26].

The purposeful and effective involvement of families is another widely used nursing strategy to wean the patients from mechanical ventilation. Nurses try to know their patients' interests by identifying the influential family members; this allows them to know their patients, which is a significant aspect of nursing care, according to nurses. The nurse-patient interactions can even continue in the family's presence [27], as this companionship and cooperation can protect the patient [28]. In this regard, Johnson (2004) concluded that the family's presence at the patients' bedside provides great comfort for them [29].

Conclusion

Based on the present results, loss of communication skills can hinder the process of weaning from mechanical ventilation. Therefore, improved communication skills and active presence of nurses at the patient's bedside are recommended

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Authors' Contributions:

Study conception and design: Ali Khalafi; data analysis and interpretation of data: Ali Khalafi; preparation of the manuscript: Sara Adarvishi; collection of data: Ali Khalafi; and critical revision of the manuscript: Farhad Soltani.

Conflict of interest

The authors declare that there is no conflict of interest.

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References

1. Cederwall CJ, Plos K, Rose L, Dubeck A, Ringdal M. Critical care nurses management of prolonged weaning: an interview study. *Nurs Crit Care*. 2014; 19(5): 236-42.
2. Lavelle C, Dowling M. The factors which influence nurses when weaning patients from mechanical ventilation: findings from a qualitative study. *Intensive Crit Care Nurs*. 2011; 27(5): 244-52.
3. Rosengren K, Bondas T, Nordholm L, Nordstrom G. Nurses' views of shared leadership in ICU: a case study. *Intensive Crit Care Nurs*. 2010; 26(4): 226-33.
4. Selimen D, Andsoy, II. The importance of a holistic approach during the perioperative period. *Aorn j*. 2011; 93(4): 482-87.
5. Tingsvik C, Johansson K, Martensson J. Weaning from mechanical ventilation: factors that influence intensive care nurses' decision-making. *Nurs crit care*. 2015; 20(1): 16-24.
6. Crocker C, Scholes J. The importance of knowing the patient in weaning from mechanical ventilation. *Nurs crit care*. 2009; 14(6): 289-96.
7. Kydonaki K, Huby G, Tocher J. Difficult to wean patients: cultural factors and their impact on weaning decision-making. *J Clin Nurs*. 2014; 23(5-6): 683-93.
8. Khalafi A, Elahi N, Ahmadi F. Continuous care and patients' basic needs during weaning from mechanical ventilation: A qualitative study. *Intensive Crit Care Nurs*. 2016; 37: 37-45.
9. Bornitz F, Ewert R, Knaak C, Magnet FS, Windisch W, Herth F. Weaning from Invasive Ventilation in Specialist Centers Following Primary Weaning Failure. *Dtsch Arztebl Int*. 2020; 117(12): 205-10.
10. Handerhan B, Allegrezza N. Getting your patient off a ventilator. *RN*. 1989 Dec 1;52(12):60-6.
11. Khalafi A, Elahi N, Ahmadi F. Holistic Care for Patients During Weaning from Mechanical Ventilation: A Qualitative Study. *Iran Red Crescent Med J*. 2016; 18(11): e33682.
12. Dale CM, Carbone S, Istanboulian L, et al. Support needs and health-related quality of life of family caregivers of patients requiring prolonged mechanical ventilation and admission to a specialised weaning centre: A qualitative longitudinal interview study. *Intensive Crit Care Nurs*. 2020; 58: 102808.
13. Ward D, Fulbrook P. Nursing Strategies for Effective Weaning of the Critically Ill Mechanically Ventilated Patient. *Critical care nursing clinics of North America*. 2016;28(4):499-512.
14. Polit DF, Beck CT. *Nursing research: generating and assessing evidence for nursing practice*. 9th ed. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2012.
15. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*. 2004; 24(2): 105-12.
16. Lincoln YS, Guba EG. *Naturalistic Inquiry*. 1st ed. United States: SAGE Publications; 1985.
17. Blackwood B. The art and science of predicting patient readiness for weaning from mechanical ventilation. *Int J Nurs Stud*. 2000; 37(2): 145-51.
18. Crocker C, Scholes J. The importance of knowing the patient in weaning from mechanical ventilation. *Nursing in critical care*. 2009;14(6):289-96.

19. Rose L, Dainty KN, Jordan J, Blackwood B. Weaning from mechanical ventilation: a scoping review of qualitative studies. *Am J Crit Care*. 2014; 23(5): e54-70.
20. Jenny J, Logan J. Knowing the patient: one aspect of clinical knowledge. *Image J Nurs Sch*. 1992;24(4):254-58.
21. Patak L, Gawlinski A, Fung NI, Doering L, Berg J. Patients' reports of health care practitioner interventions that are related to communication during mechanical ventilation. *Heart Lung*. 2004; 33(5): 308-20.
22. Magnus VS, Turkington L. Communication interaction in ICU--Patient and staff experiences and perceptions. *Intensive Crit Care Nurs*. 2006; 22(3): 167-80.
23. Russell S. An exploratory study of patients' perceptions, memories and experiences of an intensive care unit. *J Adv Nurs*. 1999; 29(4): 783-91.
24. Schou L, Egerod I. A qualitative study into the lived experience of post-CABG patients during mechanical ventilator weaning. *Intensive Crit Care Nurs*. 2008; 24(3): 171-79.
25. Chen CJ, Lin CJ, Tzeng YL, Hsu LN. Successful mechanical ventilation weaning experiences at respiratory care centers. *J Nurs Res*. 2009; 17(2): 93-101.
26. Eckerblad J, Eriksson H, Kärner A, Edéll-Gustafsson U. Nurses' conceptions of facilitative strategies of weaning patients from mechanical ventilation—A phenomenographic study. *Intensive Crit Care Nurs*. 2009; 25(5): 225-32.
27. Takman C, Severinsson E. A description of healthcare providers' perceptions of the needs of significant others in intensive care units in Norway and Sweden. *Intensive Crit Care Nurs*. 2006; 22(4): 228-38.
28. Hewitt J. Psycho-affective disorder in intensive care units: a review. *J Clin Nurs*. 2002; 11(5): 575-84.
29. Johnson P. Reclaiming the everyday world: how long-term ventilated patients in critical care seek to gain aspects of power and control over their environment. *Intensive Crit Care Nurs*. 2004; 20(4): 190-99.