Journal of Biology, Agriculture and Healthcare
ISSN 2224-3208 (Paper) ISSN 2225-093X (Online)
Vol.4, No.24, 2014

Personal Lived Experience of Mechanically Ventilated Patients during the Recovery Period after Open-Heart Surgery at El Manial University Hospital

Azza Awed Alguindy [1]* Warda Youssef Mohamed [2] Ayman Salah Gado [3]
1 Assistant lecturer of Critical Care & Emergency Nursing, Faculty of Nursing, Cairo University, Egypt
2 Prof .of Critical Care & Emergency Nursing, Faculty of Nursing, Cairo University, Egypt
3 Prof. of Cardiothoracic Surgeries, Faculty of Medicine, Cairo University, Egypt
*E-mail of the corresponding author: azzaalguindy@cu.edu.eg

Abstract
Patients on mechanical ventilators are subjected to extreme physical and emotional stress in the Intensive Care Unit .Less attention has been paid to patients' subjective experience of mechanical ventilation; even though psychological factors have been proposed as important determinants of outcomes in some patients. Thus Critical care nurses need to be cognizant of the importance of maintaining a close and supportive environment for the patient. Therefore the aim of this study was to explore the personal lived experience of Mechanically Ventilated patients during Recovery Period after Open-Heart Surgery. The following research question was stated; what are the personal lived experiences of patients connected to mechanical ventilator during recovery period after open-heart surgeries? A qualitative phenomenological design was used using purposeful sample. The data saturation occurred with fourteenth participants. In-depth Semi-structured interview was used to collect data using a pre-prepared interview question guide which was written in the lay Arabic language. All interviews were audio tape recorded. The interviews were transcribed verbatim and analyzed using Giorgi's methods for phenomenological analysis. Two major themes were identified through analysis: physical experiences and emotional experiences contain four and nine subthemes respectively. Physical experiences contains: breathlessness, mouth dryness, pain and physical discomfort. And emotional experiences contain; shock, bothering, near death, inability to endure, powerlessness, knowledge deficit, sense of safe/unsafe, body image, and spirituality. Participants responses centered on spiritual aspect. Ethical principles were maintained throughout the study. The participants' identified experiences formed the basis for formulation of recommendation guidelines to improve nursing management of mechanically ventilated patient during recovery period after open heart surgery.
Keywords: Lived Experience, Mechanically Ventilated Patients, Recovery Period, and Open-Heart Surgery

1. Introduction

Patients on mechanical ventilator are subjected to extreme physical and emotional stress in the intensive care unit such as sleep deprivation, sensory overload and feeling of helplessness and isolation. (Jordan, Rooyen& Strumpher, 2002) The sources of stress on patients in ICU include health care providers, visitors, and environmental factors such as lightning and procedures like tracheal intubation and extubation, suctioning and physiotherapy,(Rattray ,Johnston & Wildsmith , 2004). Also, seeing critically ill patients, limited visiting hours, lighting of the wards, seeing strange machines, dress code in the ICU, and noise made by the staff are stress factors to patients in ICU, (Khazali & Shamse, 2006). Recently, Puntillo et. al, (2013), reported additional symptoms experienced by critical care patients, such as tiredness, restlessness, anxiety, sadness, hunger, fear, and confusion.

The mechanically ventilated patients were aware of their surrounding during ICU stay and were able to recall their frightening experiences. They were aware of what was happening to them though they were sedated, (Roberts, Rickard, Rajbhandari & Reynolds, 2007). Additional stressful experiences associated with the endotracheal tube, which can also increase psychoemotional distress in the ICU, (Samuelson , Lundberg & Fridlund , 2007), include pain or discomfort associated with the tube fastenings or with suctioning, interference with sleep, feeling choked, insufficient air, breathing difficulty after extubation, thirst, and difficulty swallowing , (Arabi & Tavakol, 2009).

Not all patients are able to remember the actual event of being ventilated or intubated. They do seem aware of the life-threatening nature of their condition but this is often remembered as strange dreams, hallucinations and delusions while being ventilated (Lof et al, 2006). The time when they are removed from the ventilator will be their first chance to talk about these experiences, (Foster, 2010).

Most researches were 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, (Arabi & Tavakol, 2009). A better understanding of patients' experience is needed for nurses to develop approaches to take care of these patients, (Wang, Zhang, Li & Wang ,2009).Thus Critical care nurses need to apply technologies and treatments in a manner that acknowledges the lived experience of individual patients, (Schou & Egerod, 2008). Furthermore, the nurses' knowledge of patients' experiences contributes to gaining a deeper understanding of their health process, which will help to provide a better foundation for nursing care. (Delbarrio ,Lacunza , Armendariz , Margall & Asiain , 2004). Therefore, the aim of this study is to explore the personal lived experience of Mechanically Ventilated patients during Recovery Period after Open-Heart Surgery. And to suggest recommendation guidelines that could positively affect such patients' outcome.

2. Review of Literature

Patients receive mechanical ventilation for many reasons and for varying lengths of time. Some need ventilatory support for only a few hours; others need it for weeks, months, even years. Surgery for heart disease requires mechanical ventilation that in many cases is continued postoperatively in the intensive care unit (ICU) (Mittnacht et al, 2008). Also, Heisler, (2014), added that, after open heart surgeries the critical care environment is necessary to provide the patient with one on one nursing care and constant monitoring. At this time the ventilator will remain in use, providing breathing support while the patient remains sedated. One or more chest tubes, large tubes that are inserted around the surgical site, help remove any blood that may have collected around the heart. A large IV called a Swan-Ganz will also be in place, allowing staff to monitor critical heart functions and infuse medications.

Moreover , Patients emerging from open heart surgery are still on mechanical ventilation when transferred to the Critical Care Unit, (Avenue, 2014). Depending on the nature of the surgery, the patient's underlying condition, the intraoperative course, and the depth of anesthesia, the patient may require mechanical ventilation after surgery, (Smeltzer, Bare, Hinkle & Cheever, 2010). Furthermore, Walsh, Fang, Fuster & O'Rourke,(2012), added, The patient typically arrives in the ICU or postcardiac surgery recovery area from the operating room with the necessary apparatus for monitoring the hemodynamic parameters.

Thelan et al (1990) in, Arabi & Tavakol, (2009), explained:"According to Griess and Frensler, 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.

Samuelson,(2011), documented that, For mechanically ventilated intensive care patients the stay in an intensive care unit (ICU) is likely to be unpleasant due to the life-threatening condition, the therapeutic treatments including the presence of an endotracheal tube and the environment itself. Also, his study of unpleasant and pleasant memories of intensive care in adult mechanically ventilated patients revealed that, the participants described how the surroundings felt hostile, unfamiliar and confined due to apparatus, the view was restricted and there were irritating and disturbing noises, lights and odors. Feeling too hot or cold, or having an uncomfortable bed or pillow contributed to the distress. Even more disturbing were the frequent interferences of the staff. The participants felt they were in a crowded space with people, constantly talking, rushing in and out, with high-intensity activities frequently going on; some described the whole atmosphere as an annoying chaos.

Patients connected to a mechanical ventilator have to endure various experiences and emotions, which are unique to each patient. These patients are subjected to physical and emotional stress, which is related to the unfamiliar surroundings of the intensive care environment and the limitations caused by the process of ventilation. Factors that hamper the optimal functioning of patients on the mechanical ventilator include the inability to communicate, the fear of impending dependency and the reality of being faced with their own mortality. (Jordan, Rooyen, Strumpher,2002). Psychological and psychosocial stressors perceived by the mechanically ventilated patient include intensive care unit environmental factors, communication factors, stressful symptoms, and the effectiveness of interventions, (Loris, 2003). The role of mechanical ventilation in rousing and aggravating the psychologic disturbance mostly is related to impeding the patient's ability to communicate and restricting mobility, (Chatila & Criner, 2002).

Engstom , Nystrom , Sundelin. & Rattray , (2013) also assured that, patients after cardiac surgery experience discomfort such as pain due to the endotracheal tube, having to maintain an uncomfortable position in bed, a reduction in sensory input, sleep disturbance and feelings of isolation, and they struggle to regain control over their body. The experience of being intubated is more uncomfortable than painful. Also, some patient

reported the strapping used to secure the endotracheal tube more painful than the tube, which was situated in the nose or mouth. (Jordan, Rooyen& Strumpher, 2002). Additional stressful experiences associated with the endotracheal tube, which can also increase psychoemotional distress in the ICU, (Samuelson , Lundberg & Fridlund , 2007). Include pain or discomfort associated with the tube fastenings or with suctioning, interference with sleep, feeling choked, and insufficient air, breathing difficulty after extubation, thirst, and difficulty swallowing, (Wenham & Pittard , 2014).

Some mechanically ventilated patients described extremely unpleasant life-threatening experiences such as not being able to breathe, not getting enough air, feelings of being choked due to secretions while being connected to mechanical ventilator (Samuelson, 2011). Most patients receiving mechanical ventilation experience dyspnea, which was significantly associated with anxiety (Puntillo, et.al.,2013).

Mechanically ventilated patients have severe sleep disruption and typically encounter loss of circadian sleep pattern, steep fragmentation, increasing proportions of transitional stages of sleep, and loss of slow wave and rapid eye movement sleep is associated with these same sleep abnormalities. Recent studies have shown that the ventilator mode and inappropriate settings can contribute to sleep fragmentation, and it is important to avoid overventilation that can induce central apneas when using spontaneous breathing modes, (Ozsancak, ,Ambrosio, Garpestad, Schumaker& Nicholas , 2008). Noise, pain and discomfort as well as modes of ventilation, and many drugs used in ICU are among the possible causes of sleep deprivation in critically ill patients, (Tembo, Parker & Higgins, 2013). But most Patients in ICU perceive noise as a common cause of disrupted sleep on the ICU and may find it difficult to get to sleep because of the continuous background noise, (Wenham & Pittard , 2014).

Also, Hoit, Banzett & Brown (2008) reported that, critically-ill patients who require mechanical ventilation are at risk for mental stress because they know that their ability to breathe depends on assistance from a machine. The presence of an endotracheal (or tracheostomy) tube makes it extremely difficult for most ventilated patients to communicate their physical and emotional needs. Communication difficulties create great stress for patients treated with mechanical ventilation, (Samuelson , Lundberg & Fridlund, 2007). Leading to psychoemotional distress, including indications of depression, anxiety, fear and anger, frustration, panic, sleeping disorders, decreased self-esteem, and loss of control, (Khalaila,et. al. , 2011). Also, Communication difficulties are a source of great stress for mechanically ventilated patients, often leading to feelings of vulnerability and powerlessness, (Coyer, Wheeler, Wetzig & Couchman, 2007). And evokes feelings of frustration and helplessness, (Samuelsson, 2011). Nurses, therefore, have to pay close attention to the patient's efforts to communicate nonverbally.

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 (Kim, Garvin & Moser, 1999) in (Arabi & Tavakol, 2009).
Patients are likely to see their removal from the ventilator as a sign that their condition is improving. However, they may still be troubled by the experience and find it difficult to discuss. (Gallimore, 2007). Not all patients are able to remember the actual event of being ventilated or intubated. They do seem aware of the life-threatening nature of their condition but this is often remembered as strange dreams, hallucinations and delusions while being ventilated (Lof et al, 2006). The time when they are removed from the ventilator will be their first chance to talk about these experiences, (Foster, 2009).

3. Significance of the Study

The care of mechanically ventilated patients is a fundamental component of nurses' clinical practice in the intensive care units. From the clinical experience of the researcher, it has been observed that, being connected to mechanical ventilation during recovery period after open heart surgeries was expressed as the most stressful and harsh experience to those patients despite of being connected to other multiple invasive devices.

In Egypt, the increasing numbers of open heart surgeries has made more demands for this procedure during recovery period after such surgeries. At El Manial University Hospital there is a significant increment in numbers of open-heart surgeries; thus, in the year of 2009 there were 660 patients, while, in the year of 2010 there were 829 patients, (Reports of Statistical Administration and Medical Records at, El-Manial University Hospital, ,2010). This study will add to the body of knowledge regarding experience of such patients, thus provide data base that can be utilized by health professionals in the provision of the future care for such group of patients, In addition it suggests recommendation guidelines that could positively affect such patients' outcomes, and maintaining a cost- effective patient care, as it might shorten hospital stay. Finally, it is hoped that, this effort will generate attention and motivation for further investigations into this area.

4. Aim of the Study

The aim of this study is to explore the personal lived experience of Mechanically Ventilated patients during Recovery Period after Open-Heart Surgery. To fulfill the aim the study the following research question were formulated: What are the personal lived experiences of patients connected to mechanical ventilator during recovery period after open-heart surgery at Al Maniel University Hospital?

5. Methodology

5.1 Research Design:

Qualitative phenomenological design was used for this study. The phenomenology design fits well to detect people's experience on a specific phenomenon, and is focusing on getting the structures of human experienced phenomena through the analysis of verbal explanations from the viewpoint of the participants. The lived experience of the world of everyday life is the central focus of phenomenological inquiry, in other words, the goal of phenomenology is to describe lived experience; (Strebert & Carpenters, 2011).

5.2 Participants:

A purposeful sample was used in this study, to provide rich information for in- depth study. The researcher reached the saturation point after the fourteenth participant. Those who had undergone mechanical ventilation during the recovery period after open-heart surgery, 72 hrs. at least after extubation, (this time period was chosen in order to maximize the patients' recall of their experience). And those who are willing to participate in the study and who are fully conscious, oriented and have the ability to communicate, regardless of their literate status.

5.3 Legal and Ethical Considerations:

Once the official permission from ethical committee was granted to proceed with the study, Participation in this study was voluntary; each participant was informed that he/she had the right to withdraw from the study without any rational. An oral description of the study was clarified to the participant. The usual assurance of anonymity and confidentiality was given to them. Verbal and written consent was taken from the participants to record the interview. After each interview, the researcher wrote a verbatim transcription for each interview and replaced the names of the participants by code numbers to keep the privacy. In addition, after the completion of the study the recorded tapes were kept in a safe locked drawer to keep confidentiality. Also Patients were assured that the data would not be reused in another research study without their permission.

5.4. Settings:

The settings from which the participants were recruited:

ICU of cardiothoracic surgeries, at El Manial University Hospital where the included participant admitted immediately postoperative and spend about 3 days depending on their conditions. Intermediate ICU at the cardiothoracic surgical department: where the patient, transferred to, after his condition become more stable, and spends 3-5 days. The department of cardiothoracic surgeries, where the patient admitted before surgery and returned again after discharge from the intermediate ICU, the patient spends about one week unless any complications occurred, and then can be discharged from the hospital.

5.5. Procedure:

5.5.1. Conducting the Feasibility Study:

Feasibility study was done through which assessment of the setting was done regarding the physical set up, the willingness and cooperation of the staff personnel and the participants' conditions, how they are after surgery throughout the postoperative period? ; The ability to communicate, remember and report their experience in-depth, in order to attain these information, initial unstructured interviews were done with few number of patients.

5.5.2. Preparation of Interview Guide:

The interview questions guide was written in a language that is comprehensible and relevant to the participants, so that it includes several open-ended questions, which directed to the patient by the Arabic lay language in order to be understood and answered in-depth. This helped participants to explore and deeply express their experiences of mechanical it was divided into 2 parts. The first part was related to the Patients' sociodemographic and medical data. The second part contained open-ended questions related to the personal lived experience of mechanically ventilated patients during recovery period after open-heart surgery.

5.5.3. Pilot The Interview Guide:

The pilot study was conducted with three participants who met the selection criteria. The researcher was the main data collection instrument. Data was collected by means of interviewing.

After piloting, some modifications were made in the interview guide, these modifications considered minimal and weren't make core changes in this interview guide. All modifications were done in response to the patient's

reactions during interview, to allow easier fluent interview in order to encourage the patient to deeply express his experience without interrupted questions, and service the process of data analysis after that.

5.5.4. Data Collection:

Semi-structured in-depth interview was used for data collection, where it provided the opportunity for greater latitude in the answers. The researcher asked open-ended questions which are listed in the interview guide in the lay Arabic language in order to capture the linguistic as well as the cultural meaning of the response and enable the participants to move freely in their description of their personal experiences. Participants were interviewed three times in three different occasions. Each interview lasted approximately 25-50 minutes long and it was arranged at times and places convenient to the participants and the researcher.

All interviews were audio-recorded with the participants' permission for research purposes and analysis of data. The purpose of the first interview was to obtain a deeper insight about the participants' personal experiences of mechanical ventilator during recovery period after open-heart surgery, and it was done at least 72 hrs. after disconnection of mechanical ventilator. The purpose of the second interview was focused upon clarifying certain points, as well, and elaborating on the participants' experience. It gave the investigator an opportunity to expand, verify, and add descriptions of the phenomenon under investigation as well assist the participants in clarifying and expanding on inadequate description. The third interview aimed to validate data as well as certain participants' perceptions and to assist the researcher in naming the emerging themes. It was conducted once data analysis was completed, and the themes are identified, the researcher review the literature to place the findings within the context is what already known about the phenomenon.

5.5.5. Recording the Interview:

Regarding this study; the participants' permission for audio- recording of interviews was granted, anonymity and confidentiality of the recorded data was also assured.

5.5.6. Transcribing Qualitative Data:

In this study; Immediately After each interview the researcher listened to the audio- recorder and verbatim transcription was carried out. After that the researcher listened again while reading the transcription to assure accuracy.

5.6. Analysis of Data:

Data analysis was an ongoing process which started during data collection. After the interviews were transcribed verbatim, they were translated from Arabic into English. Data was analyzed following the guidelines for phenomenological analysis as proposed by (Giorgi, 1997). Initially the audio-recorded interviews were listened and transcribed, after that the transcription was read many times. Next step was to delineate the meaning units relevant to the research questions, and then these units were clustered into units of general meanings. After that the interpreted analysis were given back to the participants to check congruency of the written themes with what they exactly meant. Finally themes are identified which best exemplified the experience of patients during mechanical ventilation during the recovery period after open heart surgery. This process of data analysis through appears orderly and sequential endeavor. Giorgi (1997) precisely described this process using the following terminology: a) reading of interview; b) division into meaning units; c) transformation; d) validation, synthesis and general structure.

A) Reading of Interview:

First the researcher listened to each of the tapes, while at the same time reading the transcripts to get an impression of the whole text. Then the interviews were read, the first time to get to know the text – global reading – and then several times more to get a sense of the whole. The author tried to be open-minded and be "present to what is given precisely as it was given" during the first reading.

In other words, the researcher read the transcripts at first in isolation of the audio tape and then read while listening to the audio taped interview. While Giorgi (1997) does not specify how many times one must re-read the transcripts ''many times'', this was done until a sense of the descriptions was understood, this step is called familiarization step.

B) Division into Meaning Units:

To analyze the text of the interviews, relevant meaning units were formed by the researcher through slower rereading of the description. The meaning units, which still were in the subjects' own everyday language, were made with the authors' caring perspective and the phenomenon of preparation in mind. The researcher broke down the text into more manageable units, known as 'meaning units' with a focus on the phenomenon. This involved breaking the transcript into sections and each section delineated a particular meaning unit.

The researcher then organized the text according to similarities and differences, and in this phase of the analysis there was a movement between the whole and parts of the text. To delineate the meaning units relevant to the research questions, and then these units will be clustered into units of general meanings. These meaning units are

in the everyday language of the participants and are derived from their descriptions relating to the experience of mechanical ventilator.

c) Transformation:
The researcher then transformed the participant's every day expressions into psychological language paying attention to the phenomenon being investigated. That, the participants' everyday expressions of the meaning units were then transformed into caring terminology. The transformation took place through a process of reflection and imaginative variation. During this phase of the analysis, an abstraction took place with purpose to elucidate and develop the text. The researcher looked for 'perceptions' and 'emotions' that are expressed by the participants' description in order to come up with the findings. It is at this point that the psychological intentions that are contained in the meaning of the description were developed. This stage aimed to make explicit the implicit meanings, and it is this stage that allows the analysis to reveal meanings that are lived but not necessarily articulated in the description. There is a move away from the idiosyncratic detail of the previous stage, to a more general meaning.

D) Validation, Synthesis and General Structure:
The researcher then synthesized the transformed meaning units. and integrated into a consistent description of the phenomenon of preparation. Through descriptions of meanings, the phenomenon's variations and nuances appeared. A general structure emerged based on basic key themes/constituents, based on the transformed meaning units. This means; synthesis and integration of the insights made by the researcher about the transformed meaning units in order to make a final consistent description of the psychological structure (experience) under study.

The general structural description is an attempt to determine which constituents are essential across all of the descriptions, and synthesize them in order to encapsulate the essence of the phenomena under investigation. It is at this point, the relevant constituents were put together according to their intertwining meanings so that they could express lived experience. This step was essential in terms of understanding, looking out for the relevance and organizing the structure coherently. Validation was done that Interpreted analysis will be given back to the participants to check congruency of the written themes with what they exactly meant. The purpose of the validation was to guarantee that the interviewer had been faithful to the interview transcription in performing the analysis.

6. Limitations

The limitations of the study were as follows:
1- Difficulty was encountered in securing interviews, as some patients did not remember much about the ventilatory process, those were excluded from the actual study which was much more time consuming.
2- The initial interviews was done in the cardiothoracic surgical intensive care unit but was abandoned as frequent interruptions by nurses, alarms and noise levels in the intensive care environment made this interview unsuccessful. And most of participants were still tired to express their experience in depth.
3- Interviews in the general ward had to be done in a waiting room or any empty room available for this purpose, which was not available as patients were seldom in private rooms that would have ensured privacy and curbed interruptions.
4- The interviews were conducted with the participants using the Egyptian Arabic lay language, and some of participants used some expression that were difficult to be translated verbatim into English.
5- The setting of the study was chosen in one cardiothoracic department at EL Manial university hospital, therefore the findings also not necessary to represent the mechanical ventilator personal experiences in all cardiothoracic departments in Egypt.

7. Study Trustworthiness

The trustworthiness of the results of this study is enhanced by the detailed and accurate descriptions the lived experience of the mechanically ventilated patients during the recovery period after open heart surgery through:

7.1. Credibility:
The techniques of in-depth semi structured interview utilized using a pre-prepared interview guide written by the lay Arabic language which encouraged participants to talk freely and sharing their experiences, and helped to address issues of cultural transferability in language. All the interviews were carried out only by the researcher. Understandings of the environment (settings), by more than one visit were done during feasibility study. Also all the interviews transcribed verbatim. Then presented to the participants to assure that the narrative is accurate and a true reflection of their experience.

7.2. Transferability:
The demographic data were collected from the participants, in terms of age, education, marital status, occupation, along with specific descriptors of the study setting (field), which they were. This helps provide a clear description of the study culture in order to enable the reader to judge whether the findings could be transferred outside the study context. Purposive sampling used to address the issue of transferability since specific information is maximized in relation to the context in which the data collection occurred.

7.3. Dependability:
Dependability was optimized by systemically following the methods of a linear, step by step process, to allow for ease of following the progression of each meaning unit. Dependability is also assured through phenomenological reduction (bracketing); the researcher was always on guard of her own biases and assumptions that she might bring to the study.

7.4. Confirmability:
To ensure confirmability in this study, individual interviews were transcribed verbatim. In addition; Meaning units were identified and analyzed in a format that demonstrated the origin of the data. Original interviews, their transcriptions, and demographic data of the participants will remain in confidence with the researcher up until the point that it is destroyed. The process by which the Typical Structure and the Essential structure were derived followed Giorgi's methods for phenomenological analysis.

8. Results

The findings of analyzed data will be presented in two parts; part one illustrates description of participants in relation to their sociodemographic and medical history. The second part presents the major themes and subthemes detected after analysis of data. Quotes which extracted from participants' speech will support the presentation of themes and subthemes, these quotes from participants' speech will be illustrated in Arabic (the participants' own words) followed by its translation into English.

8.1. Part One: Description of Participants:
Fourteen participants constituted the study sample. All of them had valve diseases or coronary artery diseases, and undergone open heart surgeries. Nine of them were males and five were females. Their ages ranged from twenty one to fifty three years. Six of them were illiterate, one had no formal education but could read and write, the seven educated participants; their level of education, ranged from primary to university education. In relation to occupation, all female participants were house wives except for one of them was a university student. The remainders were varied in their occupation, but it was noted that most of them were craftsmen. Regarding the marital status; four participants were single and the other ten participants were married. All of the participants had not any past experience with mechanical ventilation except two participants; for one of those two, it was the second open heart surgery for him. The other, had his past experience when he visited a relative in the ICU who was connected to mechanical ventilator. In relation to the name of surgery; eight participants had VR (Valve Replacement) even MVR (Mitral Valve Replacement) or AVR (Aortic Valve Replacement). Six participants had CABG (Coronary Artery Bypass Graft). Regarding the duration of connection to mechanical ventilator; eight participants were connected for only one day, four participants were connected for two days, and the remaining two were connected for three days.

8.2. Part Two: Major Themes:
The participants' responses related to the personal lived experience of mechanical ventilator during recovery period after open-heart surgery are allocated in two major themes: physical experiences and emotional experiences.
8.2.1. Major Theme One: Physical Experiences:
The major theme of physical experiences contains four subthemes which are: feeling of breathlessness, mouth dryness, experience of pain and physical discomfort.
8.2.2. Major Theme Two: Emotional Experiences
The emotional experiences comprises nine subthemes which are: experience of shock, feeling of bothering, near death, inability to endure, powerlessness, knowledge deficit, sense of safe/unsafe, body image, and spirituality.

This is illustrated in the following figure (1); it is clear from this figure that the physical and emotional experiences are interrelated to each other that everyone can lead to or resulted to the other. As well, the subthemes also are interrelated;

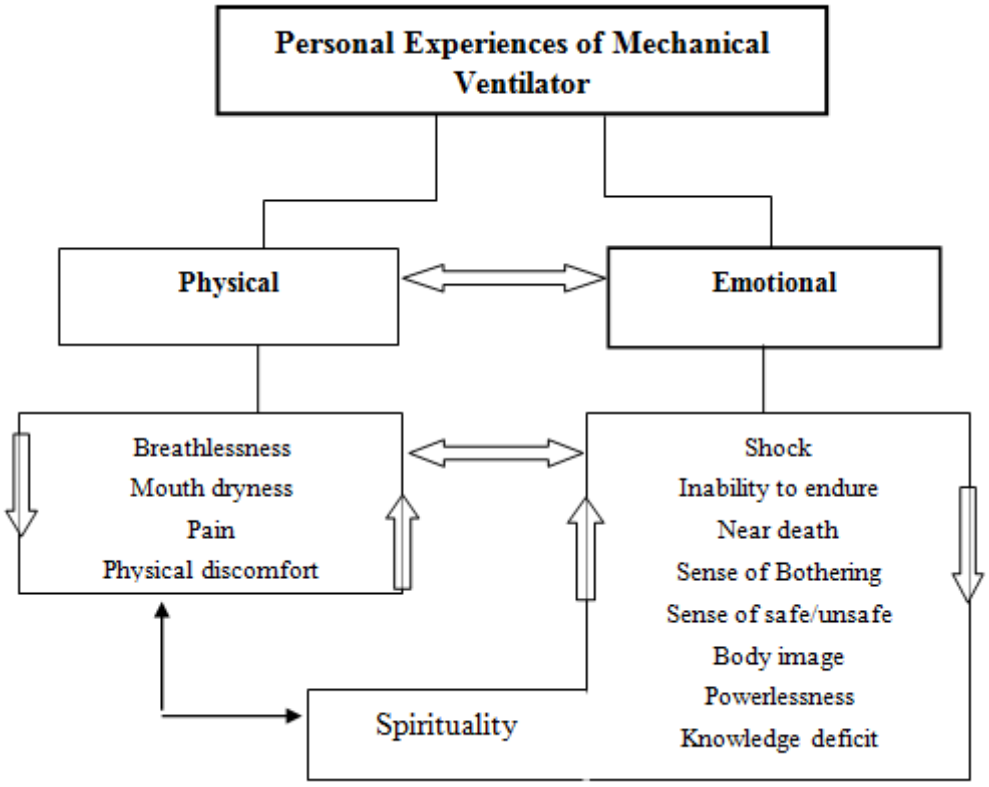

Figure (1):
Two major themes of personal lived experiences and its subthemes

Physical Intrapersonal Experiences*:*

Feeling of Breathlessness:

Some participants experienced the feeling of breathlessness; they felt that they weren't able to take their breath. Some of them experienced this feeling either as associated with feeling of discomfort during the period of connection or during the suctioning procedure. Three participants said:

مكنتش مرتاح خالص طول الفترة ده، و كان مضيقنى و خنقنى أوى و دايما كنت حاسس ان فى حاجة كاتمة نفسى جامد.

I had much discomfort along this period. It was really very bothering and strangling, I always felt there is something was restricting my breath.

Mouth Dryness:

Most of participant suffered from mouth dryness. To have a drink of water was a hope for each of those participants while they were connected to mechanical ventilator. The participant's quotes revealed that drinking water was the first and urgent need for them at this time especially immediately after disconnection. Eleven participants said:

ومطلبتش حاجة غيرها كنت عايز اشرب، كنت حاسس انى ر يقى ناشف و روحى هتطلع. أول حاجة طلبتها لما اتفصلت من عالجهاز هى المية

The first need after disconnection was only the water; I wanted to drink as I felt my mouth was too dry that I felt that my spirit will give up.

Experience of Pain:

Pain was also was reported as a significant complain experienced by participants during connection of mechanical ventilator during the recovery period after open heart surgery. Regarding the sites and cause of pain: pain in the throat consequently caused by the presence of endotrachael tube, pain in the ribs as a result of thoracotomy done during surgery, while the pain at in the chest was reported because of the presence of chest tubes, pain at the site of chest incision, pain in the leg was experienced as a result of surgical incision, and pain at the entire body was reported as a result of severe continuous restriction by connections. It was noted that there were few participants felt pain in more than one site. Four participants expressed:

كنت حاسس كأن فى نار فى زورى مكان الخرطوم .

I felt like burning sensation in my throat because of the presence of the tube.

One participant felt pain but not directly related to the endotracheal tube, but it was related to strapping used to secure the endotracheal tube:

حولين بقى كان وجعنى أوى، زى الحرقان و شد جامد فى الجلد أصل اللزق اللى كانوا لزقين بيه الخرطوم كان شادد أوى

Around my mouth was aching me a lot, it was like burning, because of the plaster of tube fixation was much tensed.

Three participants reported pain in their ribs in a form of throbbing pain caused by thoracotomy done at the time of surgery:

كان الالم فى صدرى و ضلوعى و كان علطول عضم صدرى بينشر عليه وده طبعا عشان فتحولى صدرى فالعملية.

Pain was in my chest and my ribs. I always felt throbbing in my ribs and this of course because they opened my chest during surgery.

One participant reported his pain was at the entire body caused by body restriction by connection for a long time:

كنت بحس بآلام فى كل جسمى عشان نايمة مكتفة فالسرير و مكنتش قادرة اغير وضعى خالص.

I felt pain all over my body because I was tied up in bed and I wasn't able to change my bed-position at all.

They felt this pain once they woke up and the pain continued along the period of connection and also continued for one or two days after disconnection.

Seven participants said:

أول مفقت كان فى ألم فى زورى كان موجود طول مالانبوبة موجودة و استمر تقريبا يوم أو يومين بعد الانبوبة متشالت.

Once I woke up, I felt pain in my throat, all along during the presence of the tube. It lasted approximately one or two days after the tube was removed.

Feeling of bothering and physical discomfort:

Some participants agreed that the physical sensation of being connected to an endotracheal tube and mechanical ventilator was very bothering, uncomfortable and also restricting. Others found that these connections interfered with breathing.

Eight participants said:

كنت مش مرتاحة و كان مضيقنى أوى، و كنت عايزة اشيله بأى طريقة.

I was discomforted and very bothered, and I wanted to remove it by anyway.

Another wording was used by four participants: they reported that they felt by strange things in their throat and also they wanted to remove it:

مضيقانى و كنت عايزة أشيلها. محطوطة فزورى حسيت بحاجات

I felt strange things were put in my throat, I wanted to remove it.

Another three participants expanded their description by adding that the connections of the mechanical ventilator were very restricting for them and they didn't know what to do except have patience until disconnection.

كنت حاسس ان الخراطيم ده مضيقانى و مكتفانى و مكنتش عارف اعمل إيه، فكنت صابر و خلاص لحد متتشال.

I was feeling that the connections bothered me, and restricted me, and I didn't know what to do. So I was patient and waiting for disconnection.

Emotional Intrapersonal Experiences:

Experience of shock:

Feeling of shock and fright was experienced by some participants especially at the moment of waking-up from anesthesia when found them connected to a mechanical ventilator. The feeling of shock may continue in some cases along the whole period of connection to the mechanical ventilator, this affected the participants' acceptance to the mechanical ventilator as a treatment and consequently negatively affected the whole participant's experience.

Two participants expressed that they get shocked at the first look at the mechanical ventilator:

أول مشفته اتخضيط منه بصراحة ، الجهاز كان شكله يخوف.

Once I saw it, frankly I get shocked; the apparatus appeared frightening

Two participants expressed that the mechanical ventilator and its connections were worrisome.

بصراحة هو الجهاز ده نفسه شكله يرعب و الخرطوم بتاعه شكله يخوف.

Frankly the apparatus by itself was horror and its connections were frightening.

One participant also expressed that their fearing of the mechanical ventilator continues during the whole period of connection:

كنت خايفة خالص و مرعوبة منه طول منا متوصلة عليه

I was very terrified and horror along the period of connection.

Near Death:

Some participant experienced a feeling that they were near death during the period of connection to mechanical ventilator; the participants felt insecure and that they would die at any moment. Some participants perceived the mechanical ventilator to be a terrible apparatus which meant serious physical condition. For some of them, their feeling was only during vagarious procedures e.g. suctioning. One patient said:

فى الفترة ده اوقات كتير كنت بحس ان روحى هتطلع وانى هموت فى أى لحظة.

During this period; many times I felt that my spirit will give-up and I will die at any time.

Another participant said:

كنت خايف بصراحة ، لما شفت الجهاز و الخراطيم ده حسيت انى مش هقوم تانى.

Frankly, I was afraid, when I looked at the apparatus and its connection, and felt like I wouldn't pass this situation.

Inability to Endure:

Most of participants experienced the feeling of the "*inability to endure"* the mechanical ventilator, they expressed that they weren't able to tolerate the connection to the mechanical ventilator that mean they were not able to endure the presence of the endotracheal tube. All participants' speech centered around; they were overwhelmed only by the disconnection of the mechanical ventilator by another meaning the disconnection was the main target of them during this period. One participant reported:

و قافلة زورى خالص و كنت عايزة أشيله بأى طريقة كنت زهقان منها خالص، حاجة داخلة فالحلق

I was really-annoyed when I felt that thing blocking my throat; I wanted to remove it by anyway.

Another participant expressed:

كنت مضايقة أوى ، كنت حاسة بعدم الراحة، حاجة مش مريحانى و مقيدة راحتى و كنت حاسة انى عايزة اشيل الخرطوم ده بأى طريقة.

I was very bothered, I felt with discomfort, something discomforted and restricted me, I felt that I wanted to remove it by anyway.

Powerlessness:

Feeling of Powerlessness during connection to mechanical ventilator was experienced by many participants. It was dominant in many participants' expressions; that they felt they were powerless in many situations during the period of connection to mechanical ventilator. This was cleared when the participants talked about in-bed movement, discomfort of in-bed movement, self care deficit, their sensations of connections and their feeling with impaired communication. These aspects of powerlessness are illustrated in figure (2):

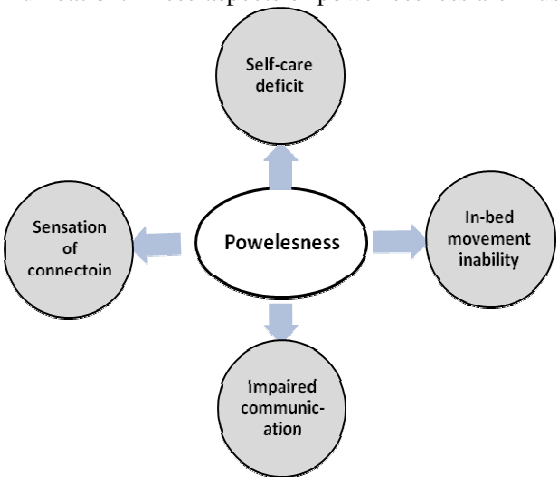

Figure (2)
The Meaning of Powerlessness According to mechanically ventilated patients

Related to in bed- immobility, three participants said:

مكنتش بقدر اعمل اى حركة عشان انا كنت زى المتربط فى السرير و زى المكتف، فكنت بسكت و خلاص.

I wasn't able to do my movement, because I was tied to the bed and was like restrained, so I remained still.

Related to Self-care deficit: four participants said:

مكنتش بقدر أعمل أى حاجة لنفسى عشان انا كنت زى المكتف بالخراطيم.

I wasn't able to do anything for myself, because I was like tight with connections.

Knowledge Deficit:

Knowledge deficit was considered one of the major themes of the patients' experience of mechanical ventilator during the recovery period after open-heart surgery, participants reflected that they had a knowledge deficit regarding three areas: 1) the connection to mechanical ventilator as an important component of recovery period after open-heart surgery; 2) the benefit or purpose of connection during this period; 3) the weaning process. Items of knowledge deficit according to the participants are showed in figure (3)

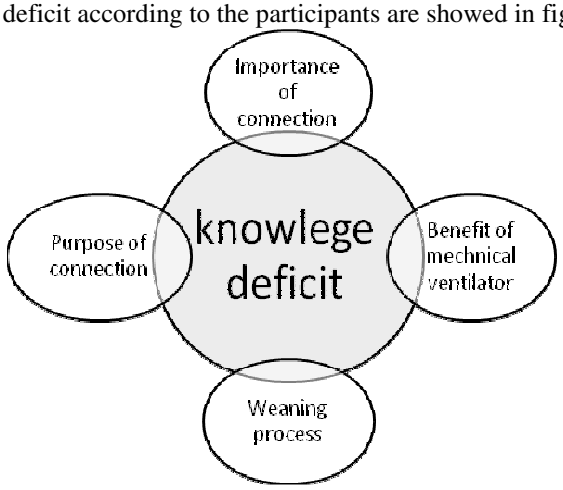

Figure (3)
Areas of participants' knowledge deficit

Eight participants expressed that they didn't know at all that they will connected to mechanical ventilator after surgery during recovery period.

محدش قلى أى حاجة قبل العملية.

Nobody told me anything beforehand.

Regarding the participants' awareness of the benefits or the purpose of connection to mechanical ventilator during this period: Nine participants didn't know its benefit or purpose of connection, this cleared from the following quotes taken from participants' speech:

إنا معرفش مكنتش عارفة انه بتاع تنفس ، انا كنت عارفة انه لازم يتوصل ، لكن مكنتش عارفة ده بتاع ايه و لا فايدتة ايه

I didn't know that it was for respiration; I only knew it had to be connected, but I didn't know why? And what was it used for.

Knowledge regarding the weaning process: All participants except one weren't informed that they will be disconnected, that they reported the doctor and the nurse disconnected the endotracheal tube suddenly without informing him before:

الدكتور و الممرضة جم و شالوه فجأة محدش قلى حاجة قبلها.

The doctor and the nurse come and remove it suddenly, nobody told me beforehand.

Sense of Safe/Unsafe During Connection to Mechanical Ventilator:

The sense of safety during connection of mechanical ventilator was described by the participants by the two extremes; some of them felt they were reassured by the connection of mechanical ventilator. The other expressed that the mechanical ventilator was a terrible apparatus that their connection to it meant seriousness of their condition.

Half of the participants agreed that connection to mechanical ventilator gave them sense of safety and they were assured along their connection. Four participants said:

طبعا كنت مطمن طول منا عالجهاز عشان هو أكيد مهم للعملية.

Of course I was reassured along connection to the apparatus, as sure it is important for the surgery.

While four of them expressed that the mechanical ventilator made them frightened:

لا مكنش مدينى إحساس بالأمان انا كنت حاسس انى انا هموت و كنت خايف خالص و مرعوب منه طول منا متوصل عليه.
It didn't reassure me at all, I was feeling that I will die, I was very afraid and frightened along the period of connection.

Body Image Is Nothing:

Body image is a subjective picture of one's own physical appearance established both by self-observation and by noting the reactions of others. The participants' speech revealed that the half of the participants expressed they didn't care about their image during the period of connection. Seven participants said:
مكنش فبالى الحكاية ده وقتها

At that time I didn't care about this issue

Spirituality:

Spiritual aspect was significantly dominant in most participants' responses, this means. Most of participants gave up to God all their affairs during the period of connection to mechanical ventilator. The spiritual relation with God has a very strong effect in alleviating such harsh experience; it was clear that this spiritual relation with God helped the participants accept many discomforts and difficulties during the period of connection. The participants expressed their spiritual relation with God in many different situations through their reactions by always praising God by the ending of their words, praying to God, depending on God, reading the holy Qur'an during the period of connection.

Regarding sense of safety during connection, one participant expressed his faith only with God regarding the sense of safety.
لا الأمان بربنا ده مجرد عملية عملتها و خلاص.
I believe that safety is with God. This was just an operation done.

Another one expressed that his faith is depending on God for everything and he did not mind any matter. انا كنت سايبها على الله ، كل حاجة بأمر الله.
I was depending on God. Everything is in His Hands.

One More participant said:
أنا كنت طول الفترة ده مسلم أمرى لله.

I gave up myself to God along the period of connection.

Further participant said:
مكنتش بفكرفى حاجة، و كنت طول الوقت بقرأ قرآن وبحمد ربناو ادعيه اقول إن أقوم من الى أنا فيه.
I didn't mind anything; I was always read holy Qur'an , thanking God and praying to God to help me to recover.

9. Discussion

This study was conducted in an attempt to explore the personal lived experiences of mechanically ventilated patients during recovery period after open-heart surgery. Despite the previously mentioned limitations; the study provides a rich description of personal lived experience and adds to the knowledge and understanding of the patient perspective regarding connection to the mechanical ventilation even for a short period of time, giving way to new insights.

The timing of data collection for this study was at least 72 hours after disconnection of the mechanical ventilator. In similar studies data collection was after weeks or even months after discharge. Although the timing of the current study considered early and short period of time after disconnection, the participants gave rich, in-depth data when describing their experiences. This is related to the nature of the Egyptian people who like to describe their feelings even in critical situations. They found the interview as a chance to express their feelings, which might relieve their stress and made them more comforted.

Participants in the present study described mechanical ventilation as terrible, uncomfortable more than painful, strange, unendurable and its connection means near death. The spiritual aspect was a great issue for most of participants during the period of connection ,which represented in continuous praying and praising God whatever the event was that means; the participants had a strong fixed doctrine and faith in God.

The personal experiences of the current study is rich with variety of experiences and reaction toward the mechanical ventilator; the personal experiences represent the internal feelings and emotional reactions

toward the mechanical ventilator, which is considered the main issue of Egyptian patients who are known to react mainly emotionally toward new events. It is noted that, physical and emotional experiences are interrelated to each other that everyone can lead to or relate to the other. And also the subsequent themes also are interrelated; for example the sense of breathlessness may cause a sense of not feeling safe during connection, being near death, having a sense of bothering and inability to endure and vise versa.

Pain and mouth dryness also may relate to physical discomfort, shock, inability to endure, sense of bothering, and also sense of powerlessness. In addition knowledge deficit can lead to all of these experiences, since if the participants have enough knowledge about the process of mechanical ventilation as a complementary part during recovery period after open heart surgery, they are less likely experience all of these negative experiences, or at least these experiences might be minimal or mild in their intensity. Also most of the participants reported that they had no concern about their body image. Among all of the negative experiences, they were not overwhelmed with concerns about their body image.

Also of note, it was found that the participant returned all his affairs during that period to God. This was represented by continuous praying and thanking of God, and this reflected in the subtheme, "spirituality" which was considered a central theme revealed from the participants' statements.

9.1. Physical Experiences of Mechanical Ventilation:
Breathlessness:

Almost half of participants experienced the feeling of breathlessness; either as associated with feelings of discomfort along the period of connection, during the suctioning procedure, or as a result of psychological strain of impaired communication. The other participants didn't directly express this feeling, but it was implied when they reported that they only started to take their breath after disconnection. This is supported by (Karlsson, 2012), in her study titled: "Traumatic to be on a ventilator treatment while conscious". The study showed that many people who were conscious while ventilator treatment experienced being breathless, from the tube and probes made it hard for them to relax and sleep. So breathlessness in Karlsson study was related directly to mechanical presence of the tube.

While in the current study breathlessness was related to many causes including discomfort associated with connection, during suctioning procedure and as a psychological consequence of impaired communication. Also it was documented by Samuelson (2011), when studying unpleasant and pleasant memories of intensive care in adult mechanically ventilated patients, some participants described not being able to breathe as one of the most unpleasant life-threatening experiences.

Another study of the lived experiences of adult intensive care patients who were conscious during mechanical ventilation by Karlsson, Bergboma, & Forsberg (2012) documented that, patients experienced an overall sense of being breathless. Although they were aware that the mechanical ventilator was a life-saver, and they had a strong desire to breathe by themselves, they simply could not manage to fill their lungs with air. In the current study there was no documentation of any desire or trial of patients attempting to breathe by themselves, and their sense of breathlessness was considered as consequence.

Mouth Dryness:

The participants' speech all centered on their feeling of mouth dryness, by they didn't express that they were feeling by thirst, but this was implied from their speech and the terms are similar.

A study of " Perceptions of registered and enrolled nurses on thirst in mechanically ventilated adult patients in intensive care units- A phenomenographic study" by Landstrom, Rehn,. & Frisman, (2009), the findings of this study revealed more detailed themes about thirst sensation. Findings revealed that mouth dryness was one of the signs of thirst sensation. In the current study, however mouth dryness was a main complaint of patients during the period of connection to mechanical ventilator.

According to Jordan, Rooyen, Strumpher(2002), in their study of the lived experience of patients on mechanical ventilation. Thirst was a problem experienced by patients on the ventilator, which contributed to the frustration they experienced. The frustration was a result of not being informed about why water was not permissible while they were on the ventilator. This study did not describe the patients' feeling of thirst or its effects like the current study.

Physical Discomfort:

Despite all bothering feelings experienced by participants, they did not find any alternative except patience until disconnection from the mechanical ventilator. Physical discomfort associated with sense of bothering, which is related to the emotional experiences, could not be separated in the participants' quotes, but it was separated only during categorization of the subthemes.

The study findings of Jordan, Rooyen, Strumpher (2002), showed that, some patients stated that the process of being intubated was more uncomfortable than painful. Others, however, reported that the strapping used to secure the endotracheal tube was more painful than the tube, which was situated in the nose or mouth. And these finding confirmed the findings of the current study. The strapping used to secure the endotracheal tube was interfering with breathing and gave a sense of strangulation.

In a qualitative study of the lived experience of post-CABG patients during mechanical ventilator weaning by Schou & Egerod,(2008). Another opinion emerged from the participants, in this study: patients' experiences of discomfort from the tube ranged from sensations of choking or overheating, to pressure and discomfort related to the endotrecheal tube. The patients were not concerned about the treatment itself as much as the discomfort related to mechanical ventilation. Similarly the study of Karlsson, Bergboma & Forsberg, (2012) documented that, the discomfort caused by the tracheal tube was very painful and beyond the patients' control.

Pain:

Pain was also reported as one of the worst experiences during connection of mechanical ventilator during the recovery period after open heart surgery. There is evidence that nurses still underestimate patients' pain in relation to mechanical ventilation (Coyer et al., 2007).

The participants experienced pain in the throat caused by the presence of endotrachael tube, pain in the ribs and sternum as a result of thoracotomy, while the pain at in the chest was reported because of the presence of chest tubes, and pain in the leg was experienced as a result of surgical incision. In addition pain in the entire body was reported as a result of severe continuous restriction by connections. Few participants felt pain in more than one site of those previously mentioned.

In the study of Jordan, Rooyen, Strumpher (2002), patients reported that they had experienced pain, especially a sore throat, after they had been removed from the mechanical ventilator. The sore throat was not permanent though and seemed to disappear within a few days after extubation. While patients in the study of Schou & Egerod, (2008), experienced swollen vocal cords, swallowing difficulties and soreness of the throat. Also the study by Karlssona, Bergboma & Forsberg, (2012) asserted that, the discomfort caused by the tracheal tube was very painful, beyond the patients' control, and something they simply had to endure. The suctioning of secretions was experienced as very painful and unpleasant, causing feelings of panic for some but not everyone. In addition to the study of (Arabi& Tavakol, 2009), some of its results were consistent with the current study though some were not. The participants in the current study specify one or two sites of pain, but in the study of (Arabi& Tavakol, 2009), one of the participants indicated general and dull pain. Others complained of pain in the throat or incision site like in the current study.

Regarding the nature of pain, in the current study, most of participants experienced pain as a burning and soreness in the throat, and this finding was in agreement with; Schou & Egerod 's study (2008), in which patients also experienced soreness of the throat. Only one participant experienced the burning sensation during the suctioning procedure, and this is also paralleled with the Arabi& Tavakol, (2009), investigation of the Patient's experiences of mechanical ventilation. In their study there was no description of how the patients felt the pain during suctioning. In a study of the patents' experience of pain after cardiac surgery by (Aslant, Badir, Aril, & Cakmakci, 2010), only one quarter of the subjects experienced pain during endotrachael tube suctioning. Also Karlssona, Bergboma & Forsberg, (2012) support that, the suctioning of secretions was experienced as very painful and unpleasant.

In the current study, one participant reported that there was a burning in his skin around his mouth because of strapping to secure the tube, and this agreed with (Jordan, Rooyen, Strumpher, 2002). Also four participants experienced a throbbing pain either in the incision site or in the ribs and the sternum. One participant reported pain at the chest tubes sites, in addition to the pain in the throat. The throat pain was described as pricking with each breath these sensations were confirmed by (Aslant, Badir, Aril, & Cakmakci, 2010), in their study in which, more than half of the subjects experienced throbbing pain and about one third of them

experienced the pain at the sites of chest tubes.

Emotional Experiences

Experience of shock:

Feeling of shock and fright was experienced by participants at the moment of waking-up from anesthesia and saw mechanical ventilator. It was the harshest moment which made the experience of mechanical ventilation such a traumatic and unforgettable experience. The feeling of shock may continue in some cases during the entire period of connection to the mechanical ventilator. This affected the participants' acceptance to the mechanical ventilator as a treatment and consequently negatively affected the participant's whole experience.

Most of participants perceived the mechanical ventilator as a horrible, terrifying and strange thing. This perception was related to the ventilator's shape as an apparatus and its complicated connections. This is supported by Samuelson (2011), whose results showed that, the acute situation, and being critically ill, were experienced as terrifying, threatening their existence, and causing feelings of shock. The fear and panic experienced were strong and were sometimes related to the struggle for breath with mechanical ventilator.

In a study by Karlssona, Bergboma & Forsberg,(2012) feeling of shock or fear were experienced only during harsh procedures; the suctioning of secretion was experienced as very painful and unpleasant, causing feelings of panic for some but not everyone. The study also documented that, the awareness led to a sense of panic, which in some cases lasted throughout the ICU stay.

Near Death:

Some participant experienced this feeling, it was related to a sense of insecurity during their connection to such a terrible apparatus, which meant they had a serious physical condition. For some of them, their feeling was only during vagarious procedures e.g. suctioning. This is supported by the (Jordan, Rooyen, Strumpher, 2002) study. Also Patients reported an awareness of their own mortality while on the ventilator. They realised that their survival depended on God's grace alone. Prayer was viewed as an important component in overcoming the disease process and the intensive care environment. These findings also imply the spirituality of those participants.

Also as confirmed by Samuelson (2011), the acute situation, being critically ill, was experienced as terrifying, threatening their existence, causing feelings of shock and chaos as well as fear of dying. The issue was different in the study of, (Karlssona, Bergboma & Forsberg, 2012) in which patients described experiencing fear, such as fear of death or that the ventilator would stop functioning. Their fear was based on concern that their life was dependent on the mechanical ventilator.

Inability to Endure:

Although all participants expressed that they could not bear being connected to the mechanical ventilator. They had no other alternative except being patient until disconnection, which implies they had to endure.

This finding mirrors other studies. According to Karlssona, Bergboma & Forsberg, (2012), the discomfort caused by the tracheal tube was very painful and beyond the patients' control. However patients simply had to endure. The researchers also found that endurance was not only related to connection to the mechanical ventilator, conscious patients also had to endure unpleasant encounters with staff who were disrespectful and distrustfull. Also the study of (Schou & Egerod, 2008) asserted that, despite various forms of discomfort, the patients found that mechanical ventilation was bearable.

Powerlessness:

It was dominant in many participants' expressions that they felt they were powerless in many situations during the period of connection to mechanical ventilator Powerlessness when experienced by patients during connection to mechanical ventilator was related to physical cause like pain and physical restriction by connections, or related to psychological causes like sense of helplessness and dependency, loss of control, impaired communication and knowledge deficit.

Jordan, Rooyen, Strumpher (2002), confirmed these findings in their study. They concluded that, the movement of patients on the ventilator is usually restricted by the various pieces of equipment such as the ventilator, tubes or lines essential for recovery. These restrictions made patients feel even more dependent on others, especially nurses to perform/meet their daily activities/requirements. Dependency was not only limited to physical activities, but also extended to all aspects of care. The nurse has the power to decide when the patient is bathed, when he/she receives meals/is fed, and when he/she is allowed to have visitors. Patients felt that they had

no say in the matter due to their dependence on the nurses to meet their basic needs.

Also in the study of (Schou & Egerod, 2008), the patients in their study experienced powerlessness. The reported many of the patients experienced loss of control and reduced self-confidence. Patients lacked the ability to orient themselves to time and place and felt helpless. They were not always sure what was going on. Another study supported the same results which is the study of Karlssona, Bergboma & Forsberg, (2012). They confirmed that, patients being unable to communicate their wishes resulted in feelings of powerlessness. They also agreed that lack of information about what was being planned and what was going to happen evoked a feeling of powerlessness, whilst not knowing what to expect as a sign of recovery or deterioration caused feelings of uncertainty.

In addition, a study of the people's experiences of being mechanically ventilated in an ICU by: Engstom, Nystrom, Sundelin , & Rattray (2013), the participants expressed powerlessness in different words , They felt their bodies were weak and in a way paralyzed. For example they lacked strength to hold anything with their arms and hands and this led to a feeling of being dependent on others and needing their help.

Knowledge Deficit:
Knowledge deficit is considered to be a significant issue that we must acknowledge in health care in Egypt, as though not scientifically documented, in clinical practice, the researcher has noticed a pattern of "not to tell " or notify patients before any health event among clinicians in Egyptian health care system .they afraid of making them worry which may affect their psychological status and consequently their progression in health status. Knowledge deficit was found to be related to all negative experiences faced by patients during mechanical ventilation.

In the study of Karlssona, Bergboma & Forsberg, (2012), findings suggested that ; Lack of information about what was being planned and what was going to happen evoked a feeling of powerlessness, whilst not knowing what to expect as a sign of recovery or deterioration caused feelings of uncertainty. Also a study by Hofhuis, et.at , (2008) the Experiences of critically ill patients in the ICU demonstrated that, When providing patients with information and an explanation, patients were more aware of what was going to happen so that they could focus on feeling more relaxed and better able to handle the stress.

Sense of Safe/ Unsafe During Connection To Mechanical Ventilator:
The sense of safety during connection to mechanical ventilation was described by the participants by the two extremes. Some of them felt they were reassured by the connection of mechanical ventilator. Others expressed that the mechanical ventilator was a terrible apparatus that their connection to it meant seriousness of their condition. These findings are similar to other studies. Karlssona, Bergboma & Forsberg, (2012) supported that; the patients experienced an overall sense of being breathless. They were aware that the mechanical ventilator was a life-saver. Also (Engstom, Nystrom, Sundelin , &Rattray , 2013), documented that, the patients in their study described how they had failed in several attempts to breathe by themselves and felt that they needed the ventilator to be able to breathe. They listened to the sound of the ventilator as they knew it was helping them to breathe.

Body Image Is Nothing:
It was surprising when the half of the participants revealed they did not care about their image during the period of connection. Even for the remainder who tried to describe their body image during connection to the mechanical ventilator, they ended their sentences stating, *"It wasn't an issue for me".* These findings contradicted a study by Arabi& Tavakol, (2009). In their study, some remarked that they had a change in their self-image. For example, one patient stated that his face had looked like a monkey. Participants in the current study may not have been concerned about their body image because most of patients during such critical period are mostly overwhelming by seriousness of their condition and their recovery.

Spirituality:
Spiritual aspect was significantly dominant in most participants' responses. This means most of participants gave up to God in all their affairs during the period of connection to mechanical ventilation. The relation with God or the spiritual relation with God has a very strong effect in alleviating such harsh experiences. It was clear that this spiritual relation with God helped the participants accept many discomforts and difficulties during the period of connection.

The patients in the current study demonstrated coping through spiritual aspect represented in continues

praying and thanking God which meant contentment and acceptance by the current situation. The spiritual aspect was a great issue for most of the participants along the period of connection which represented in continuous praying and thanking God whatever the event was, which means the participants had a strong fixed doctrine and faith in God.

This was related to the importance of the religion and spiritual aspect for the Egyptian people, they always mention the name of God in most of their expressions and they have the faith that everything is going and working by the will of God. Engoren & Scott (2003), 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".

10. Conclusion

This study was conducted in an attempt to explore the personal lived experiences of mechanically ventilated patients during recovery period after open-heart surgery. Participants in the present study described mechanical ventilation as terrible, uncomfortable more than painful, strange, unendurable and its connection means near death. The spiritual aspect was a great issue for most of participants during the period of connection ,which represented in continuous praying and praising God whatever the event was that means; the participants had a strong fixed doctrine and faith in God.

Based on the results of the study, it can be concluded that, the mechanically ventilated patients during recovery period after open heart surgery exposed to numerous personal negative experiences which have to be considered to improve nursing management of those patients during such period. These personal negative experiences have been categorized under two major themes: physical experiences like: feeling of breathlessness, mouth dryness, experience of pain and physical discomfort. And emotional experiences like: experience of shock, feeling of bothering, near death, inability to endure, powerlessness, knowledge deficit, sense of safe/unsafe, body image, and spirituality. And there is obvious interrelation and interaction among those major themes as well among its subsequent themes. The participants' identified personal experiences formed the basis for formulation of recommendation guidelines to improve nursing management of mechanically ventilated patient during recovery period after open heart surgery.

11. Recommendations

Based on the findings of this study, the following recommendations are suggested:

1- Provide the patients with comprehensive knowledge before surgery about what will be done along the whole perioprative period. And pay special attention to the recovery period in ICU including the comprehensive explanation of mechanical ventilator and associated treatments and procedures.
2- Improving patients' comfort: the promotion of patient comfort through focused nursing interventions as an integral component of nursing care in the ICU. This includes patient's positioning; hygiene interventions such as eye care, mouth care and washing; pain and sedation management.
3- Relieving the experience of thirst in patients on the ventilator. Nursing staff must be taught methods to alleviate the patient’s feelings of thirst while connected to the ventilator.
4- Improving method of securing the endotracheal tube: Endotracheal tubes should be secured in such a way that complications such as accidental extubation, tube displacement, ulceration of lips or mouth and facial skin trauma are prevented.
5- Continuous reassuring the patients during the period of connection to the mechanical ventilator by providing psychological support and continuous explanation of procedures and treatments during that period.
6- Try to involve the patients in self-care as allowed tolerated by patients and permit periods of rest to minimize sense of dependency and powerlessness.
7- Help the patients to demonstrate any religious practices as allowed according to their condition without judgment, as the spiritual aspect plays an important role in patients' sense of wellbeing which improve recovery.
8- Improving suctioning technique using evidence- based guidelines in order to assure effective procedure with minimal side effects of discomforts.
9- Conducting more similar qualitative studies which acknowledge the lived experiences for different patients categories in different health care settings in Egypt.

12. Acknowledgement: The researchers would like to express their sincere gratitude to all patients, for acceptance to participate in this study. As well, appreciation, and thanks go to the Faculty of Nursing – Cairo University and Cardiothoracic Surgeries Department at Al Manial University Hospital administration team as

well as the nursing and medical staff who helped in facilitating conduction of this study.

References

Arabi, A.& Tavakol, K. (2009),Patient's Experience of Mechanical Ventilation, JNMR/ spring, Vol. 14. No 2. 83- 88.

Aslant, F. E. , Badir, A., Aril, S. K. & Cakmakci, H. , (2010), Patents' Experience Of Pain After Cardiac Surgery, Contemporary Nurse, Vol. 34 (1), P.P. 48- 54.

Avenue, B. (2014), Health Topic, Open Heart Surgery, Cincinnati, Ohio 45229-3026.

Chatila,W.,M.& Criner,G., J., (2002), Complications of long-term mechanical ventilation, Respiratory Care Clinic , vol. 8, 631–647.

Coyer, F.M., Wheeler, M, K, Wetzig, S., & Couchman, B., (2007) Nursing care of the mechanically ventilated patient: What does the evidence say? : Part two. Intensive and Critical Care Nursing, 23(2), pp. 71-80.

Delbarrio,M. ,Lacunza , M. Armendariz , A. Margall, A. & Asiain, C. , November (2004), Liver Transplant Patients: Their Experience in The Intensive Care Unit. A Phenomenological Study, Journal of Clinical Nursing ,Vol. 13, Issue 8, Pages 967–976.

Engoren A.C., &Scott L.D.,(2003), The Lived Experience of Survivors of Prolonged Mechanical Ventilation: A Phenomenological Study. Hearth & Lung: The Journal of Acute & Critical Care; 32(5): 328-34.

Engstom,N., Nystrom,N., Sundelin,G.,& Rattray,J., (2013), People's experiences of being mechanically ventilated in an ICU: A qualitative study, Intensive and Critical Care Nursing (2013) 29, 88—95.

Foster, A. (2010), More than nothing: The lived experience of tracheostomy while acutely ill. Intensive Crit Care Nurs , 26(1):33-43.

Gallimore,D., (May, 2007), Caring For Patients After Mechanical Ventilation - Part 1: Physical And Psychological Effects, Nursing Times, VOL: 103, ISSUE: 11, PAGE NO: 28.

Giorgi, A. (1997). The theory, practice, and evaluation of the phenomenological method as a qualitative research procedure. Journal of Phenomenological Psychology, 28(2), 235-260.

Heisler,J. ,(2014), about .com After Open Heart Bypass Surgery-Recovering From Open Heart Surgery Recovery After Open Heart Bypass Surgery at, At http://www.openanesthesia.org/Modes_of_Mechanical_Ventilation

Hofhuis JGM, Spronk PE, Van Stel HF, Schrijvers AJP, Rommes JH, Bakker J. , (2008), Experiences of critically ill patients in the ICU. Intensive Crit Care Nurs.;24: 300- 313.

Hoit JD, Banzett RB, Brown R. Ventilator-supported speech. In: Tobin MJ, editor. Principles and Practice of Mechanical Ventilation. New York: McGraw Hill, Inc; 2008. pp. 1163–1172.

Jordan, P. ,Rooyen, D.,& Strumpher, J. (2002)The lived experience of patients on mechanical ventilation, Resource Library, Health SA Gesondheid / Dec, at:http://findarticles.com/p/articles/mi_6820/is_4_7/ai_n28132981/.

Karlsson,V.,(2012), Traumatic to Be Conscious during Ventilator Treatment, Ventilator-Assisted Living , February 2012 , Vol. 26, No. 1.

Karlsson,V., Bergboma ,I., & Forsberg, A., (2012)The Lived Experiences Of Adult Intensive Care Patients Who Were Conscious During Mechanical Ventilation: A Phenomenological-Hermeneutic Study, Intensive and Critical Care Nursing, Vol. 28, Issue (1), February 2012, Pages 6–15.

Khalaila,R., Zbidat, W., Anwar, K. Bayya,A., Linton, D., M., and Sviri , S. (November 2011), Communication Difficulties and Psychoemotional Distress in Patients Receiving Mechanical Ventilation, AMERICAN JOURNAL OF CRITICAL CARE, Volume 20, No. 6, American Association of Critical-Care Nurses, Published online http://www.ajcconline.org.

Khazali, K., Shamse, M., (2006), Evaluation of Stress Factors in ICU and CCU Patients with Emphasis upon Their Religious Beliefs. Iranian Heart Journal.; 7(3): 25-37.

Kim H, Garvin BJ, Moser DK. Stress during mechanical ventilation: benefit of having concrete objective information before cardiac surgery. American Journal of Critical Care 1999; 8(2): 118-26; in Arabi & tavakol, Patient's Experience of Mechanical Ventilation, JNMR/ spring, (2009), Vol. 14. No 2. 83- 88.

Landstrom,M., Rehn,I M. &Frisman, G. H.(2009), Perceptions of registered and enrolled nurses on thirst in mechanically ventilated adult patients in intensive care units——A phenomenographic study, Intensive and Critical Care Nursing (2009) 25, 133—139.

Lof L., Berggren L., Ahlstrom G. , (2006), Severely ill ICU patients recall of factual events and unreal experiences of hospital admission and ICU stay-3 and 12 months after discharge. Intensive & Critical Care Nursing, 22:154—66.

Loris,T., (2003), Clinical Management Of Stressors Perceived By Patients On Mechanical Ventilator, AACN, Clin. Issues, Feb; 14 (1): 73-81.

Mittnacht A. J. , Thanjan M., Srivastava S., Joashi U., Bodian C., Hossain S., Kin N., Hollinger I., Nguyen K., (2008), Extubation In The Operating Room After Congenital Heart Surgery In Children In The Journal

of Thoracic And Cardiovascular Surgery July 2008.

Ozsancak, A. ,Ambrosio, C. Garpestad, E. Schumaker G. ,Nicholas S., (2008), Sleep and Mechanical Ventilation, critical care clinic, vol.24 (3), p. p. 517- 531.

Puntillo,K., Nelson, J. E., Weissman, D.,Curtis, R., Weiss, S., Frontera, J.,Gabriel, M., Hays, R., Lustbader, D., Mosenthal, A., Mulkerin,C., Ray, D., Bassett, R., Boss, R. , Brasel, K.& Campbell, M. , (2013), Palliative care in the ICU: relief of pain, dyspnea, and thirst—A report from the IPAL-ICU Advisory Board, Intensive Care Med, , DOI 10.1007/s00134-013-3153-z.

Rattray, J., Johnston ,M., Wildsmith, J.A., (2004), The Intensive Care Experience: Development of the ICE Questionnaires. Journal of Advance Nursing. May; 47(1): 675-678.

Roberts, B., Rickard, C.M., Rajbhandari D, Turner G, Clarke J, Hill D, (2005), Multicentre study of delirium in ICU patients using a simple screening tool. Aust Crit Care;18(1):6—16.

Samuelson, K.A., Lundberg, D., &Fridlund, B., (2007), Stressful memories and psychological distress in adult mechanically ventilated intensive care patients—a 2-month follow-up study. Acta Anaesthesiol Scand.; 51:671-678.

Samuelson, K.A.,(2011), Unpleasant and pleasant memories of intensive care in adult mechanically ventilated patients——Findings from 250 interviews, Intensive and Critical Care Nursing , 27, 76—84.

Schou, L.& Egerod, I.,(2008), A Qualitative Study Into The Lived Experience Of Post-CABG Patients During Mechanical Ventilator Weaning, Intensive and Critical Care Nursing, 24, 171—179.

Smeltzer, S.,C., Bare, B.,G. Hinkle, J.,L. & Cheever, K.,H. (2010), Brunner &Suddarth's Text Book Of Medical Surgical Nursing, 11th. Ed., Wolters Kluwer Health, Lippincott, Williams& wilkins , p.629.

Streubert, H.J., & Carpenter, D. R. (2007). Qualitative research in nursing." Advancing the humanistic imperative, 4th. ed., New York: Lippincott, Williams, and Wilkins.

Tembo ,A. C., Parker,V. & Higgins I. , (2013), The experience of sleep deprivation in intensive care patients: Findings from a larger hermeneutic phenomenological study, Intensive and Critical Care Nursing (2013) 29, 310—316

Walsh,R., Fang,J., Fuster , V. & O'Rourke, R., (2012), Hurst's the Heart, 13th. Ed., Chapter 66. Management of the Patient after Cardiac Surgery, The McGraw-Hill Companies.

Wang, K., Zhang, B., Li, C., Wang, C.,(2009), Qualitative analysis of patients' intensive care experience during mechanical ventilation. Journal of Clinical Nursing. January January;18(2):183-193.

Wenham,T.& Pittard,A. , (2014), Intensive care unit environment, Oxford Journals Medicine BJA: CEACCP, Volume 9,Issue 6 , Pp. 178-183.