



**PERCEPTION OF FATIGUE IN CHRONICALLY ILL PATIENTS
UNDERGOING WEANING FROM MECHANICAL VENTILATION**

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อธิปัทนการ

จาก

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KEY WORDS : PERCEPTION / FATIGUE / WEANING

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This study was a descriptive, retrospective design in order to investigate the perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation. The purposive samplings consists of 10 patients who were successful in weaning from mechanical ventilation, maintained consciousness, and perceived fatigue at Audsadang building floor 6, 9-12, medical wards, Siriraj Hospital. The study was conducted from February to March 2001. Data were collected by tape recording, and interviewing. The subjects are about 3 parts: Personal data, weaning from mechanical ventilation data and perception of fatigue undergoing weaning from mechanical ventilation. Personal data and weaning from mechanical ventilation data were analyzed by frequency. Perceptions of fatigue undergoing weaning from mechanical ventilation were analyzed by frequency and content analysis.

The results of this study could be categorized into 3 parts as follows: perception of fatigue in chronically ill patients, perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation, and the difference of perception of fatigue between chronically ill patients and chronically ill patients undergoing weaning from mechanical ventilation. The majority of patients were more than 60 years old who had COPD(Chronic obstructive pulmonary disease) and others diseases. These patients had the disease between 1 to 10 years, and the duration of using mechanical ventilation was 1 to 3 days. They were weaned from the ventilator by using T-piece and Partial support ventilation, and used CMV(Control mandatory ventilation) more than 72 hours.All of them were not informed about the process of weaning. The perception of fatigue in chronically ill patients was found: five patients had weakness, four patients had tiredness, 3 patients had dyspnea and 3 had exhaustion, muscle pain were afflicted 2 patients. The perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation was found: Nine patients had tiredness and six patients had weakness. Two patients had tachypnea and 2 had muscle pain. Stress and anxiety were experienced by one patient each. The perception in different symptoms of fatigue between chronic illness and undergoing weaning mechanical ventilation was found : six clinically ill patients were too tired to work and six patients who undergoing weaning from mechanical ventilation felt tired.

This study suggest that nurses should be careful for nursing activities not to make the patients too tired and should be aware of information about techniques to describe the weaning process from ventilator. And nurses should stay with patients while starting weaning especially in first 30 minutes to make them feel safe and confident.

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ดร.ณิ อินทจักร : การรับรู้อาการอ่อนล้าของผู้ป่วยเรื้อรังในการหย่าเครื่องช่วยหายใจ

(PERCEPTION OF FATIGUE IN CHRONICALLY ILL PATIENTS UNDERGOING WEANING FROM MECHANICAL VENTILATION) คณะกรรมการควบคุมสารนิพนธ์ : ทรงไฉ อุณหสุต, กศ.ด. (การอุดมศึกษา), สายพิณ เกษมกิจวัฒนา, พย.ด., 83 หน้า, ISBN 974-04-0115-5

การศึกษาครั้งนี้เป็นการศึกษาเชิงบรรยายโดยมีวัตถุประสงค์เพื่อศึกษาการรับรู้อาการอ่อนล้าของผู้ป่วยเรื้อรังขณะหย่าเครื่องช่วยหายใจ โดยการศึกษาชั้นหลัง กลุ่มตัวอย่างเป็นผู้ป่วยหย่าเครื่องช่วยหายใจสำเร็จ รู้สึกตัวดีและรับรู้อาการอ่อนล้าจำนวน 10 คน ซึ่งเข้ารับการรักษาที่ตึกอัยญาติ 6, 9-12 แผนกอายุรศาสตร์ โรงพยาบาลศิริราช ระหว่างเดือน กุมภาพันธ์ ถึง มีนาคม 2001 เก็บรวบรวมข้อมูลเชิงคุณภาพโดยการสัมภาษณ์และบันทึกทบทวนประวัติสัมภาษณ์ โดยสัมภาษณ์เกี่ยวกับข้อมูลส่วนบุคคล ข้อมูลเกี่ยวกับการหย่าเครื่องช่วยหายใจและการรับรู้อาการอ่อนล้าขณะหย่าเครื่องช่วยหายใจ วิเคราะห์ข้อมูลด้วยการแจกแจงความถี่ ข้อมูลเกี่ยวกับการใช้เครื่องช่วยหายใจ และการรับรู้อาการอ่อนล้าของผู้ป่วยเรื้อรังขณะหย่าเครื่องช่วยหายใจ วิเคราะห์ข้อมูลด้วยการวิเคราะห์เนื้อหา (Content analysis)

ผลการศึกษาพบว่า การรับรู้อาการอ่อนล้าของผู้ป่วยเรื้อรังขณะหย่าเครื่องช่วยหายใจ ประกอบด้วย การรับรู้อาการอ่อนล้าของการเป็นโรคเรื้อรัง การรับรู้อาการอ่อนล้าของผู้ป่วยเรื้อรังขณะหย่าเครื่องช่วยหายใจ การรับรู้ความแตกต่างอาการอ่อนล้าของผู้ป่วยเรื้อรังและผู้ป่วยเรื้อรังขณะหย่าเครื่องช่วยหายใจ ผู้ป่วยส่วนใหญ่มีอายุมากกว่า 60 ปี เป็นโรค COPD(Chronic obstructive pulmonary disease) และโรคอื่นร่วม รับรู้ว่าเป็นโรคนาน 1-10 ปี ให้เครื่องช่วยหายใจ 1-3 วัน และหย่าเครื่องช่วยหายใจด้วยวิธี T-Piece และ Partial support และใช้ CMV นานมากกว่า 72 ชั่วโมง และผู้ป่วยทั้งหมดไม่ได้รับทราบข้อมูลเกี่ยวกับวิธีการหย่าเครื่องช่วยหายใจมาก่อนการรับรู้อาการอ่อนล้าของเจ็บป่วยเรื้อรัง รับรู้อาการอ่อนล้าครั้งนี้คือ อ่อนเพลีย (5 คน) เหนื่อย (4 คน) เหนื่อยหอบ (4 คน) หดแรง (3 คน) ปวดเมื่อยกล้ามเนื้อ (2 คน) การรับรู้อาการอ่อนล้าของผู้ป่วยเรื้อรังขณะหย่าเครื่องช่วยหายใจ รับรู้อาการอ่อนล้าครั้งนี้ คือ เหนื่อย (9 คน) อ่อนเพลีย (5 คน) นอนไม่หลับ (3 คน) ปวดเมื่อยกล้ามเนื้อ (2 คน) หายใจเร็ว (3 คน) เครียด (1 คน) และกังวล (1 คน) และการรับรู้ความแตกต่างอาการอ่อนล้าขณะการเจ็บป่วยเรื้อรังและขณะหย่าเครื่องช่วยหายใจ พบว่าผู้ป่วยเรื้อรัง 6 คน มีอาการเหนื่อยจนไม่สามารถทำงานได้ ส่วนในผู้ป่วยเรื้อรังขณะหย่าเครื่องช่วยหายใจมีอาการเหนื่อย 6 คน

จากการศึกษามีข้อเสนอแนะว่า การให้การพยาบาลควรระวังไม่ไปกระตุ้นให้ผู้ป่วยเหนื่อยจนเกินไป และควรให้ผู้ป่วยได้พักผ่อนอย่างเหมาะสม พยาบาลควรอยู่ใกล้ชิดกับคนไข้เมื่อเริ่มหย่าเครื่องช่วยหายใจ โดยเฉพาะใน 30 นาทีแรก เพื่อให้ผู้ป่วยรู้สึกปลอดภัยและมั่นใจ และควรตระหนักถึงวิธีให้ข้อมูลในหย่าเครื่องช่วยหายใจ เพื่อป้องกันไม่ให้เกิดอาการอ่อนล้าจากอาการเหนื่อยและความวิตกกังวลที่อาจเกิดขึ้น

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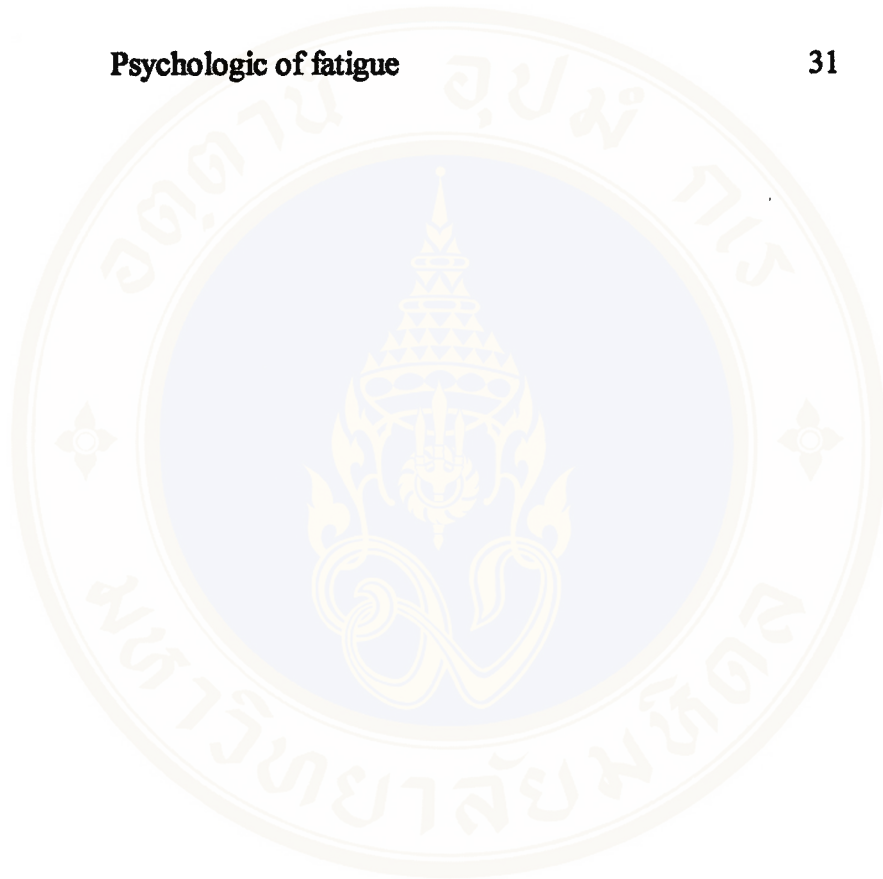
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CHAPTER I

INTRODUCTION

Background and significance of the study

Chronically ill patients, who were treated by mechanical ventilation, usually took a long time in weaning from mechanical ventilation and might not succeed in weaning (Higgins, 1998:177) as the result of effects by both physical and psychological. From the study of Shelledy (Shelledy,1999: 975), it was found that 47% of chronically ill patients who were in mechanical ventilation more than 5 days would have psychological problem. Moreover, they were usually neglected because during intubation, the communication was quite difficult and painful. These caused anxiety (Logan and Jenny, 1997) and frustration among patients (Wunderlich et al.,1999) Therefore, weaning from mechanical ventilation should use various techniques (Burns, 1999).

When chronically ill patients were in the mechanical ventilation, the respiratory muscles were not used. Mechanical ventilation would take role of respiratory muscles (Vassilakopoulos, Roussos and Zankynthinos, 1999:47). It caused weakness of these muscles (Keitboonsri, S.,1992: 233; Macintyre, 1989:121-125 cited by Pinyopornpanich, 1998:99). It was found that if mechanical ventilation had been used for 72-96 hours and wanted to do the weaning. The patients would have more weakness of respiratory muscles because of the ineffectiveness use of respiratory muscles, inadequate sleep-rest, under

nutrition and also form stress. These caused no strength in breathing and unable to control their respiration (Higgins, 1998). From the study Shelledy (Shelledy, 1999:974), it was found that beside stress from using mechanical ventilation, suction of secretion, pain due to intubation, sleep disturbance, having I.V fluid, anemia due to disease or from gastrointestinal bleeding and inadequate nutrition and electrolyte. It also caused fatigue in patients because they were substantial weakening the working of the muscles. (Chaturapanich, K.,1999) As a result, it led to the difficulty weaning. Their signs were tachypnea, dyspnea, exhaustion and depletion which could be observed from signs and symptoms of ineffectiveness weaning such as respiratory rate more than 35 time per minutes, increased blood pressure more than 20 percents, or increased systolic over 180 mmHg(millimetre mercury), and increased heart rate more than 20 percents, oxygen saturation less than 90 percents or partial pressure of arterial oxygen (PaO_2) less than 60 mmHg(millimetre mercury) and increased partial pressure of arterial carbondioxide (PaCO_2) more than 5 mmHg(millimetre mercury), or pH less than 7.3 and arrhythmias occurred, diaphoresis and muscle weakness. It also found that the thoracic cage and abdominal wall would expand in the opposite direction. The abdominal wall would protrude when inhaled. Fatigue would be physical symptom along with psychological symptom and would be different among individuals (Evengard, Schaclerle and Komaroff, 1999).

Fatigue is the complex symptom, which can be found in both physiological and psychological, from the situation or environment (Kellum, 1985:103). It decreases physical function and the patients will feel tired or even exhaustion depends on

individuals. In physiologically, fatigue will effect the weaning from mechanical mechanical ventilation, which causes decreasing of tidal volume, hypercapnia, rapidly shallow breathing finally. When patients breath by themselves, they will breath from a weak inspiratory muscle until they exhausted. (Yan et al., 1993:1371). When the precipitating causes of using mechanical ventilation, are treated and the patients are improved, considering weaning from mechanical ventilation as soon as possible must be done. Because of using mechanical ventilation can cause various complications such as infection, barotrauma, tracheal injury and oxygen toxicity (Vassilakopoulos, Roussos and Zakynthinos, 1999:39).

From the study of Piboonratanakul (Piboonratanakul , N.,2000: 37), it was found that there were 34.48% of patients who had anxiety assessment before weaning from the mechanical ventilation. These would occur only when patients had hyperventilation and restlessness. In assessment there were worried about breathing and death during weaning from the mechanical ventilation but nurses have never asked them about their anxiety in weaning. In 34.48% had intervention to decrease the anxiety by telling the patients that they must breath by themselves without explaining the goal and the process of weaning. 31.03% the nurses would teach the patients to have confident in breathing by themselves when their vital signs and clinical signs improved and stable but nurses did not stay with the patients from the beginning of the weaning. 27.59% of the patients who had difficulty in weaning would have respiratory stimulation and explained the outcome of their own breathing and had respiratory stimulation for sometimes. From the study of Wunderlich, et al.,(Wunderlich, et al.,1999) it was found that giving information while weaning from

mechanical ventilation should be continuous and repeated because receiving information only once, the patients would not be able to remember and practice. From previous study, it was shown that the physical symptoms occurred physically during weaning might be affected from psychological problems. When weaning from the mechanical ventilation, patients were intubated and they could not talk or communicate. Nurses who cared for could only guess of what the patients want and responded to that which might not be appropriate with the patients' needs. (Cushman & Dijkers, 1990 cited in Essen & Sjoden, 1991:1363; Essen & Sjoden 1991; Heikkila, et al., 1998). Anxiety, fear, and stress cause patients not to be able to concentrate in perceiving surrounding environments, leading to fatigue because of emotion and feeling that affected the weakness of respiratory muscles (Chaturapanich, K., 1999:138) collected from the patient because it was the feeling and perceiving of individual (Ream and Richardson, 1996). This was consistent with various studies which found that patients and nurses' perception usually not congruent. (Cushman & Dijkers, 1990 cited in Essen & Sjoden, 1991:1363; Essen & Sjoden 1991; Heikkila, et al., 1998).

Perception is human thinking and mental process. It is different among people even it is in similar situation. Perception process will work to collect and interpret from various external data. Sensory and memory (King, 1981) are the perception in each person which are different (Ream and Richardson, 1996). The importance of perception in chronically ill patients toward fatigue undergoing weaning will affect the patients' signs and affect the weaning from the mechanical ventilation. It was found that it might prolong the weaning time. Fatigue is one of the symptoms that affect patients

during weaning. From the study of Higgins (Higgins ,1998:182), it was found that chronically ill patients who succeeded in weaning and used short time could assess fatigue and accepted that sign positively. Meanwhile the patients who failed in weaning did not accept fatigue. From the study of Higgins (Higgins ,1998) interviewed about the perception of fatigue during weaning in 20 patients who were in mechanical ventilation more than 7 days, no crisis within 24 hours, the factors and causes led to use of mechanical ventilation have been treated, and there are no neurological problems that disrupt that weaning. It was found that after using visual analog scale, the fatigue level was 5.94 (Range 0-10). In the aspect of nutrition it was found that there were no relationship with fatigue, from the blood albumin level which substitute the adequacy of nutrition (protein) in the body and hemoglobin level, even during interview. The both blood tests were lower than normal (albumin = 2.7, hemoglobin = 10.1) which indicated that fatigue was concerning from emotion and psychological. It effected the body by producing large amount of lactic and hydrogen ion. It also effected the muscle especially the weakness of respiratory muscles (Chaturapanich, K.,1999:138) until the tidal volume decreased. It also caused hypoxia, hypercapnia and acidosis. The patients must breath faster and shallower (rapid shallow breathing), tachypnea, dyspnea and finally air hunger and might caused respiratory and cardiac arrest. Nurses can assess patients' fatigue such as exhaustion, weary, sleep disturbance or inadequate rest due to pathological condition or from weaning. During weaning patients will not be able to tell or explain. Nurses and patients perceptions must be congruent with each other, and this will influence their interaction. If the patient and nurse can set the objectives together (King, 1981). Patients

are ready to wean and will succeed in weaning faster. The length of stay in the hospital will be shorter and minimize cost. Therefore, the investigator would like to study the perception of fatigue of chronically ill patients during weaning from the mechanical ventilation. The result of this study can be used for the development of nursing care of chronically ill patients who are weaning from the mechanical mechanical ventilation.

Statement of the problem

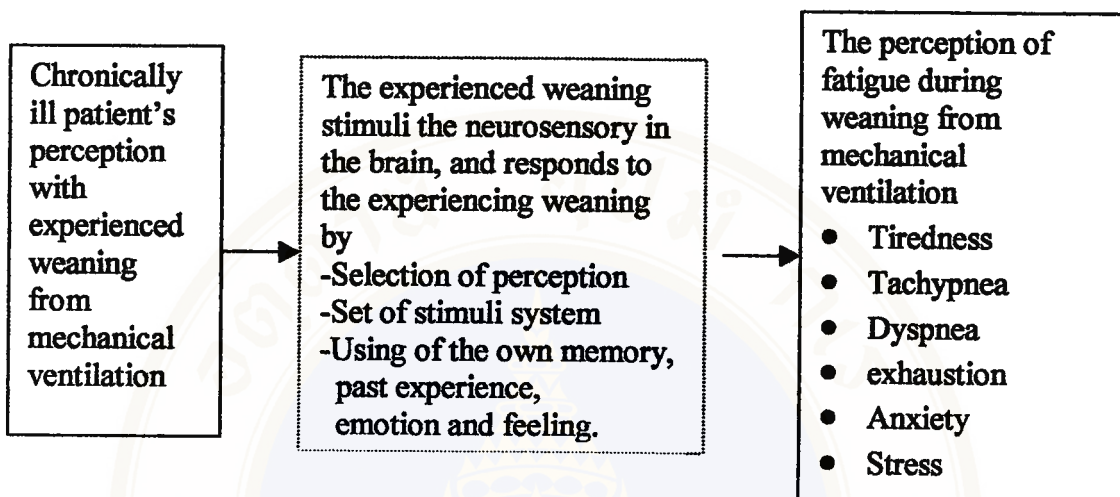
What is the perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation?

Purpose of the study

To study the perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation.

Conceptual frame work

In this study, The perception in the weaning from mechanical ventilation is the stimuli that enter into the nuerosensory of the brain. Then the brain will select of perception, set of stimuli system by using own memory, past experience, emotion, and feeling to interpret them to be the perception of fatigue during weaning such as tiredness, tachypnea, dyspnea, exhaustion, anxiety, and stress. The frame of interview was constructed by the investigator after reviewing of related literatures and the study as follows.



Scope of the study

This study is the study of the perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation who succeed in weaning in Medical Department, Siriraj Hospital.

Expected outcomes and benefits

To use as guideline to develop a holistic care for chronically ill patients during weaning from mechanical ventilation.

Definition of variables

The perception of fatigue during weaning from mechanical ventilation are the perception of feeling during weaning from the mechanical ventilation which are tiredness, tachypnea, dyspnea, depletion, sleeplessness. These feelings are the feelings that have been told by individuals and can not be able to examine. This study using the fatigue interview form chronically ill patients which the investigator had construct.

CHAPTER II

LITERATURE REVIEW

The studies of the perception of fatigue during weaning from mechanical ventilation of chronically ill patients are as follows:

1. The perception of fatigue in chronically ill patients.
 - Chronically ill patients
 - Fatigue
 - Fatigue of chronically ill patients
 - Perception
 - The perception of fatigue in chronically ill patients
2. The perception of fatigue in chronically ill patients during using mechanical ventilation.
3. The perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation.

The perception of fatigue in chronically ill patients

Chronically ill patients

The chronic illness has different characters from acute illness. Acute illness has termination time of illness or improve in a limited time. It may end with death in a rapid time or fully recover, but the chronic illness is the changing of

physical rapidly or insidious, the prognosis of the pathology is not clear, medical treatment or operation in the present time can only delay the symptom or the intensity of the disease. The patients will lose their homeostasis of physical and mental function (Miller, 2000: 4).

The Commission on Chronic Disease (Robert, 1955 cited in Eliopoulos. 1999: 17) gave the definition of chronic illness that it is the lost of function or deviate from normal situation which had either character or another. In this character, it is permanent, left with disability, the pathology that occurs can not fully recover. And there must be special training for rehabilitation. Advice and care from health personnel are needed for a long period of time. It is the physical illness that occurs more than 3 months in a year, or admitted in the hospital continuously for more than one month. These illnesses sometimes become serious until finally death. From the National Conference on Care of the Long Term Patient (Robert, 1955 cited in Eliopoulos, 1999:17) state that chronic illness can change the normal life of the patient. It effects the function of human physically and mentally or the symptoms will get worse and death finally occurs, or the patients can live longer but have abnormal physical and mental. Some chronic illness may have exacerbation at interval (Soo-Ampan, A. and Sornmanee, V. cited in Paungchan, S., 1995:12). The symptom may deteriorate and remission, which advice and care are needed for a long time. It is obviously seen that chronically ill patient who has effect on movement. Moving from place to place can be difficult and is a major problem for chronically ill patient. The normal life is disturbed (Miller, 2000 : 196), such as bathing, eating, running, walking, the movement is limited and they are not able to help themselves. It effects

pathological, social, economical and well being, role, and response which not able to practice inadequately.

It can be stated that chronically ill patients are the person who deprived or having deviated situation from normal , which are one or multiple characters as follows (Mayo cited in Hanu-Chareonkul, S .,1996:134);

1. Has permanent change.
2. Has disability .
3. Has irreversible pathology.
4. Need special rehabilitation.
5. Need long term care, help, advice, observation, and follow up.

Therefore, in order to help the chronically ill patients, there should be symptom assessment, such as strength, energy, pain, tiredness, fatigue. (Miller, 2000) in order to help and solve these problems which related to the movement in chronically ill patient. (Eliopoulos, 1999:199; Miller, 2000:199). It shows that the symptoms effect activities and exercise in chronic illness, such as AIDS, Alzheimer's disease, arthritis, Asthma, Cancer, Cirrhosis, COPD, Chronic renal failure, Congestive heart failure, Coronary artery disease, Depression, Diabetes mellitus, Hypertension, Multiple sclerosis and Parkinson disease usually found in fatigue.

Fatigue

Fatigue is the symptom that occurs in everyone in a period of life time, such as at the end of a chaos day, after tiredness, from illness or from lost or stress (Kellum, 1985: 103). Fatigue is also a human experience even many people reported

their chronic fatigue which comes on and off. Fatigue still have different symptoms and it is not simple (Evengard, Schacterle, and Komaroff, 1999: 456).

The definition of fatigue is the perception of fatigue, decrease of energy , lost of strength, depletion, unable to work or perform activities (Kellum, 1985: 103) The depletion symptom depends on experience and situation of each person. And the decrease of physical and mental competencies do not subside by resting (North American Diagnosis Association ; Carpenito, 1995:379) and it is still in one's mind (subjectivity). It is the symptom of disappointment related to the total body tiredness and unable to relax which interfere the normal working ability (Ream and Richardson, 1997: 45).

Types of fatigue

Types of fatigue had two patterns(Piper et al., 1987)

1. Acute fatigue occurs in healthy person. It causes from single cause. It happens rapidly and in a short period occasionally and the symptom can disappear, if the person has enough sleep or has adequate nutrition, stress management. It also has little effect on daily living activities and quality of life.

2. Chronic fatigue is the serious symptom in the patients and can interfere daily activities and quality of life. The cause is unknown and do not related to activities or tiredness. The symptom occurs all the time for months. The duration is uncertain. It can be fast or slow.

Fatigue of chronically ill patients

It is obvious that fatigue occurs when people are ill. The patient will recognize the symptom from illness. Fatigue will be different among various diseases,

from therapy, environment and from different socio-economic class. Fatigue that related to illness can be seen in asthmatic patient. Fatigue will occur, when patients are tiring. the patient will feel tight and heavy. But COPD patient, fatigue will occur all the time. In addition, fatigue often occur in the evening after normal activities (Small and Lamb; 1999 :472).

The difference between those who had symptom of fatigue at different tiring level and those who came for treatment. Female patients who came to see the doctor with fatigue symptom had quite good socio-economic. But in the United State of America, it was found that patients from low socio-economic class would have more chronic fatigue. In Latino population and African-American (Evengard, Schacterle, Komaroff, 1999:457) and from Center for Disease Control and Prevention (CDC) (Walker, 1999: 73) the researchers found that 98 percent of chronic fatigue patients were coucasian; 85 percent were women, and 80 percent had advanced education, one-third were from high income family those were only the patients who came for under physician treatment. What happen both physically and mentally in each person are neglected from both personnel and the patient. Because group of fatigue symptoms data was told by the patients and could not found in the laboratory (Piper, 1989 cited in Higgins 1998: 178) and it was an important problem in chronically ill patients which caused physical and psychological weakness. In the aspect of psychology, it was found that 75 percent of patients who had chronic fatigue were caused from anxiety and 10 percent were caused from depression, the remainder caused by other causes (Sangchan, A .1999:333). And can cause the feeling of powerlessness, there will be no one to depend on. The more chronic ill the more symptom occurs. The

feeling of caring for themselves and self reliant will decrease, the strength in doing various activities will decrease until the patients can not live a normal life.

Perception

Perception is the expression of knowledge, understanding which may be the specific thought, concept or impression. It is the expression that the ability of the brain can interpret the meaning or understanding about various objects. The perception is also the fundamental of learning. (Mosby's Dictionary, 1994:1188) it is the process of thought and human mental that shows the knowledge, understanding, awareness of various topics across the neurosensory. Perception is the unique character of individual and occurs within each person. The perception will have the meaning toward experience. It is the substitute of truth and has influence on that person behavior (King, 1981). It is the interpretation of the sensation and become something which have meaning. The interpretation depends on experience and learning. Without learning or experience there will be no perception, it has only sensory. Perception is the selection in a specific time. We do not perceive everything, but we choose to perceive only some stimuli (Trapmee, W .1990) and Chanaem, S. (Chanaem, S.,1997) has stated that perception was the process which had simple to complex level that difficult to understand. Perception is the interpretation from sensation. In that perception, we are not only see, hear, or smell, but we also perceive " what is that object?", "what is it character?", "in which direction ?", or " how far from us?" etc. We give the meaning into objects that come across over sensation that lie between stimuli and response. Perception is the process that happens in between stimulus and response as illustrated in figure 1.



Figure 1. Process of perception

From the meaning of perception, it can be concluded that perception is the process of thought and human mental that shows their thinking, understanding, awareness of stimulus that come across any neurosensation or all which the brain interpretation using memory, past experience, emotion, own feeling as the interpreting tools.

Perception Process

There are 3 stages of perception process which are :- (Petchsooksri ,P., 1988:25; Nopket ,R .,1993:1; Waranusuntikul, S .,1981: 59-56; Bunting, 1988: 170)

1. Selection is the process of choosing in order to perceive some stimulus among various stimuli.

2. Organized people will organize stimuli into 2 types :

2.1 Figure and ground are the process that people divide stimulus by concentrate to that part specially. We call figure and the other part that we are not interesting as ground.

2.2 Simplification is the organization of the data from stimuli as the trend of the normal people which arrange that stimulus into a more simple thing and remove the complex and confuse part away.

3. Interpretation or making sense of and understanding experience is the last process of perception process. It is the process that person make their understanding or interpret that stimulus. Therefore, the interpretation depends on

subjective of the person who have that stimulus, and different people may make different interpretation toward same stimulus.

Factors affect perception

There are 2 factors affect perception which are:

1. Character of the perceiver

1.1 Gender : Because gender shows the different of biological status of people. It has effect toward behavior and intelligent and the perception of people. There is a trend that male has higher learning ability than female. Because brain structure has effected the thinking and intelligent. Male has more social role and opportunity to study than female (Schaffer, 1981). Overmore, gender is factor that effects coping, adaptation and attitude which effect the perception of people. Related to the different of perception toward rehabilitation of chronically ill patient. It was found that most male will not interact with female physician, because they will feel uneasy for having female physician or nurses to care for them. And they believe that female are less competence than male.

1.2. Age : Age has effect toward perception because age has effect toward development and past experience. The older will have more maturation and have more experience than those who are younger. Age effect the different of behavior which occur from perception , view of problem, understanding. reasoning, and decision to bahave of individual.

1.3 Educational level : Educational will develop intelligent, thought, knowledge, understanding and effect thinking ability and reasonable data analysis, and understand the environment or other person reaction correctly and appropriate (Vaitayasaeevee, W., 1983). And education will help people to understand

various things, situation, events, that they perceive rapidly. People who have higher education will be better than others in perception. And can learn better than those with lower education. Because they have opportunity to find useful thing, way of thinking, analyzing. Behavior also effect perception and help in intelligent development in order to select what beneficial for them.

1.4. Previous experience : If previous experience is good, it will help people to perceive that situation unaggressively. In the other way, if they have bad experience, that person will perceive that experience worse than it could be. (Hanucharoenkul, S.,1996)

1.5. Social and culture influence : The social interaction and culture influence feeling, understanding, thinking about health. In each culture the health concept is different. (Koizer and Erb, 1989: 75-76)

2.Character of Stimulus

The character of stimulus that induce good perception has something related,which are intensity and size. That stimulus are contrast from the other, it has incitation and movement. From that meaning, process and factors effect perception we can conclude the important of perception as follows:(Pancharoenworakul ,K., 1985: 377-78)

2.1 Perception is universal, all human have perception of environment from birth to death. All human being have the same perception organs, even for perceive of single thing.

2.2 Perception is what people select and subjective, even in the same situation. But we can not conclude that the people will perceive that situation in the same way. Because people have different background and experiences.

2.3 Perception is the action oriented in the present, because there is data in the environment at all time which make perception occur in what had happened and the learning occur together all the time too.

2.4 Perception is transaction which have specific goal. We can observe the perception which is the specific character of people only when that people behave. So we can clearly see how that person perceive in that situation.

The conceptual framework of perception can be concluded that : Perception is the thought and mental process within individual, it happens all the time when people interact with the environment. The brain will interpret the stimulus or situation from the receiving data across the five neuroreceptors which are sight, hearing, touching, tasting, and smelling which make perception different from each other depends on gender (sex), education, experience, culture, and stimulus. People will show their perception by responding to that stimuli by acting or thinking.

The perception of fatigue in chronically ill patients

The fatigue symptoms sometime can be found in the patients. Though the dynamic of fatigue is unknown (Piper, 1991 :894). From the study of Schaefer and Shober Potylyeki(1993: 266) 71 percents of patients found to have fatigue. From this amount. After the treatment 24 percents still have fatigue another 76 percent found that the fatigue had decreased (Levine, 1973 cited in Schaefer and Shober Potylyeki, 1993 : 266). Levine and Shober has report that the past activity will have an effect in the future the person who did not have much activity in the past may not feel fatigue.

The perception of fatigue has related to illness, treatment, environment, especially in intensive care unit, or in the ordinary patients' unit that sleep rest were

interfered at all the time. It can be explained about the energy deficit which causes fatigue and tiredness in patients. (Gipson, 1991 cited in Higgins 1998: 178)

Fatigue is the physical and psychological symptom. (Kellum 1985: 103; Ream and Richardson 1997: 44) which the perception depends on previous experiences (Ream and Richardson 1996) fatigue are not different between age and sex (Lyne, Denphy, 1998: 66). From the study of Schaefer and Shober Potlyeki (1993: 266) they suggested that fatigue might be a problem in elderly and chronically ill patients. There were reports from hospital or all special training institutes that patients had chronic fatigue. The ratio of female are higher than male, 70 percents are female. It can explain that 60 percents of female patients come to see the doctor. And various diseases cause fatigue. It can be found in disease effect female. So the numbers of fatigue in female are much more, such as Multiple sclerosis, Systemic Lupus erythematosus (Evengard, Schacterle and Komaroff, 1999: 457). From the study of Small and Lamb (1999:477) there was no evidence which showed that age would have influence toward fatigue.

The perception of fatigue in chronically ill patients during using mechanical ventilation

While on mechanical ventilation, there are various causes which induce patients fatigue physical and psychologically. Although using mechanical ventilation is the way of helping patients during critical situation from hypoxia, such as trauma due to intubation, tissues around upper mechanical ventilation tract and trachea injury, damaged lungs tissue, barotrauma, respiratory tract infection. Because of using mechanical ventilation can effect human defense mechanism and interfere with

bactericidal system in the respiratory tract. Treatment by using humidity and secretion suction to clear airway, if perform incorrect technique, it will destroy respiratory mucosa. And if the suction equipment are contaminated, bacteria will easily enter into the lower respiratory tract. And lungs infection will follow. (Senawong, N .,2000). Sleep and rest will interfere by secretion suction and close nursing care. Gastric bleeding usually found in critical ill patients or patients on mechanical ventilation longer than 3 – 7 days, from stress situation. Nutrition status and electrolyte balance have important role on muscle mass and muscle function. Acid base balance of the body has effect toward oxygen releasing to the tissues. Though these factors have been taken care of until the normal situation occur before weaning from the mechanical ventilation. But fatigue will occur during weaning. And made the weaning more difficulty and will take a long time to wean. Especially in the late stage of chronically ill patients, they would have many problems when they were on mechanical ventilations. The treatment in order to wean from mechanical ventilation might take a long time. Because the patients' condition would precipitate the prolongation of using mechanical ventilation. Therefore the symptom of fatigue would increase, consistent with the process of the disease.

We could find that the etiology of the process of fatigue were due to physiological and psychological. It could happen at one time or separately (Milligan, et al. 1996 cited in Higgins,1998:181) and could happen individually. Physiological fatigue would deteriorate cell function and the organs were not able to function normally and effected psychologically. In psychological fatigue or stress it will effect neurosensory receptor and stimulate, hormone secretion more than normal and caused

abnormal body functions. It can be found that both physiological and psychological fatigue can cause fatigue in the patients' physical.

The perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation.

Chronically ill patients in critical condition who get treatment in intensive care unit. Normally, they are elders with single disease or more. Most of them have long term ventilation: LTV. In critical care, there are 2 groups of patients, one there are patients on mechanical ventilations more than 3 days and other are patients who never use mechanical ventilation before (Burns, 1999:465). Weaning of patients who have prolonged using mechanical ventilation (LTV) is different from those who use short-term mechanical ventilation. Weaning in short term uses only single weaning trial and can be weaned after one trial. Patients admitted in post-operative intensive care unit mostly are patients post cardiac-surgery (Hanneman, 1999:86). In the patients who have long-term ventilation, it takes several days or several weeks to perform weaning process. They will have several types of weaning trials. It has to be done little by little, sometimes there are some problems and has to start weaning again. (Burns, et al., 1995 cited in Higgins, 1998:178)

When patients have to breathe through mechanical ventilation and have difficulty in weaning. It is a big problem in patients in I.C.U (Lewandowski and Kositsky, 1983 ;Lindquist ,et al .,1993 cited in Higgins, 1998:177) especially with patients who have long-term mechanical ventilation. The problems are symptom control, nutrition, psychological and emotional problems and sleep-rest deprivation (Tasota and Dobbin, 2000: 43-44)

The mechanism of fatigue in chronically ill patients, (Bartly , cited in Kellum , 1985) Bartly has explained fatigue of chronically ill patients during weaning from mechanical ventilation that, when chronically ill patients were critically ill until they have respiratory failure and needed mechanical ventilation. When problems were treated, the mechanical ventilation must be remove by weaning as fast as possible. But the previous pathology that patients had before with using of mechanical ventilation induced movement limitation and caused muscle impairment, together with stress and anxiety while on mechanical ventilation. More cortisone was released which caused proteolysis from muscle (Unnapiluk,L.,Ronritivichai,C.,Tongchareon,V.,et al., 1997:89) especially the weakness of respiratory muscles.

When patients have to breathe by themselves after removing of mechanical ventilation, they are disorganized. When they have to breathe, they will use a lot of strength. Because of weakness of respiratory muscles, they cannot exhale to ventilate gases or gases exchange and get enough oxygen. It causes dyspnea and anxiety in the patients and the respiration become rapid, feeling tiredness, dyspnea (Knebel, 1991:324-325). The patients will feel uncomfortable so they do not want to breathe by themselves. As a result, the decrease of respiratory activities occurs. Result from inadequate oxygen, respiratory muscles will work harder. More lactic acid is produced in the muscles. It will increase tiredness and if the patients have electrolyte imbalance, anemia, receive inadequate nutrition, inadequate sleep-rest. All of those are accounted for fatigue.

During weaning from mechanical ventilation, the patients have physical examination and consider appropriate weaning method. However, patients should have psychological consideration too. From Connelly, Gunzerath and Knebel (2000:170)

study, it was found that the feelings, which most disturb patients on mechanical ventilation, were tiredness and anger. Whereas, the least was vigor, which had relationship with the success of weaning. When vigor is measured and it is low level before weaning, it tended to have failure of weaning. There was study about patients' experience while on mechanical ventilation. It was found that patients will lack of sleep and anxiety (Logan and Jenny, 1997:146). It can be a reason that lack of sleep induces fatigue.

In weaning from mechanical ventilation, it is the immediate withdrawal of mechanical ventilation or decrease breathing assisted by mechanical ventilation slowly (Palwatvichai, A., 1999:81; Shelledy 1999:968). It was found that 75 to 80 percent of patients with mechanical ventilations could stop using them within hours. Meanwhile 10 to 15 percent must use gradual weaning process and last 8 to 72 hours. Sometimes it can be weeks or months. Less than 1 percent of patients could not wean from mechanical ventilation (Hess and Kacmarek, 1996:73). When we start to wean from mechanical ventilation, the patients must get ready. Medical personal will make decision by choosing appropriate technique for each patient. It depends on the expertise and experience of each individual. The readiness of weaning in chronically ill patients takes these factors into account. When the problem of using mechanical ventilation has been solved, the patients could breathe by themselves and had adequate ventilation which showed by oxygen and carbondioxide in the artery (Arterial blood gas). The partial pressure of alveolar oxygen(PaO_2) must be more than 60 millimetre mercury(mmHg), partial pressure of alveolar carbon dioxide(PaCO_2) less than 50 millimetre mercury and pH is between 7.35 to 7.45. The effectiveness of accessory muscle shown by respiratory rate around 10-30 times/min. Respiratory pattern that

show the fatigue of muscle are breathing by using abdominal muscle alternatively with thoracic muscle (Respiratory alternans). There is abdominal wall movement and depress of chest wall during each inspiration and protrude when exhale (Paradoxical respiratory movement). Tidal volume in each respiration before removing mechanical ventilation should be 4-5 ml/kg body weight. The respiratory volume within 1 minute is 5-10 litres/min, if it is more than 10 litres/min, it means that there is fatigue of respiratory muscle. Cardio-vascular status can be assessed from heartbeat, which are about 60 to 100 times/min, systolic blood pressure between 90 millimetre mercury and 180 millimetre mercury, electrolyte balance and nutrition status. There should be malnutrition assessment by detecting anemia from albumin in blood test (~3.5-4.5 g/ml) because it will effect the lost of muscle mass including respiratory muscle (Vassilakopoulos ,et al., 1999:51; Esteban ,et al .,1995:346). Moreover, anemia should be treated if hemoglobin are lower than 10 gm% and hematocrit are lower than 30%. Beside physical condition, we can find anxiety, feeling of unsafe, we should provide information to the patients and include relative in caring of the patient (Kumponsiri, T .,1994:28).

Mechanical ventilation weaning techniques

The mechanical ventilation weaning techniques can be divided into 2 groups.
(Vassilakopoulos, Rousso and Zakyntino, 1999:53-58)

1. Weaning from mechanical ventilation by T -piece

Patients must breathe by getting humid oxygen from corrugate tube. In weaning from mechanical ventilation, there must be rest period that suitable for each patient to prevent fatigue of respiratory muscle. It was found that when fatigue respiratory muscle can rest for 24 hours, it will be enough to recover to normal

state (Norton and Neureuter, 1989 cited in Isaacson ,et al., 2000). This technique is the technique that use the shortest time.

2. Partial Support Weaning

2.1 Synchronized intermittent mandatory ventilation (SIMV) or Intermittent mandatory ventilation (IMV) is the insidious decrease of mechanical ventilation assist slowly. While patient has to breath more, it decreases fatigue of respiratory muscle, especially patients who are on mechanical ventilation for a long time. Started by set the respiratory rate in the mechanical ventilation about half of the previous rate, use the same tidal volume and same inspiratory flow.

2.2 Pressure Support Ventilation (PSV) is the mode, which is very popular in withdrawal of mechanical ventilation. It is believed that the patients will be more comfortable than other mode. When the patients inspire, the mechanical ventilation will push air into lungs until it reaches set pressure. The level of suitable pressure support PS is the size that patients do not have dyspnea. Also the patients can breath. Tidal volume is about 8-10 ml/kg body weight (Shelledy, 1999:976). Patients' respiratory rate will be 20-30 times/min and gradually decrease PS level until reach the least level before removal of the tube. It is around 5-8 cm/H₂O (Esteban, Frutos, Tobin, 1995:346). To overcome the resistant from endotracheal tube and mechanical ventilation cycle.

2.3 SIMV plus PS. This mode is used in the case of patient whose PS, tidal volume and respiratory rate are not consistent. Using of SIMV will guarantee that patient will get tidal volume. Also, the respiratory rate is adequate for gas exchange. However, there are reports that this technique will take time in weaning (Esteban, Alia,Ibanez,et al., 1994:1189)

2.4 CPAP (Continuous positive air way pressure)

In this mode the patients must breath by themselves by having positive pressure both inspiration and expiration. Positive airway will open small alveoli and the air will move into alveoli. It helps patients to get enough oxygen (Keitboonsri ,S .,1996:312 cited in Clarenratanakul,S.). It increases resistant when expire air, therefore this technique should be used with PSV (Tasota and Dobbin, 2000:43)

Weaning technique which patients had to breathe by themselves and fully used respiratory muscle. The T-piece technique, Low-level CPAP and Low rate IMV techniques will make respiratory muscle weak easily. However, this kind of exercise will improve the strength of muscle. Muscle will move strongly and in a short time, something like weight lifting. This kind of work will use the highest force and rest in between. When work hard, muscle will release lactic acid. It was believed that if one gets enough sleep, the muscle size and strength will increase.

SIMV,PSV,SIMV plus PS are the methods of gradually use of muscle strength and last a long time. It will increase working of respiratory muscle because we do not want respiratory muscle to exhaust. It is the technique that induce the indurance of muscle. By using this technique weaning from mechanical ventilation will take longer time than improving muscle strength technique.

In chronically ill patients who have more than one disease, and the severity of disease will effect patients who are on mechanical ventilation and need weaning. If it is at the beginning of chronical illness, it will not much effect the movement, physical and mental. Weaning from mechanical ventilation do not produce fatigue during weaning. Weaning will perform easily and quickly by using of T-piece, good enough

rest. However, if the patients' condition is in the critical or end stage of disease, it will effect movement, nutritional status, complication, economic directly to patients both physical and psychological. Therefore, the complex technique must be used and it takes more time. Sometimes, the patients felt more fatigue then using of mechanical ventilation will prolong or even die. Therefore, weaning from mechanical ventilation must use a short period of time. When symptoms lead to using mechanical ventilation are treated. Weaning from mechanical ventilation by using SIMV, PS and CPAP usually use in patients who has various diseases. Even though this technique takes a long time, more than 3 days to wean more than T -tube. In T- piece time spent is only half an hour to 2 hours and the weaning can be success.

Mechanism of fatigue in chronically ill patients during weaning from mechanical ventilation.

Fatigue has different causes and has different management. Fatigue causes by tiredness will be act differently from stress. The process of fatigue will be shown in Fig. 2

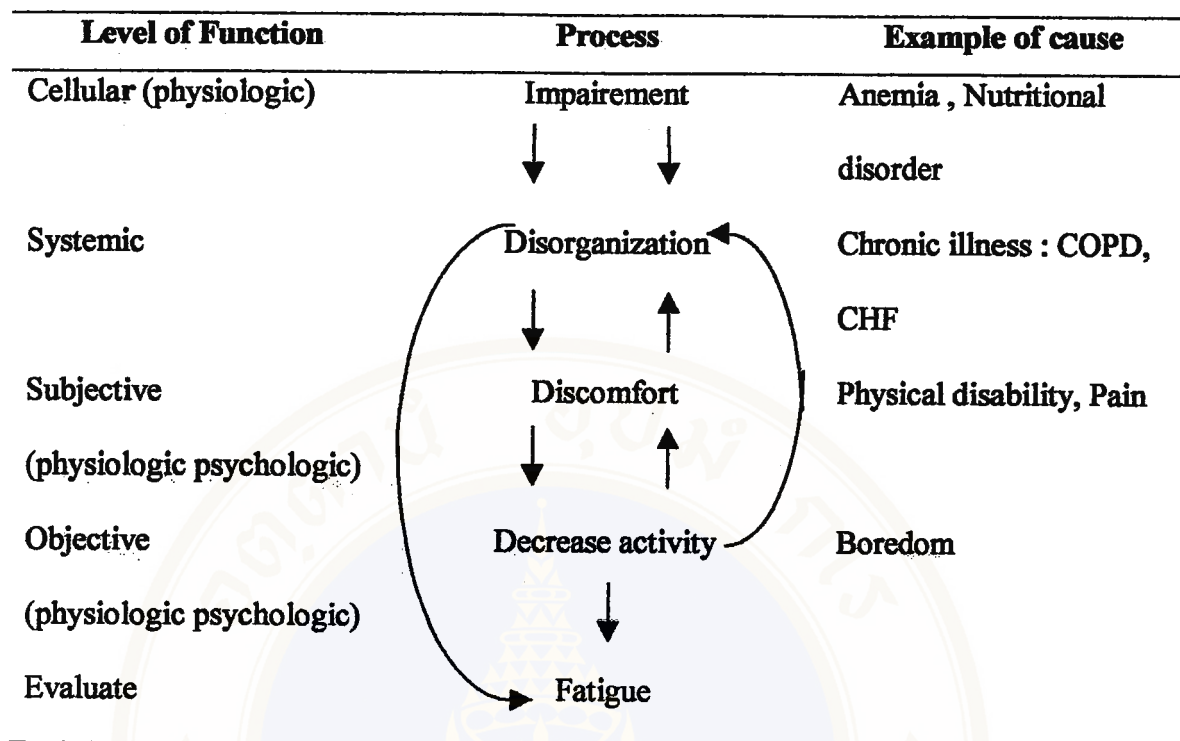


Figure 2. Process of Fatigue (Bartly , 1965 cited in Kellum , 1985 : 104)

There was an explanation of fatigue phenomena by Bartly (Bartly, 1985 cited in Kellum, 1985:104) that fatigue occur because of the impairment, disorganization, discomfort and decrease in activity. In each step it begins with cell, system, subjective, objective and evaluation. All are fatigue symptom.

Impairment, which occurs in cell level, is the decrease of cell function. It is the result of decreasing of stored energy such as oxygen, ATP (adenosine triphosphate), glycogen, which can destroy by radioactive therapy in cancer. Patients or COPD patients who have abnormal ventilation/perfusion and from the accumulation of waste product such as lactic acid, pyruvate. Repeatedly muscle contraction causes decrease ability. Muscle fiber will decrease the effectiveness and slow down the rehabilitation. The decrease of muscle has effect toward physical and mental changing. (as shown in Figure 3)

Disorganization occurs in system function level and result by fatigue. When cell, tissue and other organs fail such as in cardiovascular system or in renal failure. When human body has metabolism, cardiovascular system brings waste product from metabolism to excrete. Kidneys which are excrete organ lost their function, they cannot remove waste product. Therefore, the waste products accumulate in the body. It is the work of organ failure, which is physiological fatigue (Berger, McCuichen, Sourt, Walker and Walkinson, 1991 cited in Aaronson, 1999:45).

The psychological phenomena of the chronically ill patients. The patients will have problems of stress, anxiety and socio-economic. From stress, the neurological impulse is sent to limbic system and stimulate hypothalamus and increase secretion of Adreno Cortico Tropic Hormone (ACTH) and will stimulate adrenal Cortex which excrete more cortisol and it will stimulate gastric contraction and increase the secretion of hydrochloric acid and pepsin which destroy gastric mucosa and their defense mechanism. Circulation in the mucosa decreased and lack of energy they cannot protect the acid absorption. The proliferation of new mucosa cell are decreased gastric ulcer develop and gastric bleeding occur by this mechanism. If this condition is prolong, the patients will have anemia, no food absorption and can cause fatigue finally (Unnapiluk, L., Ronritivichai, C., Tongchareon, V., et al., 1997: 88-94; Satawatthamrong, Y., 2000: 477). And in the patients who were on mechanical ventilation more than 3 days they would develop more risk of gastrointestinal bleeding. It can be explained that it may be the result of tissue hypoxia that are increased in this group (Cook, Fuller, Guyatt, et al., 1994).

Discomfort depends on the individual perception, such as muscle pain after working hard or over use. The discomfort feeling is different from one's expectation.

However, the feeling or the perception of discomfort makes people stop working, as their physical state should be (Kellum, 1985: 105).

Decrease activity can cause no cross-bridge area in muscle. Decrease metabolism (Oxidative metabolism in muscle type I). And the result are muscle energy and endurance decrease. The more decreasing of muscle function the more fatigue occur (Woo, 1995: 15).

Evaluative. When there is physical fatigue as evaluate by feeling or perception which are normal state of expectation. The response of the body must have the decreasing of movement or stimulate to stop movement when the body is fatigue.

Psychological of fatigue

The chronically ill patients will have effects of physical, social, economic, and psychologically, result are anxiety, fear, and stress. And stress will stimulate Limbic system in the brain which controls emotion. And the neurological impulse will send to hypothalamus and stimulate the secretion of CRF (Corticotropin releasing hormone) cause the increasing of secretion of ACTH (Adrenocorticotropic hormone) and stimulate the adrenal cortex to secrete large amount of cortisol. Cortisol will increase the proteolysis in muscle and muscle atrophy occur. And inhibit the use of amino acid in protein formulation which cause ineffective function of the muscle. Furthermore, it can stimulate sympathetic nervous system and induce catecholamine secretion from adrenal medular which is adrenaline. The effects are generalized vaso constriction. The metabolism of the body will be anaerobic metabolism and causes lactic acid and large amount of hydrogen ion which inhibition the cycle of muscle contraction and relaxation (cross bridge cycle). Lactic will destroy the function of enzyme ATP are in muscle cells. Beside this, hydrogen ion which produce from the acid will replace

calcium ion in combination of troponin C. If the patients have muscle weakness when they have to work, they will be tired easily, such as using of accessory muscle in order to breath by themselves, when they have to wean from mechanical mechanical ventilation.

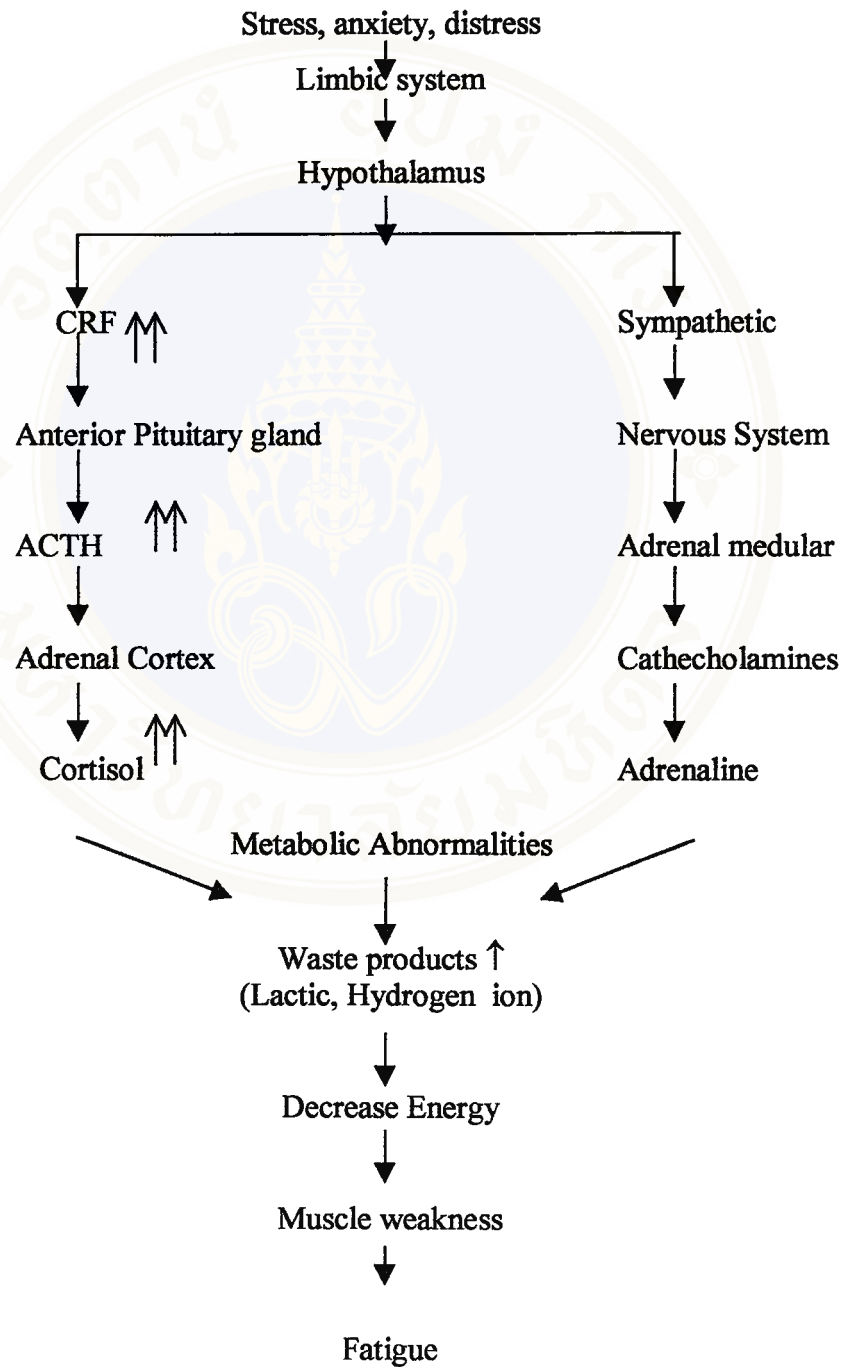
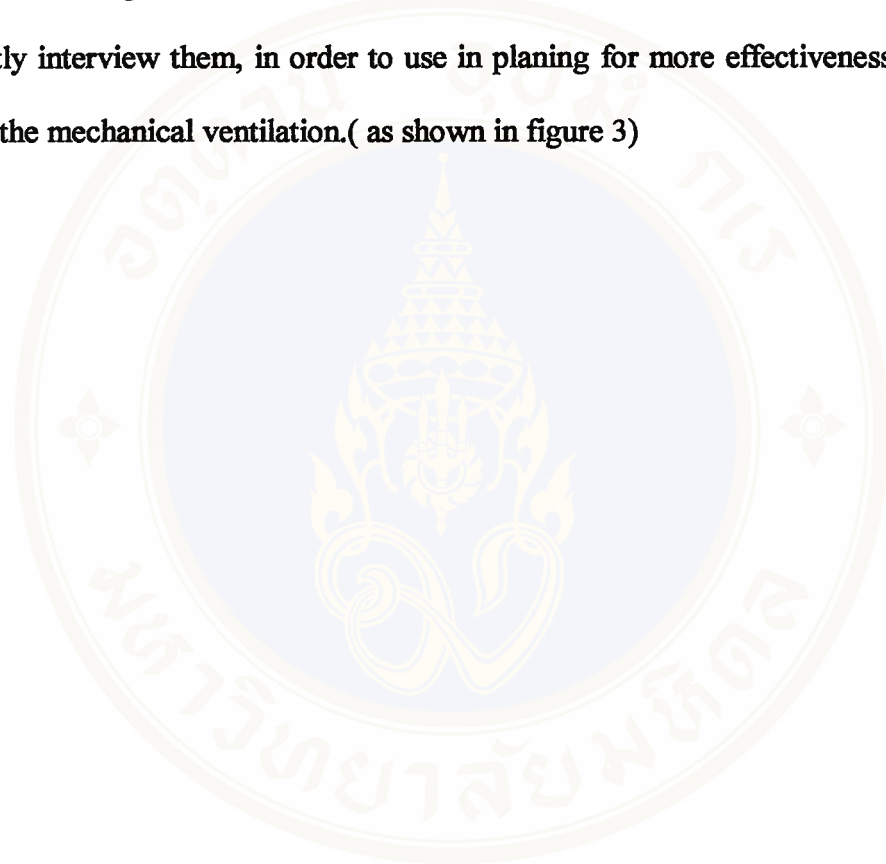


Figure 3. Psychologic of Fatigue (Scott , 1990:57,420,421)

Chronic illness patients are challenge for both nurses and patients in long term management with emergency symptoms. In order to improve physical and psychological fatigue of chronically ill patients during weaning from the mechanical ventilation. The patients will not able to tell when they are weaning. And fatigue is different among individual, when we want to know about their symptom. We should directly interview them, in order to use in planing for more effectiveness of weaning from the mechanical ventilation.(as shown in figure 3)





CHAPTER III

METHODOLOGY

The Study Design :

This study was a descriptive, retrospective design in order to investigate the perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation.

Population and Sampling

The population of this study was chronically ill patients who were successful in weaning from the mechanical ventilation, and were admitted at medical wards Siriraj Hospital, Mahidol University. The sample of 10 patients was chosen by a purposive sampling technique. Inclusion criteria for this study were as follows:

1. Being consciousness and the patients perceived fatigue.
2. Having a history of being ill with any chronic diseases for at least 3 months to 1 year, as all non-pathological alteration, worse or disability.
3. Being able to communicate fluently in Thai, and
4. No signs of dyspnea when responding to the interview questions

Setting

The setting of this study was Audsadang Building floor 6, 9-12, medical wards, Siriraj Hospital. These wards were arranged for admitting patients, treated by medicine with critical illness; and patients who were transferred from the intensive care units.

Instrumentation

There were two categories of the instrument used in this study.

1. The study instruments for data collection were interviewing questions, divided into three parts: personal data, weaning mechanical ventilation data, and perception of fatigue undergoing weaning from mechanical ventilation. The details of each instrument is presented as follow :

1.1 Personal data including sex, age, marital status, education level, occupation, income, adequacy of income, diagnosis, family status, and length of illness.

1.2 Weaning mechanical ventilation data including experience of using the mechanical ventilation, duration of using the mechanical ventilation, mode of mechanical ventilation, mode of weaning the mechanical ventilation, and physiological parameters during weaning time.

1.3 The perception about fatigue in chronically ill patient including

- The perception about fatigue in chronical ill

- The perception of fatigue of patients undergoing weaning from mechanical ventilation
- The perception in different symptom between chronic illness and undergoing weaning from mechanical ventilation

2. Tape recorder.

Validity of the Instrument

Content Validity

The interview questions were checked for their content validity by 3 experts. The first one was a nursing instructor who had expertise in psychology. The other two were nursing instructors who had expertise in mechanical ventilation nursing. All of them came from Medical nursing Department and Surgical nursing Department Faculty of Nursing, Mahidol University. Then, the study revised the interview questions based on these experts' comments including the appropriateness of the language, and clarity of the questions.

Objectivity

The investigator tested the interview questions for its objectivity by implementing them with three patients who had the same characteristics as the sample of this study did. This test showed that patients understood the questions in the same way as the study. The investigator interviewed and used the recorded tape. All taped interview data and process note were transcribed verbatim. The data was then analyzed, categorized and took the transcribe and the recorded tape to the advisor

Until data analyzed was the same focus, the instrument was confidence for collecting data.

Data Collection

The data was collected by the investigator using interviews and observes. The investigator asked the Faculty of Graduate Studies, Mahidol University for the introduction letter and the letter for a permission to collect the data, and then the investigator sent the letters to the Director of Siriraj Hospital. When the permission was received from the Director of Siriraj Hospital, the investigator met with the head nurses of the medical wards to explain and give the details of the study. The study was conducted from February 2001 to March 2001. The procedure in the data collection was follow :

1. Every day at 9.00 a.m.-14.30 p.m. The investigator selected the patients based on the selection criteria for this study
2. The investigator, after all criteria were met, introduced herself to the patients with friendly attitude, explained all necessary details of the study; asked for a permission to join the study until the data were completed; and asked for a informed consent formed. The interview was recorded by tape and noted. It remained confidential, the identity not being revealed. The recorded tapes were coded with numbers. All the recorded tape were destroyed after the study was completed.
3. The patients were informed of their rights before being asked to participate in the study. The patients were free to withdraw whenever they felt uncomfortable during the interview and their refusal would not affect the services they received.

4. After obtaining the purposive subjects permission, the collection of data was administrated by the following procedure:

4.1 The investigator interviewed the patients using the tape recorder and the interview question (AppendixC). During the interview, the investigator always concerned about the patient's symptoms. If the patient developed dyspnea or got worse, the interview stopped. The investigator took care of the patients, and reported the symptoms to the ward nurses. The investigator reviewed all data by listening to the tape recorder. If the data was not complete, the investigator return to the subjects and asked for completed data.

4.2 When the interview finished, the investigator were thanked for their participation in this study. The investigator and patient relations were then terminated.

4.3 Finally, the investigator then gathered all the data form the tape recording interview and observing for further analysis.

Protection of Human Subjects

All patients meeting the selection criteria were asked for the permission to participate in this study. The patients had the right to accept or deny the study without any effects on their treatment. During the interview, if the patient's symptom got worse, the study was terminated, and the investigator took care of them. All data were kept in a locked cabinet. Nobody except the investigator and the advisor can access to the data. Only the identification of the patients was recorded on the data sheet. All

the recorded tapes were destroyed after the study was completed. The patients then asked to sign the consent form.

Data Analysis

1. Personal data and weaning from mechanical ventilation data were analyzed by using frequency.
2. Data about the perception of fatigue undergoing weaning from mechanical ventilation were analyzed by frequency and using the content analysis.

CHAPTER IV

RESULTS

The study was aimed to study of the perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation. The results of this study were reported in three parts.

Part 1 Personal data of chronically ill patients.

Part 2. Weaning from mechanical ventilation data.

Part 3. Perception of fatigue undergoing weaning from mechanical ventilation.

Part 1. Personal data of chronically ill patients.**Table 1. : Frequency of patients classified by personal data (n=10)**

Characteristics	Frequency
Age (years)	
30 - 40	1
41 - 50	2
51 - 60	2
> 60	5
Range from 38 to 73 years, $\bar{x} = 57.5$	
Gender	
Male	6
Female	4
Marital status	
Married	7
Single	1
Widowed	2
Education level	
No education	2
Primary school	4
Secondary school	3
Diploma	1
Family status	
Member of family	7
Head of household	3
Occupation	
Employee	2
No occupation	8
Average patient income (bath/month)	
1,000 - 5,000	4
5,001 - 10,000	3
> 10,000	3
Economic status	
Adequate with saving	3
Adequate	2
Not adequate with debt	5

Table 1. : (continued)

Characteristics	Frequency
Diagnosis (disease)	
One disease	5
- pulmonary embolism	-1
- asthma	-1
- COPD	-3
Two diseases	2
- COPD, HT	-1
- CHF, obesity	-1
Three diseases	3
- CHF, AR, Viral hepatitis	-1
- DM, HT, RF	-1
- DM, Pneumonia, GI bleeding	-1
Perception of illness before using ventilation	
No	-
Having perception of illness	10
Perception of duration of chronic illness	
3 months - 1 year	3
1 year – 10 years	6
more than 10 years	1

From table I, it showed that in 10 patients, range of age from 38 to 73 years old. They were 6 males and 4 females. Seven patients were married and 7 patients had the education level in primary and secondary . Seven patients were member of family , and 8 had no occupation. Four patients had income 1,000 to 5,000 bath, while 5 patients were in debts. The majority of them have the disease with COPD. All of them knew about their disease. Lastly, the duration of their chronic illness was between 1 year to 10 years.

Part 2. Weaning mechanical ventilation data.**Table 2. : Frequency of weaning mechanical ventilation data. (n=10)**

Data about weaning from mechanical ventilation	Frequency
Experienced about using mechanical ventilation before	
1 time	5
2 times	4
6 times	1
Duration of using mechanical ventilation	
1 – 3 days	6
4 – 20 days	3
> 20 days	1
The method for weaning from mechanical ventilation	
T-piece	5
Partial support weaning plus T-piece	5
- CPAP, PSV, T-piece	-1
- SIMV, PSV, T-piece	-2
- SIMV, PSV, CPAP, T-piece	-2
Mode of ventilation before weaning	
CMV (continuous mandatory ventilation)	6
A/C (Assisted/controlled ventilation)	4
Duration of weaning from mechanical ventilation	
< 12 hours	3
12 – 72 hours	3
> 72 hours	4
Information about the method of weaning before weaning from ventilation	
- No information	10

CPAP = Continuous positive airway pressure ; SIMV = spontaneous intermittent mandatory ventilation ; PSV = Pressure support ventilation ; CMV = continuous mandatory ventilation ; A/C = Assisted/controlled ventilation.

From table 2, the data showed that 5 patients had experienced about using mechanical ventilation for the first time and 6 of them had the duration of using mechanical ventilation about 1-3 days. Five patients had used T-piece and partial support weaning. Six patients used mode CMV before weaning from mechanical ventilation and 6 patients had the duration of weaning from mechanical ventilation was less than 72 hours. All of them were not informed about the method of weaning before they started weaning from mechanical ventilation.

Part 3: The perception of fatigue undergoing weaning from mechanical ventilation

Table 3 : The perception about fatigue in chronically ill patients* (n=10)

Characteristics	Frequency
Physiological	
Weakness	5
Tiredness	4
Exhaustion	3
Dyspnea	3
Muscle pain	2
Weakness and anemia	1
Muscle pain and cramp	1
Sleepless	1
No appetite	1
Fever	1
Headache	1
Psychological	
Discouragement	1

(* one patients could had more than one symptom)

From table 3, in chronically ill patients based on physiological aspects it was found that 5 patients had perception of fatigue were weakness, and 4 patients had tiredness, 3 patients had exhaustion, 3 patients had dyspnea, and 2 patients had muscle pain .The number of the patients who reported about muscle pain and cramp, sleepless, no appetite, fever, headache, and discouragement which based on psychological aspects was one patient for each symptom.

Table 4. : Frequency of fatigue in chronically ill patients. (n=10)

Duration of fatigue	Frequency
All the day	2
Everyday	3
Every week	2
Every month	1
Every 3 months	1
Every 4 months	1

From table 4, it was showed that 3patients had experienced fatigue everyday. . The number of the patients who reported that they experience fatigue “ all the day ” were 2 equal as those with and “everyweek” Finally, the number of the reporting “everymonth”, “every 3 months”, and “every 4 months” were only one.

Table 5 : The perception of fatigue of patients undergoing weaning from mechanical ventilation. * (n= 10)

characteristics	Frequency
Physiological	
Tiredness	9
Sore throat	6
Weakness	5
Sleepless	3
Muscle pain	2
Tachypnea	2
Thirsty	1
Diaphoresis	1
Deafness	1
Dyspepsia	1
No appetite	1
Psychological	
Suffering	4
Discomfortable	3
Boring	2
Fear	2
Disturbed	1
Stress	1
Anxiety	1

(* one patients could had more than one symptom)

From table 5, it was showed that 9 patients percieved fatigue undergoing weaning from mechanical ventilation as tiredness. And other symptom as 6 patients percieved sore throat, 5 patients weakness. Concerning psychological aspects, 4 patients percieved fatigue as “suffering”, 3 patients percieved fatigue as “discomfort”.

Table 6 : Factor related to fatigue undergoing weaning from mechanical ventilation.

(n= 10)

factor	Frequency
Day of weaning when feeling faigue	
First day	4
2 –3 day	2
> 3 day	4
Duration of fatigue	
All the times	4
5 minutes	3
30 minutes	3
Cause of feeling fatigue	
Tiredness	4
Sleepless	2
Fear	2
Stress	1
Anxiety	1

From table 6, Four patients perceived fatigue on the first day ,and after 3 days of weaning from the mechanical ventilations. Four perceived fatigue all the time, and 6 patients perceived fatigue for 5 to 30 minutes. Tiredness was most frequently reported in 4 patients as cause of fatigue

Table 7 : Patient's reaction to fatigue undergoing weaning from mechanical ventilation. * (n = 10)

Patient's reaction to fatigue	Frequency
Rest in fowler's position	6
Telling doctor to give them mechanical ventilation	3
Praying	2
Talking with relatives	2
Trying to inhale deeply	2
Moving legs and arms	1
Talking with doctor	1
Telling nurse to give him mechanical ventilation	1

(* one patients could had more than one symptom)

From table 7, it was showed the respond of the patients when had feel of fatigue. The majority of them used resting in fowler's position 6 patients, 3 had requested mechanical ventilation, 2 had used praying , talking with relatives , and trying to deeply inhale .

Table 8 : The results finding in the perception of fatigue patients undergoing weaning from mechanical ventilation.

characteristics	Frequency
Symptoms noted in patients experience fatigue	
Tachypnea	1
tired	1
Discomfort	1
Boring/stress	1
Patients' fatigue was detected by	
None	6
Doctor	2
Relative	1
Nurse	1

From table 8, it was found that symptoms noted in the patients experienced were tachypnea, tired, and boring and stress were equally one. Six patients reported that no one detected their fatigue, 2 patients reported that the doctors detected their fatigue

Table 9 : The perception of increasing in fatigue when received help. (n=10)

characteristics	Frequency
Perceiving more fatigued	
No	6
Yes	4
- Suction secretion	-2
- Telling for extubation but delayed	-2

From table 9, four patients perceived more fatigue when receiving help. Two patients feeling worse when receiving help were suction secretion, and the two patients was told for extubation but delayed.

Table 10 : The difference of perception of fatigue between chronic illness and undergoing weaning from mechanical ventilation (n=9)

characteristics	Frequency
Chronic illness	
Too tired to work	6
Feeling tired when they going to work	1
Presume that they would be tired	2
Patients undergoing weaning from mechanical ventilation	
Tiredness	6
Tiredness and suffering	3

From table 10, it was found that 6 of chronically ill patients experience fatigue were too tired to work. Six patients who undergoing weaning from mechanical ventilation felt tired, and 3 patients felt tired and suffering

CHAPTER V

DISCUSSION

This study was aim to study of perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation. The patients were the 10 patients succeeding in weaning from mechanical ventilations and also perceived fatigue from weaning from mechanical ventilation. This study also described the result of the perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation in following topics :

Part I The perception of fatigue in chronic illness.

Part II The perception of fatigue of weaning from mechanical ventilation.

Part III The perception in different symptom between chronic illness and undergoing weaning from mechanical ventilation.

The perception of fatigue in chronic illness

Based on the interview of the patients, the investigator noted that most chronically ill patients were more than 60 years old who had COPD and other diseases. These patients had the disease between 1 to 10 years, and they perceived the symptoms of fatigue which congruent to frame work of the study that composed of 3 symptoms were tiredness, dyspnea, and exhaustion .The details of the symptoms were described in the following:

Tiredness :The patient number 2 said “Sometimes I felt fatigued and weakness, tiredness sometime I also had pain on the muscle all over my body .” The symptom can be described in the same way of lacking oxygen during activity, which happened in the short period. When they feel tired, the body will breathe faster than normal to take oxygen back autonomically. For chronically ill patients, this symptom can be easily noted when the body limited its movements to protect itself from their illness and then exacerbation occurred (Soo-amphan, A., Sornmanee, W. cited in Puangchand ,S.,1995 :12).

Dyspnea : The patient number 9 said “Sometime I felt weakness not exhaustion. I breathed faster than normal then got to **dyspnea**, no diaphoresis.”This symptom represented severe respiratory system illness. This needed to be treated promptly or it will hazard life, and bring the state of intubation. COPD patients and asthma patients shows this symptom. In this study, there were 4 patients with COPD, 1 patients with asthma, and 1 patient with pulmonary embolism (Gift, 1990 : 955).

Exhaustion : As the patient number 3 said “ I had a cough. . I loosed all of my power and then I got tired.”The symptom occurred due to lack of energy after excessive energy consumption. This can be perceived as exhaustion ; unable to move anywhere. This symptom could be relieved after taking a rest and having sufficient food(Kellum,1985:108).

Chronically ill patients did perceive to have other symptom such as 5 patients had weakness, 2 patients had muscle pain and the number of the patients who reported about weakness and anemia, muscle pain and cramp, no appetite, fever, headache, and discouragement was one patient for each symptom. Therefore, other symptoms which not congruent the framework that patients perceive were present as follow.

Weakness :The patients number 4 said “Sometime I felt **weakness**”.This described the deterioration of physical strength from chronic illness. This symptom can also be found in ordinary people with a normal life (Elipoulos,1999: 199).

Muscle pain :The patient number 4 said “ I had **muscle pain** all my body.” The muscle pain can be found all over the body or in specific part of the body which can generally be found with limited movement in chronically ill patients. When the muscle was used in actions, fatigue will occur due to the overflow of lactic acid in the muscle(Poochanappun,S.,1996:6).

Weakness and anemia : The patient number 9 said “ I felt fatigue and weakness because I had anemia, a doctor told me that I had to receive blood transfusion.”Being tired and then going pale had lead to more fatigue as the body system needed more hemoglobin to carry oxygen all over the body (Kumposiri,T.,1994:28).

No appetite : The patient number 5 said “ I felt very weak. I did not want to eat anything. ” This symptom led to a lack of energy and nutrition. In case of chronic illness, this caused low body resistance resulting in easily getting infected. In severe chronically ill patients, treatment such as drug usage is one cause of “no appetite” symptom. Stress and anxiety also caused “ no appetite. ” (Poochanappun,S.,1996:9)

And the patient number 10 had two symptoms, he complained “I felt weakness. I did not want to go anywhere, I had headache and fever. ”

Fever : Temperature of human body is getting higher than usual, cause higher rate of metabolism. Then, more oxygen is used and more carbon-dioxide is

accumulated resulting in more lactic acid in the body. This reaction causes the body weakened(Palwatvichai,A.,1999:21).

Headache : Patients who had headache was the result of many factors e.g. stress or/and their illness. This disturbed healthy body since the body could not take sufficient rest resulting in fatigue(Poochanappun,S.,1996:8).

From this study, all of this symptom is in the definition of perception of fatigue, decrease of energy , lost of strength, depletion, unable to work or perform activities (Kellum, 1985: 103) The depletion symptom depends on experience and situation of each person. And the decrease of physical and mental competencies do not subside by resting (North American Diagnosis Association ; Carpenito, 1995:379) and it is still in one's mind (subjectivity). It is the symptom of disappointment related to the total body tiredness and unable to relax which interfere the normal working ability (Ream and Richardson, 1997: 45).

From the study, it was noted that fatigue perceived by patients occurred all the time (2 patients), every day (3 patients), every week (2 patients), and every month (1 patient). In addition, patients had different economic status described as follows : no occupation (8 patients), and not enough consumption (5 patients). The patients had income between range of Baht 1,000 - 5,000 per month. The perception of fatigue has related to illness, treatment, environment, especially in intensive care unit, or in the ordinary patients' unit that sleep rest were interfered at all the time. And the patient also told interviewer that they were sleepless which can be said that sleepless was another element that cause fatigue.

Sleepless : As the patient number 6 told "I need at least 3 hours per night. If less than this I must find some time to sleep during the day. I felt tired and exhausted

from sleepless.” Patients could not get enough sleep, so the body had insufficient rest. So it made muscle weakness and respiratory muscle had weakness too. This was due to the symptoms of illness such as COPD patients who had dyspnea(Woo,1995).

The result of this study was congruent with that of Schaefer and Shober (Schaefer and Shober ,1993 : 266). Fatigue symptom is the problem that could be found in the elder and chronic patients. In term of gender, Lyne & Denphy’s study (Lyne & Denphy, 1998 : 66) had mentioned that age and gender were not correlated to fatigue. The study of Evengard (Evengard, et al., 1999 : 457) reported that female were more likely to have fatigue than male. Many illnesses that was found in female patients also related to an occurrence of fatigue such as SLE, CA Breast. However, in this study, the total number of patients was not large enough (only 6 male and 4 female).The disease with these patients were COPD, HT, DM, CHF ,GI bleeding, asthma, renal failure and viral hepatitis.

The perception of fatigue of weaning from mechanical ventilations

Based on the interview of the patients, the investigator noted that most chronically ill patients were more than 60 years old who had COPD and other diseases. These patients had the disease between 1 to 10 years. The patients had been used mechanical ventilations for 1-3 days and weaning with T-piece weaning or partial support weaning and CMV for more than 72 hours(see table2). These patients were not informed about the process of weaning from mechanical ventilations before, and they perceived the symptoms of fatigue which congruent to frame work of the study that composed of 4 symptoms were tiredness, tachypnea, stress and anxiety(see table 5). The details of the symptoms were described as following :

Tiredness : The patient number 1 said “ When I started to breath by myself, I felt so tired. My power was down. I was tired like I was running for a long time”. In chronically ill patients who got well, the weaning of ventilation started. However since the respiratory muscle did not actually perform the work by itself before. When the patient tired to breathe by himself, he felt that speed of breathing made him tired. Mechanical ventilation weaning techniques had divided into 2 groups (Vassilakopoulos, Roussos and Zankynthinos, 1999:53-58)

T-piece weaning, patients must breath by getting humid oxygen from collugate tube, there must be rest period that suitable for each patient to prevent fatigue of respiratory muscle. It was found that when fatigue respiratory muscle can rest for 24 hours, it will be enough to recover to normal state (Norton and Neureuter, 1989 cited in Isaacson ,et al., 2000).

Partial support weaning is the insidious decrease of mechanical ventilation assist slowly. While patient has to breath more, it decreases fatigue of respiratory muscle, especially patients who are on mechanical ventilation for a long time. Although the two method will prevent fatigue . Although the two method will prevent fatigue , the weaning process will make the patients perceive tired and the patients in this study was chronically ill patients who have more than one disease, and the severity of disease which have fatigue by lacking oxygen and accumulated lactic acid .About this results made patients perceive tired.(Woo,1995:12)

Tachypnea: The patient number 3 said “I was breathing quickly before I got tired.” When the patient had a rapid hard breathing and respiratory rate were over 30 beats per minute. It is a sign of muscle weakness. Impairment, which occurs in cell

level, is the decrease of cell function. It is the result of decreasing of stored energy such as oxygen, ATP (adenosine triphosphate), glycogen. The patients in this study who have accumulation of waste product such as lactic acid, pyruvate. Repeatedly muscle contraction causes decrease ability. Muscle fiber will decrease the effectiveness and slow down the rehabilitation. The decrease of muscle has effect toward physical and mental changing. (as shown in Figure 2) The patient will breathe more rapidly for increase ventilation and perfusion. It was the sign of tachypnea (Woo,1995:12).

Stress and Anxiety: The patient number 5 said "Tire of their promise that they are going to take the machine off but they did not and still keep telling me that they will. After several days it causes me the stress." And the patients number 6 said "A little bit tired, feel discomfort and get exhausted and I got irritate by E.T. tube (endotracheal tube) and also afraid that it will clog. My ears also hurted from the net line that attach to my ears".It was shown that all patient did not have any information before weaning. It cause stress and anxiety. As it stimulate limbic system in the brain which controls emotion. Further more, it can stimulate sympathetic nervous system and induce catecholamine secretion from adrenal medular which is adrenaline. The effects are generalized vasoconstriction. The metabolism of the body will be anaerobic metabolism and causes to form lactic acid which lead to fatigue symptoms (Scott and Edward,1990: 420).

This study had not found 2 symptoms that reviewed from the literature such as dyspnea, and exhaustion. These symptoms were usually show in the patients unsucceeded in weaning ventilation or the duration of weaning took more than 3-4 weeks. These symptoms can be found during disorganization stage but their will not

found in impairment stage(Kellum,1985:104; Berger, McCuichen, Sourt, Walker and Walkinson, 1991 cited in Aaronson, 1999:45). Two symptoms such as weakness and muscle pain were the symptoms in chronically ill patients when they started to wean from the mechanical ventilation. They still remain have these symptoms. Because lactic acid accumulate in the body(Woo,1995:11).

Moreover, other symptoms were thirsty (1 patient),sore throat(6 patients),no appetite(1 patient), deafness(1 patient),and diaphoresis (1 patient). These symptoms caused negative emotion the patients who must be intubated during they use mechanical ventilation (Fontaine, 1994, cited in Connelly, et al., 2000 : 173). So the patient perceived fatigue.

Psychological perceptions were presented in the following symptoms : discomfort (3 patients), bored (2 patients), disturbed (1 patient), suffering (4 patients). These symptoms happened from not communicate with others, feeling pain and unsafe(Bergborm- Engberg and Haljamae, 1989 cited in Connelly , 2000 : 174). That could make them more fatigue and the weaning from ventilation may be prolong or failure. Because the patient did not receive information about process of weaning mechanical ventilation(Wunderlich et al.,1999).Further more the patients known to have sleepless this can be said that sleepless was also an element helping to cause fatigue.

Sleepless : The patient number 1 said “At night they will wake me up for suction secretion after that I cannot go back to sleep.” The patients number 1 and 2 said “In that night I could not sleep because of tube irritated my throat.” It made more fatigue in patients. They had tube in their throat and it irritated all the time and keep waking up for suction secretion and very close care. The patient was perceived from

the weaning of mechanical ventilation as patients still felt that the ventilation still existed in their throat (Johnson and Sexton, 1991 cited in Connelly, et al., 2000 : 173). There was study about patients' experience while on mechanical ventilation. It was found that patients will lack of sleep and anxiety (Logan and Jenny, 1997:146). It can be a reason that lack of sleep induces fatigue.

This showed that the perceived symptoms during the weaning from mechanical ventilation as a fatigue from the interview and that from literature review were the same symptoms i.e. tired, tachypnea, stress, and anxiety.

Factor relate to fatigue undergoing weaning from mechanical ventilation

The patients were feeling fatigue at the first day [which all were from weaning by the T-piece method and after 3 days (which used the partial support weaning)]. (See table 6) The patients were feeling fatigue at the first day may be receive weaning with T-piece was the sudden stop of using mechanical ventilation. Patients must used their breathing muscle that was replace by mechanical for sometime. Decrease activity can cause no cross-bridge area in muscle. Decrease metabolism (Oxidative metabolism in muscle type I). And the result are muscle energy and endurance decrease. The more decreasing of muscle function the more fatigue occur (Woo, 1995: 15) as the patient self-breathe promptly which make fatigue symptoms occurred but used the lesser time in weaning from mechanical ventilation (Vassilakopoulos, et al., 1999). That fatigue symptoms occurred after the 3 days of weaning from ventilations was found in the patients who with T-piece method (which was the method of SIMV plus PS that gradually reduce the breathing by ventilation while patients themselves breathe). By this method, it would take more time in weaning from mechanical ventilation such as time used more than 72 hours

(in 4 patients) (Esteban, et al., 1994 : 1189 ; Vassilakopoulos , et al., 1999 : 53-58). When the investigator studied duration of fatigue found that four patients perceived their fatigues all the time, they used partial support weaning method, so the symptoms gradually increased.

Two patients who had experienced the first intubation had sleepless; 1 patient had anxiety; 2 patients felt fear and 1 patient had stress(also had experienced the intubation for 2 times). For these patients, the physician told that she would be able to wean off the mechanical ventilation soon and then the physician delayed his plan, so this made this patient stressfull. Patient had suffered from both illness by itself and psychological problem(Hafsteindottir, 1996 : 261). One reason which lead to fatigue in patient number 10 was that "It was that at the first time from weaning, I take a frequent breathe as I get used breathing with the ventilation. When I get familiar, I felt O.K." From the perception process, it showed that interpretation, which was the last process of perception, would make understanding or translate the meaning of the stimulus. Therefore, interpretation was on individual and subjective of stimuli. They might interpret in a difference way from the same stimulus (Petchsulsiri, P.,1988 ; Noppaket, R.,1993:1).

Patients' reaction to fatigue undergoing weaning from mechanical ventilations.

From the interview, 6 patients would rest in the fowler's position ;2 patients had prayed ; 1 patient moved his arms and legs to practice his breathe taking and relaxing (See Table 7). It showed that this cause the patient's mine and body to relax with fowler's position, lung would have more air volume and diaphragm would contract better resulting in less tiredness (Liewchalermwong, B.,cited in Limlomwong,

L.,1998: 212). Relaxing their mind by praying was the social and culture influences which affected the concerned health (Kozer,Erband andBufalino,1989). They did not think about fatigue while weaning from mechanical ventilation (Small and Lamb, 1999: 476). With an appropriate rest fatigue respiratory muscle in a patient can be cure if a patients took a rest for 24 hours can be cured the respiratory muscle to normal position (Norton and Neureuter, 1989 cited in Isaacson, et al., 2000). It found that two COPD patients who took the breathing course used a purse lip exercise to relax their exhale for a longer time.As the patient number 9 told“Slowly and deeply breathe in a minute can help.”As the patient number 10 said “ Inhale slowly and deeply can reduce tiredness.”

One patient had little exercise by moving its arms and legs when they feel muscle pain (which she used to be a masseuse). The patient number 4 said “I have arm and leg exercise for 6 days and feel better.”This is her past experience to cure herself when stimulus come to (Hanucharoenkul, S.,1996 : Phancharoenworakul, K.,1985 : 311-378).It was a step to interpret the perception.

Patients told the physician for taking the ventilation when they felt tired. Three patients talked to their relatives to reduce their stress and anxiety. As patient number 5 said “ Talk with relatives, they can understand just looking through the eyes while a physician did not get the feeling”. Three patients asked their doctors, and 1 patient asked the nurse for taking the ventilation. This represented the good experience from using the ventilation as they did not feel tired if they used the machine. Therefore, asking for using the ventilation is a relief (Hanu-charoenkul, S.,1996) which was the perceived method that is so simple for the patients when they were tired, first thing to do is relief it(Petchsuksirikul, P.,1988: 25; Noppaket, R.,1993 : 1).

As patient number 1 said “ I can’t bear, when I’m on the ventilation. I feel less tired” Talking to their relatives can reduce the stress and tired. There were 2 patients who talked to their relatives. They felt better though they could not speak as endotracheal tube was in their throats. Their actions could be understood by their relatives.

From this we can see when the patient feel tired . They used this method to solve their problems such as patients number 7 said to the interview “ Lied still in bed and prayed, my sister help praying for me” One patient had talked with the doctor and got the information that help released their worry. “ When I have serious thinking, I fear about clogged tube and I ask a doctor by writing and he said that it won’t happen. Take it easy and breath as normal.” From the study of Jablonsky (Jablonsky, 1994 cited in Hafsteindottir, 1996 : 261), when patient could not talk, writing or signal or relative’s notice could be helpful to the patient as they could not get connect with the physician(Hafsteindottir, 1996; 265).

The results finding in the perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation

There were 6 patients whom no one notice their fatigue because of communication problems when the mechanical ventilation were still on (See Table 8). Their perception showed the feeling of isolation, and not be able to talk to others (Bergborn-Engberg and Haljamae cited in Wunderlich, 1999 : 2). Patients thought that physicians did not take care of the symptoms.. The symptoms that the physician noted were physical and psychological symptoms such as tachypnea, tiredness, discomfort, boring and stress. For psychological symptoms, relatives usually noticed, and the symptoms presented in wording and gesture. Only close relatives would find out the symptom which could stimulate that patients to express their feeling (Chanaem, S.,



1997). For the patient number 5 said that "My wife knew when she saw my eyes. I feel bored and stressful, then she cleaned my face while the physician did not notice that." From this study, the observers who noticed the fatigue while the patients were weaning from mechanical ventilations were two doctors, one nurse person and one relative.

The perception of increasing in fatigue when received help

Four patients perceived more fatigued when receiving help (see table 9). Causes of feeling worse when the patient got some help from the treatments were suction secretion (2 patients). The patients felt fatigue because of lacking oxygen while the nurse suction secretion. It was the perception of the patients because they saw nurses take off the mechanical ventilation, nurses did not tell the process of suction secretion. It was consistent with various studies which found that patients and nurses perception usually not congruent (Cushman & Dijkers, 1990 cited in Essen & Sjoden, 1991:1363; Essen&Sjoden 1991;Heikkila, et al., 1998). And the physician told to extubate but delayed to do so (2 patients), so the patients felt fatigue because of anxiety and stress(Logan and Jenny,1997).

The perception in different symptoms of fatigue between chronic illness and undergoing weaning of mechanical ventilations.

From the interview, symptoms of fatigue in chronic illness (See table 10) are 6 patients tired as they could not work, feeling tired when they go to work, presume that they would be tired. Because of the assessing of severity, treatment and the past had influenced toward the perception of future situation. Their previous experienc to interpret the perception interpret the perception (Hanu-charoenkul, S.,1996 ;

Phancharoenworakul, K.,1985 : 311-378).The perception of fatigue undergoing the weaning of mechanical ventilation were tired 6 patients and tired and suffering 3 patients. When patients have to breathe by themselves after removing of mechanical ventilation, they will use a lot of strength. Because of weakness of respiratory muscles, they cannot exhale to ventilate gases or gases exchange and get enough oxygen. It causes dyspnea and anxiety in the patients and the respiration become rapid, feeling tiredness (Knebel, 1991:324-325). As a result, the decrease of respiratory activities occurs. Result from inadequate oxygen, respiratory muscles will work harder. More lactic acid is produced in the muscles. It will increase tiredness as the complain of the patient number 1 and 2 ,and inadequate sleep-rest as the complain of the patient number 1 and 6. All of those are accounted for fatigue only one patient perceived the same symptom between chronic illness and undergoing the weaning of mechanical ventilation as she used mechanical for 22 days and the physician trial weaning for 3 times. Lastly, she had tracheotomy tube and had good support form her family. Perception is what people select and subjective, even in the same situation. But we can not conclude that the people will perceive that situation in the same way. Because people have different background and experiences(Pancharoenworakul ,K., 1985: 377-78).

CHAPTER VI

CONCLUSION

Conclusion

This study was a descriptive study, aiming at studying perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation. The population of this study was chronically ill patients who were successful in weaning from the mechanical ventilator and were admitted in to medical wards, Siriraj Hospital , Mahidol University. The collection of data was conducted from February 2001 to March 2001. The sample of 10 patients was chosen by a purposive sampling technique with no regard to gender, age and education. Having a history of being ill with any chronic disease, as all non-pathological alteration, worse for disability. All of them were extubated, consciousness, able to communicate and perceive fatigue. No sign of dyspnea when responding to the interview question. Moreover, the patients were willing to participate in this study. The study instruments were composed of a tape recorder and the interview question. The data were analyzed by content analysis. A summary is presented as the followings:

1. The majority of patients aged more than 60 years old and all patients have average age of 57.5 years. Six patients were male and four were female. Seven patients were marriage . Seven patients had education level of primary school to secondary school. Seven patients were lived with their families. Eight patients had no

occupation, but four patients had a finance support from their children approximately Baht 1,000 - 5,000 per month. Five patients were indebtedness. The majority of the diagnosis was COPD. All of them were perceived about their illness before using mechanical ventilators. Six patient's perception about the duration of chronic disease was 1 year to 10 years. Five patients experienced using ventilation for the first time, while 6 patient's duration of using mechanical ventilation was 1 to 3 days. The number of patients treated by the method of weaning T-piece and partial support weaning were equal. Four patients used CMV before weaning from mechanical ventilation and their duration of weaning was more than 72 hours. All of them were not informed about the process of weaning from mechanical ventilation before the weaning started.

2. The perception of fatigue in chronically ill reported by the patients was both physiological and psychological symptoms. Concerning physiological symptoms there were weakness (5 patients), tiredness (4 patients), exhaustion (3 patients), dyspnea (3 patients), muscle pain (2 patients), weakness and anemia (1 patient), muscle pain and cramp (1 patient), sleepless, no appetite (1 patient), and having a fever (1 patient), and a headache (1 patient). Concerning psychological symptom, it was discouragement (1 patient).

3. Perception of fatigue undergoing weaning from mechanical ventilation included tired (9 patients), weakness (5 patients), sleepless (3 patients), muscle pain (2 patients), tachypnea (2 patients), and other symptoms such as sore throat (6 patients), thirsty (1 patient), and diaphoresis (1 patient). All of them had physical and psychological symptoms such as suffering (4 patients), discomfort (2 patients), boring (2 patients), fear (2 patients), disturbance (1 patient), stress (1 patient) and anxiety (1 patient)

4. The factor related fatigue undergoing weaning from mechanical ventilation showed that the 4 patients felt fatigue in the first day, and other 4 patients could feel after 3 days of weaning, and they felt the fatigue all the time. Fatigue was triggered by tiredness (4 patients), sleepless (2 patients), fear (2 patients), and stress (1 patient).

5. As for coping with fatigue, 6 patients had arranged themselves to rest in fowler's position; 2 of them prayed while they had rest; 3 patients told their doctors to give them mechanical ventilation; 2 patients talked to their relatives to relax from fatigue; and other 2 patients tried to breathe. One patient who had muscle pain patient moved their legs and arms to ease their symptoms, and one patient told nurses to give him mechanical ventilator. Another one talked about his symptoms to the doctor.

6. Six patients noted that nobody observed their fatigue during the weaning and 4 found that they had symptoms. The symptoms notified were tachypnea, tired, discomfort, and boring and stress. The personnel who noticed such symptoms were doctor (2 patients) , relative(1 patients) and nurse (1 patient). Four patients described that the treatment make them more fatigue. Other 6 patients felt better. Causes of stimuli which led 4 patients to feel more fatigue were suction secretion (2 patients) and telling for extubate but delayed doing so (2 patients).

7. Nine patients had perceived the difference fatigue between fatigue due to chronic disease and fatigue due to undergoing weaning from mechanical ventilation. For fatigue due to chronic illness 6 patients felt very tired so they could not do any work. For fatigue due to undergoing weaning from mechanical ventilation 6 patients were tired and other 3 were both tired and suffering .

Limitation

Most of the samples were patients who were chronic present and also experienced fatigue. Sometime the interview have to stop cause by patients illness such tired and investigator went back to interview for 2 or 3 times to make data completed.

Implication and Recommendation

Implication and application of the study for nursing practice are the followings .

1. Nurses should be careful for nursing activities not to make the patients too tired such as suction secretion.
2. Nurses should be aware of information technique that describe weaning process from ventilation and repeat this information to patients and their relatives. Moreover, nurses should evaluate the information by reporting in chart every time. It is useful for further nursing care plan.
3. Nurses should stay with patients while starting weaning from mechanical ventilation especially in the first 30 minutes to make them feel safe and confident. It protected them from fatigue.

Implication for further study

1. Study of a larger number of fatigue in chronically ill patients, underlying weaning from mechanical ventilation.
2. Further study should concentrate on fatigue undergoing weaning from mechanical ventilation by using other instrument such as visual analog scale.

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APPENDIX A

LIST OF EXPERT

The name of qualified who examined the validity of the interview questions about perception of fatigue in chronically ill patients undergoing weaning from mechanical ventilation.

1. Mayuree Kaewchantr , M.Ed.

Assistant Professor

**Department of Surgical Nursing , Faculty of Nursing,
Mahidol University.**

2. Suporn Danaidutsadeekul , Ph.D.

Assistant Professor

**Department of Surgical Nursing , Faculty of Nursing,
Mahidol University.**

3. Atirat Wattanapailin , Ed.D.

Assistant Professor

**Department of Psychiatric Mental Health Nursing ,
Faculty of Nursing , Mahidol University.**

APPENDIX B

แบบยินยอมเข้าร่วมการศึกษา (ตอบแบบสัมภาษณ์)

วันที่.....เดือน.....พ.ศ.

ข้าพเจ้าอายุปี

อาศัยอยู่บ้านเลขที่.....

ถนน

แขวง เขตจังหวัด

ได้รับทราบรายละเอียดของโครงการวิจัย เรื่องการรับรู้อาการอ่อนล้าของผู้ป่วยเรื้อรังในขณะห่าเครื่องช่วยหายใจ

ได้รับทราบรายละเอียดของโครงการวิจัย เรื่องการรับรู้อาการอ่อนล้าของผู้ป่วยเรื้อรังในขณะห่าเครื่องช่วยหายใจ

ข้าพเจ้ามีสิทธิ์ที่จะขอการเข้าร่วมโครงการวิจัยนี้ และการงดการเข้าร่วมการวิจัยนี้จะไม่ผลกระทบต่อ การได้รับบริการ หรือการรักษาที่ข้าพเจ้าหรือผู้เกี่ยวข้องมีสิทธิ์จะได้รับแต่ประการใด อีกทั้งได้รับทราบจากผู้วิจัยว่า จะไม่เปิดเผยข้อมูลหรือผลการวิจัยของข้าพเจ้าหรือผู้เกี่ยวข้องกับข้าพเจ้าเป็นรายบุคคลต่อสาธารณชน

ข้าพเจ้าและผู้เกี่ยวข้องกับข้าพเจ้าได้รับทราบข้อมูลจากผู้วิจัยจนหมดข้อสงสัยโดยตลอดแล้ว และยินดีตอบแบบสอบถามของการวิจัยนี้ จึงได้ลงลายมือชื่อไว้เป็นหลักฐานต่อหน้าพยาน

ลงชื่อ ผู้ยินยอมหรือผู้แทน

โดย ขอบธรรม

(.....)

ลงชื่อหัวหน้าโครงการวิจัย

(.....)

ลงชื่อพยาน

(.....)

ลงชื่อพยาน

(.....)

APPENDIX C**INSTRUMENT****แบบสัมภาษณ์อาการอ่อนล้าของผู้ป่วยเรื้อรังขณะหย่าเครื่องช่วยหายใจ****ส่วนที่ 1 ข้อมูลส่วนบุคคล**

1. เพศ ชาย
 หญิง
2. อายุ.....ปี
3. สถานภาพสมรส
 คู่
 ม่าย
 โสด
 แยกกันอยู่
4. ระดับการศึกษา.....
5. สถานภาพในครอบครัว
 หัวหน้าครอบครัว
 สมาชิกครอบครัว
 ผู้อาศัย

6 อาชีพ

- รับจ้าง
- ราชการ
- รัฐวิสาหกิจ
- ค้าขาย

7. รายได้.....

8. ความเพียงพอของรายได้

- เพียงพอและมีเหลือเก็บ
- พอใช้จ่ายตลอดเดือน
- ไม่เพียงพอและมีหนี้สิน

9. การวินิจฉัยโรค.....

10. โรคเรื้อรังที่เจ็บป่วย.....

ระยะเวลาที่ทราบว่าเป็นโรค

ส่วนที่ 2 ข้อมูลเกี่ยวกับการหย่าเครื่องช่วยหายใจ

1. ประสบการณ์ในการรักษาด้วยการใช้เครื่องช่วยหายใจ

2. ระยะเวลาที่ใช้เครื่องช่วยหายใจครั้งนี้

3. วิธีการใช้เครื่องช่วยหายใจก่อนการหย่าเครื่องช่วยหายใจ.....

.....

4. วิธีการหย่าเครื่องช่วยหายใจ.....

.....

5. ระยะเวลาที่ใช้ในการหย่าเครื่องช่วยหายใจ.....

6. ข้อมูลที่ได้รับขณะหย่าเครื่องช่วยหายใจ

- ไม่มี
- มีระบุ.....

ส่วนที่ 3 การรับรู้อาการอ่อนล้าขณะหย่าเครื่องช่วยหายใจ

1. คุณรู้สึกอ่อนล้าบ้างหรือไม่ มีอาการเป็นอย่างไร
2. อาการอ่อนล้าที่เกิดขึ้นมีความถี่หรือบ่อยครั้งขนาดไหน ทำอย่างไรอาการจึงลดลงหรือหมดไป
3. ในขณะที่หย่าเครื่องช่วยหายใจคุณรู้สึกอ่อนล้าบ้างหรือไม่ หรือมีอาการอะไรบ้าง
4. อาการอ่อนล้าที่เกิดขึ้นก่อนหย่าเครื่องช่วยหายใจและขณะหย่าเครื่องช่วยหายใจแตกต่างกันไหม
ทำไมจึงรู้สึกเช่นนั้น
5. อาการอ่อนล้าที่เกิดขึ้นขณะหย่าเครื่องช่วยหายใจเกิดขึ้นเมื่อไรและหายไปอย่างไร
6. ช่วงเวลาไหนหรือวันไหนขณะหย่าเครื่องช่วยหายใจที่คุณรู้สึกอ่อนล้ามากที่สุด ทำไมจึงรู้สึกเช่นนั้น
7. เมื่อรู้สึกอ่อนล้ามีอาการในขณะที่หย่าเครื่องช่วยหายใจคุณทำอย่างไร ได้ผลเป็นอย่างไร
8. ในขณะที่หย่าเครื่องช่วยหายใจเมื่อคุณมีอาการอ่อนล้ามีอาการมีใครสังเกตเห็นบ้างไหม ลักษณะอาการที่สังเกตเห็นนั้นเป็นอย่างไร ได้รับการช่วยเหลืออย่างไร
9. มีบ้างไหมที่เจ้าหน้าที่พยาบาลปฏิบัติเพื่อลดอาการอ่อนล้า อาการที่เกิดขึ้นหรือทำให้อาการอ่อนล้าอาการที่เกิดขึ้นหายไปทำไมจึงรู้สึกเช่นนั้น
10. มีอะไรอีกบ้างที่คุณอยากจะบอกเกี่ยวกับอาการอ่อนล้า อาการที่เกิดขึ้นของคุณในขณะที่หย่าเครื่องช่วยหายใจ

BIOGRAPHY



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