

*Original Article***Patient's experiences of mechanical ventilation***Akram Arabi*, Khosrow Tavakol****Abstract**

BACKGROUND: Endotracheal or tracheostomy tube in mechanically ventilated patients disturb verbal communication with others. Therefore, patients are frustrated of requesting for their needs or problems related to artificial breathing. Therefore investigating self-experiences of these patients can be applied in providing them with a better care by clinical personnel.

METHODS: This is a qualitative phenomenological survey. The study population was patients who were mechanically ventilated at least for one time and were more than 12 years old. Data were collected during five months by deep interview and then were analyzed by Collizi's seven-stage method.

RESULTS: The findings of this research were classified in 139 codes and 3 categories as: 1) Interpersonal experiences, 2) Extra personal experiences and 3) Intrapersonal experiences.

CONCLUSION: Mechanically ventilated patients tolerate many stressors, which many of them are externally sustained. Better care will reduce these stressors, and make it easier for the patients to get along with the artificial breathing. Meanwhile some pleasure experiences had been mentioned by patients in this study.

KEY WORDS: Experiences, mechanical ventilation, patients.

IJNMR 2009; 14(2): 83-88

Most researches conducted in the field of mechanical ventilation (MV) have focused on the promotion of the device's functional quality, lengthening the life span and enhancement of cardiopulmonary function.

On the other hand, few researches have investigated the experiences of the patients who had undergone mechanical ventilation. Although, it could be the same as the patients who undergo chemotherapy or hemodialysis, it makes more problems among the patients under ventilation as they cannot communicate due to tracheal tube or tracheostomy as far as they are under these procedures.

There are controversial ideas regarding mechanical ventilation experiences. Some believe that the patients should be thankful. In fact, they believe surviving a disease is adequate and

investigating the patients' experiences is something extra. Meanwhile, there are opposite ideas in this regard. Thelan et al¹ (1990) explain: "According to Griess and Frenslar, although it sustains life, mechanical ventilation constitutes an environmental disturbance and therefore constitutes a stressor. The personal feelings that patients associate with the experience of mechanical ventilation influence their reactions and their ability to reconstitute or reach a steady state."

Tracheal intubation is an acute stressful event. Researchers found no specific relationship between the duration of intubation and stressors reported by patients receiving mechanical ventilation. The number of stressors reported in patients was the same for both short- and long-term mechanical ventilation.²

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Research Article of Isfahan University of Medical Sciences, No: 83475

Cook et al³ say if clinicians understand the lived experiences of patients, they can better appreciate patients needs during the weaning process, and by inference their role as clinicians, during weaning from mechanical ventilation.

Besides patient's experiences, some suggestions can be made for ICU team that can open new wider horizons toward understanding patients' expectations.

Mechanical ventilation is vastly administered for critical patients. In Iran, the increasing ratio of open heart surgeries and high number of head injury cases due to car accidents in addition to respiratory problems have made more demands for this procedure. It is so that each year many patients undergo mechanical ventilation due to various reasons while the treatment team has no live evidences documented about patient's experiences.

Personal, educational and clinical experiences of the researcher show that what has been conducted for these patients up to now has been taking care of the patients, sometimes sympathizing with them and finally asking them for more cooperation during ventilation process. The patients have rarely been listened to reveal their own experiences while being under ventilation.

What nurses as health providers do is a series of routine and stereotyped activities. How much they can help the patients to cope with ventilator more comfortably is being questioned itself. Vast usage of this treatment method and staffs' unawareness concerning patient's experiences imposed the researcher to collect these experiences in order to be able to take care of them with a new approach from this time on. The purpose of the present study was to investigate patients' experiences concerning mechanical ventilation.

Methods

This is a qualitative design since this sort of research fits well to detect people's experience on a specific phenomenon.

The qualitative research is a way to gain insight through discovering meanings. Within a holistic framework, qualitative research is a

means of exploring the depth, richness, and complexity inherent in phenomena. From this process, meaning is produced. However, because perception varies with the individual, many different meanings are possible.⁴

This is a phenomenology design focusing on getting the structures of human experienced phenomena through the analysis of verbal explanations from the viewpoint of the participants. The population studied comprised the patient's undergone mechanical ventilation. Inclusion criterion was to undergo the procedure at least once as well as age over 12 years and the desire to attend the interview. The sampling method was purposeful and included eight participants.

The study was carried out through interviews in the hospital for 5 months in 2005 on patients with inclusion criteria and history of mechanical ventilation in any hospital ward or at their homes in Isfahan.

The mean length of interview for each participant was 20-40 min. All the interviews were recorded and the participants were coded based on the time of their interview respectively.

In qualitative studies, the term validity refers to the extent to which the research findings represent reality.⁵ In these studies, validity is the credibility of description, conclusion explanation, interpretation, or other sort of account. It is the extent to which the findings of a study are true, and whether they accurately reflect the aim of the research and the social reality of those participating in it.⁶

In the present study, as the data were being collected by open interviews with the patients, it has been tried to direct the participants just to express their own experience from mechanical ventilation.

In qualitative research, reliability is defined as the measure of the extent to which random variation may have influenced stability and consistency of the results.⁵

In the present study, the researcher has tried to collect the data carefully and patiently and avoided any possible feedback. She has tried to use the participants who could remember their memories and yield important information. In

case of any deficiency in collection of data, the researcher has indicated to the item again to complete the data yielded by the participants. Since, the seventh step of Collizi's method is to refer to the participants again to be sure about the collected codes, reliability of the data was considered. It is indicated that all extracted codes and concepts obtained from the codes were studied and confirmed by someone else. The data were analyzed by Collizi's seven-stage method.

Results

There were three female and 5 male participants from total of 8 in this research. They aged 12-75 years. Most of the participants (62.5%) underwent MV between one week to one month and the rest were connected either for less than 24hrs, less than a week or more than a month. Two of the participants had been connected for more than once while the rest had undergone just once. Four of participants had high school diplomas, 3 less than high school diploma and two were illiterate.

The reason for ventilation was Guillain-Barre syndrome, Myasthenia Gravis, traumas and anesthesiology complications.

The results were obtained by Collizi's seven-step method. At the first step, the researcher carefully listened to the recorded tapes, wrote down the statements, and managed to share the feelings with the participants. At the second step, the researcher extracted the key words and sentences related to the under study phenomena as an important part of the work. At the third step, the researcher started to form the specific concepts for each extracted sentence and finally 139 codes were extracted from participants' remarks, for example: "feeling the death", "ambivalence in presence of accompanying person" and "good feeling after administration of suction".

At the fourth step, the concepts were classified in subject specified categories (formation of themes or sub concepts). For instance, the concept of "changes of physiologic needs" that itself includes themes of "feeling thirsty, hungry, suffocated, etc". At the fifth step, all extracted concepts were presented as a comprehensive and

complete description. They included main themes or concepts. In the present study, three main concepts were obtained from patients' experiences categorized as intrapersonal, extra personal and interpersonal experiences. Intrapersonal experiences were experienced when patients had no other stimulation except for connection to the mechanical ventilation. This concept comprises sub concepts obtained from patients' descriptions in the mentioned situations. Some of intrapersonal experiences included: "coping with present condition", "changes in self image", "loneliness", "pain and lack of peace", "fear from sleep", "unfamiliar environment" and "changes in physiological needs". The second group, extra personal experiences, were experienced when patients were sustained other stimulations in addition to their connection to mechanical ventilation, such as "suction", "change in position", "chest physiotherapy", "personal health", "change in sleep pattern", "weaning", "inspiration by Ambo" and "vital dependency to IV medication". The third group, interpersonal experiences, was experiences that the patients under ventilation had toward others. They included "communication deprivation", "communication by writing", "one way verbal communication" and "touch", which the patients experienced toward physicians, nurses and their accompanying persons.

Discussion

According to the findings of this research, the patients undergone mechanical ventilation have different experiences at the time of connection and weaning which most of them are stressful and imposed to them from the outside environment.

Some participants' remarks show how they have accepted their present situation. This fact reflects that some of them have inevitably accepted their present condition, whereas, some have well coped with that and hopefully passed their disease. Disease acceptance by the client drives them toward hospital admission, acceptance of procedures and possible operations.

In this study, some participants have expressed the remarks showing a change in their

self-image. For example, one patient said: my face had looked like a monkey. Kim et al² also have indicated that the patients expressed "uselessness" as experiences of Mechanical Ventilation.

Two other participants in the present study have reported "being in an unfamiliar environment". Their remarks showed that although they both have expressed an unfamiliar environment as a clear experience, this environment has been stressful to one but a new and exciting to the other. This difference can be due to their different ages and gender since one has been a 20-year-old girl while the other a 13-year-old boy.

One of the participants indicated sort of general and dull pain. There are no further findings regarding general pain mentioned by other participants. Some complained of pain in throat or incision site. There was not such an experience (general or local pain) mentioned by the patients in literature review. That can be an unpleasant feeling due to connection to the device. Another group of patients' experiences has been categorized in the present study as the theme of "physiological needs". In fact, connection to the device has caused some participants to feel suffocated, hungry and thirsty. Kim et al² express "the feelings of loss of control" indicated by the patients. Some participants reported experiences such as "dried throat", "feeling of cough" and "uneasy endotracheal and tracheostomy tube" which categorized as the theme "lack of peace" by the researcher in the present study. Patient's needs concerning emptying their tracheal cuff seem different. Some need it to be done in less than two hrs and others need it to be kept emptying for a longer period. In other researches, "lack of peace" has been indicated as a negative and unpleasant experience but in a different manner. For example Kim et al² indicate "the feeling of being tied down by equipment and feeling of gagging."

The participants had various experiences concerning loneliness. Except for one who found it pleasant, the others indicated that as intolerable. A 20-year-old female participant indicated: "I liked to be alone, because I didn't

like to be manipulated by anyone". In the other hand, a 43-year-old female participant indicated: "I liked my nurse to be with me as long as possible. Whenever I was left alone, I thought a hazard will be occurred soon". Engoren & Scott⁷ in a phenomenological study on patients undergone prolonged mechanical ventilation reported: "According to the participants they prayed a lot every day either in private or with family members." Cook et al³ reported loneliness as "fear of abandonment by staff," indicated by the patients, that is just after weaning from mechanical ventilation. Various patients' experiences concerning loneliness in the present study can be because patients' experiences have been investigated from their connection to weaning from mechanical ventilation but not just after weaning.

The second group of experiences in the present study is extra personal ones, experienced by the patients from outside stimulation. One of these is indicating "sleep disorders" in the present study. Sleep disorders have been categorized in two concepts. One is the "fear from sleep" (they think they die when they sleep) indicated in intrapersonal experiences and the other one is "change in sleep pattern" (in coordination between patients' sleep with nurses' working shifts) indicated in extra personal experiences since it originates from outside stimulants. Cook et al³ in a research on 43 patients undergoing mechanical ventilation, have recorded sleep disorders among patients' difficult experiences. She reported: "Although patients received no sedation for 45 hrs, many could not recall distinguishing between night and day. they reported being confused during weaning. Patients felt as though their locus of control was external to themselves, reflecting the intense dependence they have on the ICU team and on family members."

In the present study, although, the patients have not used word of "locus of control", they had relatively similar comments on that. Yielded from patients' experiences, they claimed that the factors of in coordinated sleep time are those controlling their sleep from outside their body. Therefore, the patients had no

self-control on their sleep. This can mean similarly for a patient with fear to sleep since they think "sleep is equal to death". Therefore, sleep control point was also outside their body and what they have self-control on it is to control death by not sleeping instead of controlling their amount of sleep. Regarding the obtained results, it seems that making coordination between patients sleeping time and nurses' work is a crucial need for the patients. This can be almost achieved by modification of routine care time based on patients' needs.

One part of patients' experiences in the present study was about their experiences on suction. High number of complaints about suctioning as a stressful item reveals a serious need for investigation to lower patients' physical problems related to this procedure. One of the participants explains that self-suctioning is more pleasant compared to that administrated by a nurse or by the accompanying person. Nurses should possibly take this issue under close attention to lower the invasion of this procedure. Thelan et al¹ say: "According to Griess and Frenslar negative experiences reported by the patients undergone mechanical ventilation are due to extra personal stressors of endotracheal tube and weaning."

One of the other extra personal experiences in patients with MV in the present study was the effect of "patients' position change" as an external stimulation. The point taken from participants' indications is that patients' need for position change varies from one to another. The shortest interval for position change in Iranian hospitals is two hrs while one of participants needed a rather shorter interval and another one needed a longer one. Meanwhile, this interval for other participants has seemed appropriate with any length.

Another extra personal experience in this study has been for chest physiotherapy. Patients' suffer due to physiotherapy seem to be lowered by explaining physiotherapy procedure and its benefits to the patients as well as their pain relief before beginning physiotherapy.

Ergoren and Scott⁷ in their research on patients with prolonged MV have named a group

of experiences as the theme "traumatic experiences."

Another external stimulation affecting MV patients in this study is related to their personal health. The procedures include sheets change and patients' bathing. The only unpleasant feeling among the participants is for washing the head that seems to be due to care provider's function. This feeling can be changed by modification of this procedure. In general, those patients passing the steps of disease acceptance and being aware of their role as a patient better accept some procedures such as position change, chest physiotherapy and personal health.

In this study, the expressed experiences related to "medication" are in two groups. One group is related to nurses' function in medication (presented in experiences related to "sleep disorders" as this function disturbed patients' sleep) and the other one is related to the medication substance entering their body. As indicated before, Cook et al³ extracted the phrase "locus of control". In the present study, some patients' feeling toward medication is close to this way of expression. In the other words, for some patients, the medication infused was vital and considered as the outside control point. So that the patient felt their locus of control dependent to medication.

One of the other extra personal experiences obtained by this study is patients' experiences at the time of weaning from MV. This liberation is due to either weaning or lack of electricity. So, at this part, patients' experiences concerning Ambo as well as extubation have been presented. Cook et al³ in her study on MV patients about their experiences at the time of weaning reported: "Patients have expressions such as I breathe to live or I can't order my brain to breathe." She mentioned the weaning experiences as "frustration, hopelessness, fear, and lack of mastery". The findings of the present study as well as literature review concerning weaning from MV show that these experiences are mostly stressful and unpleasant.

The third general concept obtained by this study is interpersonal experiences. One of the

patients' experiences in this regard is communicational problems expressed through numerous words by the patients categorized as the theme "communicational deprivation" in the present study. The great part of the expressed experiences is patients' communication with nurses. Another part of them is about communication with family members and friends and a minor part is about communication with the physician. Thelan says: "According to Griess and Frenslar, both sensory and procedural information must be provided by the nurse to the patients, and a mechanism for the patient to communicate must be established."¹

Kim et al² claimed "intubation and communicational problems caused by MV brings about deprivation that is counted as a great stressor."

One of the common communicational experiences expressed by the patients in the present study is lack of explanation about treatment procedures by the nurses toward them. Kim (1999) says: "Investigators consistently have reported that objective information or sensory information helps patients cope with and reduce psychological stressors."²

The participants have indicated their written communication with their physician as a very pleasant experience.

Another interpersonal experience in the present study is patient-nurse relationship or patient-accompanying person relationship through touching. Engoren and Scott⁷ in their research on prolonged MV patients reported:

"Another participant recalled an incident where her grandfather, whom she referred to as her guardian angel appeared at the bedside. She believed that he was there to help her and insisted that he pulled her through this traumatic event."

At the sixth step of Collizi's method, the researcher has summarized a general description to a real and necessary structure. A little part has been presented in the following: "Patients acquire lots of experiences after beings connected to MV. Many of them are unpleasant and stressful but besides these, there are yet pleasant ones."

At the seventh step of Collizi's method, the researcher has referred to the participants in order to reveal the theory and inferred concepts and she will send the research results to head nurses taking care of these patients.

In the end, patients' suggestions to health team have been collected as followings:

- 1) Explain more about ventilator.
- 2) Tell us what they expect us to do, how not to breathe and how to breathe.
- 3) We can cope with the device better, if they explain more.
- 4) Feel friendlier with our accompanying persons.
- 5) Do not judge instead of us.

Finally the authors declare that have no conflict of interest in this study and they have surveyed under the research ethics.

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