ORIGINAL ARTICLE

Recollections Expressed by Mechanically Ventilated Patients of Intensive Care Unit (ICU), Hospital Universiti Kebangsaan Malaysia (HUKM)

Ho Siew Eng[1], Hamidah Hassan[1], Sanisah Saidi[1], Syed Zulkfli[2]

[1.] Department of Nursing, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur
[2] UKM Medical Molecular Biology Institute (UMBI) Universiti Kebangsaan Malaysia, Kuala Lumpur

ABSTRAK

Pesakit yang memerlukan rawatan di Unit Rawatan Intensif berkemungkinan melalui pengalaman yang tidak menyenangkan. Pengalaman ini termasuk dalam bentuk insiden-insiden berfakta dan juga gangguan ingatan terhadap persekitaran dalam unit, sebagai contohnya, kerap bermimpi, halusinasi dan pengalaman yang menakutkan. Tujuan kajian ini adalah untuk mengenalpasti pengalaman yang dilalui pesakit ketika mereka dirawat dengan bantuan pernafasan mekanikal di ICU HUKM. Kajian yang berbentuk irisan rentas ini menggunakan soalselidik pengalaman rawatan intensif "Intensive Care Experience Questionnaire" yang mengandungi empat domain: kepekaan terhadap keadaan sekeliling, pengalaman yang menakutkan, pengingatan semula pengalaman dan kepuasan terhadap jagarawatan. Seramai 45 responden yang di unit rawatan intensif (ICU) memenuhi kiteria yang telah ditetapkan menyertai kajian ini. Kajian ini telah dijalankan di ICU HUKM dari Januari 2006 hingga Mac 2006. Kajian menunjukkan bahawa 20 responden (44%) adalah peka terhadap persekitaran mereka, 31 responden (69%) melaporkan pengalaman yang menakutkan. Kebanyakan responden, 43 (96%) berpuas hati dengan jaga-rawatan. Terdapat kolerasi yang positif antara kepekaan terhadap persekitaran dengan keupayaan responden untuk mengingat semula pengalaman ($p<0.05$). Kepekaan pesakit terhadap persekitaran merupakan faktor sumbangan yang signifikan dalam menjangka keupayaan pesakit untuk mengingat kembali pengalaman semasa di ICU dengan nilai pekali beta 0.353 dan $p<0.05$. Hasil kajian ini membolehkan jururawat memperlihatkan keperluan pesakit yang bernafas dengan bantuan mekanikal daripada maklumat pesakit. Pesakit melaporkan frustasi dalam usaha mereka untuk menyuarakan laporan pengalaman yang tidak menyenangkan masing-masing. Informasi ini memperihalkan paras frustasi sebenar yang dialami oleh pesakit apabila mereka ingin menyuarakan diri semasa dibantu oleh alat pernafasan mekanikal.

Kata kunci: Unit Rawatan Intensif, pernafasan mekanikal, maklumat

ABSTRACT

Ventilated patients who require intensive care unit (ICU) treatment may encounter unpleasant experiences. These experiences may include factual incidents and delusional

Address for correspondence and reprint requests: Ho Siew Eng, Department of Nursing, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Kuala Lumpur, Malaysia. Email: ho@mail.hukm.ukm.my

memories of ICU such as dreams, hallucinations and frightening experiences. A cross sectional study using "Intensive Care Experience Questionnaire" consisted of four domains: awareness of surrounding, frightening experiences, recall of experience and satisfaction with nursing care. Forty five participants who fulfilled the inclusion criteria were recruited in this study. This study was conducted in ICU of HUKM from January to March 2006. Results showed that 20 respondents (44%) were aware of their surrounding and 31 respondents (69%) reported frightening experiences. Majority of respondents (43 respondents, 96%) reported satisfaction with the delivery of nursing care. There was positive correlation between awareness of surrounding and their abilities to recall their experiences ($p<0.05$). Patients' awareness of surrounding achieved the strongest statistical significance as a contribution to the prediction of their abilities to recall their experiences with beta coefficient value of 0.353 and $p<0.05$. The finding of this study permits nurses to see the problems of mechanically ventilated patients through reports of unpleasant recollections by the patients themselves. Patients reported frustrations in their attempts to make their needs known. Although they are on sedation, they are aware of all unpleasant events occurring in the ICU

Key Words: Intensive care unit, mechanical ventilation, recollection

INTRODUCTION

The intensive care unit (ICU) is a highly specialized unit, where medical and nursing staff with specialised skills provides treatment and care to patients with life threatening conditions (Patak et al. 2004). Patient's physiological status is monitored continuously and special procedures and therapies, which cannot be undertaken in the general ward, are carried out in this unit (Stein-Parburg & McKinley 2000). Ventilated patients who require intensive care unit (ICU) treatment may encounter unpleasant experiences. These experiences may include factual incidents and delusional memories of ICU such as dreams, hallucinations and frightening experiences apart from their ongoing medical or surgical illness (Patak et al. 2004; Bergborn-Engberg & Haljamae 1998). These experiences have been known to prolong their rehabilitation, leading to poor recovery. Survivors of critical illness from ICU with differing presenting diagnoses have reported physical and psychological problems during their recovery (Jones et al. 2003). Moreover, Rattray et al (2004) & Patak et al (2004), reported that patients who required ICU had untoward experiences lasting well beyond the physical recovery of their illnesses. These incidents may include factual or delusional memories of their ICU stay, and these are usually reported as dreams and hallucinations.

The sources of stress on patients in ICU include health care providers themselves, visitors, and environmental factors such as noise, lightning and procedures. Some frequently cited factual memories encountered in ICU and perceived as stressors to the patients are: tracheal intubation, extubation, endotracheal suctioning and physiotherapy. Although, these memories may be worsen by illness, judicious use of sedation can overcome these problems (Roberts et al. 2007).

Patients admitted into the ICU can broadly be divided into two types. Some patients are admitted as emergencies such as after a cardiac arrest or major trauma e.g. road traffic accident. On the other hand, admission would be planned for example, after surgery or as a result of an existing medical condition that has deteriorated and needed respiratory support, close monitoring and drug

infusions. There may be differences in the level of adaptation between the two types of patients. Pre-admission information, which can be given to patients for "elective" admission to the ICU, provides a way to achieve better adaptation, while such benefit is not available for an emergency admission (Cornock 1998). For an emergency admission, the patient usually experiences higher level of stress and anxiety due to a sudden change of environment and unavoidable traumatic encounters (Strahan et al. 2003). It can be judged from a nurse comment as cited by Bergbom-Enberg & Haljamae (1998) *"even as long as four years after respirator treatment, most patients (90%) who remembered their treatment still recall the situation as unpleasant and stress evoking*" that patients often regard ICU as a place that is unpleasant and dreadful. According to Stein-Parbury et al (1990) mechanically ventilated patients face many barriers in their communication needs. Inability to communicate with others results in unrecognized pain, feelings of loss of control, anxiety, fear, distress, frustration and depersonalization. Tracheal intubation is often being regarded as the number one problem causing communication difficulties (Roberts et al. 2007).

Bergbom-Enberg et al (1998) retrospectively interviewed 158 patients who were mechanically ventilated from 2 to 48 months and recorded their recall of experiences during their ICU stay. Approximately 50% of the patients were able to remember the experience of being ventilated and most recalled the situation as discomforting, stressful, feelings of anxiety, fear, agony, panic and insecurity. Similarly, Roberts et al (2007) concluded that the inability to speak was identified by all respondents as causing distress such as pain and discomfort from endotracheal tube, suctioning. Other distresses were inability to orientate to time and the intolerable amount of noise. These distressing factors can be aggravated by the health care providers themselves in the delivery of care. Most of the time, the nurses failed to address the patients' specific physical and emotional needs because of communication problems (Scragg et al. 2001).

According to Roberts et al (2004), over one third of patients have some degree of factual memory related to mechanical ventilation, especially suctioning and removal of the endotracheal tube. Stein et al (2000) stated that factual recall of traumatic incidents e.g. endotracheal tube suctioning may protect patients against anxiety and panic attacks after ICU discharge. Traumatic memories from the ICU such as hallucination may leave patients vulnerable to anxiety, depression, and panic attacks and most feared of all, post traumatic stress disorder. Patients frequently admitted that these memories as extremely vivid and real. Some patients tried to block recall of these traumatic memories and accept them by making them intellectually meaningful (Scragg et al. 2001). Incidental events such as viewing a hospital, future episodes of seeking treatment at hospitals and watching television programs, may cause them to become overwhelmed by the feelings and physiological arousal that can result in depression. Chan (1990) reported similar findings. However, all memories of ICU may not be negative and stressful. Rattray et al (2004) interviewed 109 patients and found 80% of them rating their care as good, over 50% of the respondents reporting that they felt safe and 40% never felt scared while being treated in ICU. Scragg (2001) found that the presence of a caring relationship either by the nurses or family members can have a positive impact and decrease the level of fear whilst in ICU.

As most studies in literature series were undertaken in the West, there is limited local data on patients' recollection whilst being mechanically ventilation in ICU. The objective of this study was to investigate recollections of artificially ventilated patients at ICU of HUKM. This study will

add on to the body of evidence regarding recollection expressed by mechanically ventilated and the actual level of frustration among our local patients whom by far, are different in demographic and socio-economic entities in comparison to the West.

MATERIALS AND METHODS

A cross sectional study was conducted in ICU of HUKM from January to March 2006. Data collection was done using a structured "Intensive Care Experience Questionnaire" (ICEQ) adopted and modified from Rattray et al (2004) which consisted of four domains: awareness of surrounding; frightening experiences, recall of experience and satisfaction with nursing care. There were three sections in the data collection form; section A: comprised of 30 questions using Likert scale 0-2 (0-never, 1- some of the time and 2- all the time) to measure what patients felt and remember about their experiences whilst during their ICU stay; section B: 31 questions using Likert scale 0-3 (0 - not applicable, 1 - not stressful, 2 - a little stressful and 3 - very stressful) to measure patients recollection of stress experienced during intubation and on mechanical ventilation in ICU. Section C consisted of demographic data of the patients including patient's age, gender, level of education, marital status, occupation, monthly income and length of stay in ICU.

Inclusion criteria were: age more than 21 years, ability to orientate to person, place, time and situation at time of data collection, competency and ability to sign an informed consent and requirement of intubation and mechanical ventilation for at least 18 hours with extubation within the previous 72 hours at time of interview. A convenience sample of 45 patients from ICU who met the inclusion criteria were recruited for this study. These time frames were chosen to provide a sufficient amount of time required for the patients to recall their experience while being mechanically ventilated after extubation. Patients were excluded if they had: neurological complications; psychiatric problems, tracheostomy and heamo-dynamic instability at time of data collection. The study was approved by the ethics committee of Universiti Kebangsaan Malaysia, Faculty of Medicine (FF-199-2005) and permission granted from the Director of Hospital Universiti Kebangsaan Malaysia. An illustration of the attributes of this study, as a conceptual framework is shown in figure 1.

RESULTS

Demographic data of respondents are presented in table 1. From the findings of 45 participants, 20 respondents (44%) were aware of their surrounding while 25 respondents (56%) were unaware of their surroundings. However, 31 respondents (69%) reported frightening experiences. In the recall of experience domain, 39 (87%) respondents had actual recall, whereas 6 (13%) respondents were unable to recall their experiences. A high proportion: 43 respondents (96%) reported satisfaction with the delivery of nursing care and only 2 respondents were unsatisfied (figure 2). There was positive correlation between awareness of surrounding and their abilities to recall their experiences ($p<0.05$). Patients' awareness of surrounding shows the strongest statistical significance; a unique contribution to the prediction of their abilities to recall their experiences with beta coefficient value 0.353 and $p<0.05$.

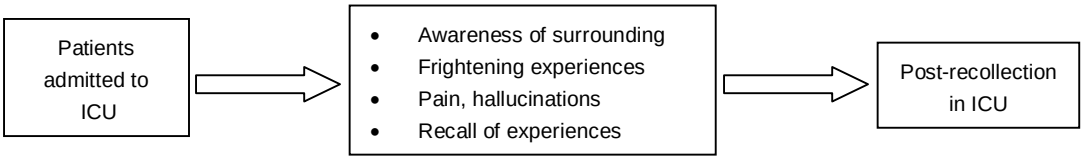

Figure 1: Conceptual framework

Table 1 : Demographic data

Variables	Respondent (%)
Age	
⊆ 50 years old	19(43%)
⊇ 51 years old	26(57%)
Gender	
Male	26(57%)
Female	19(43%)
Level of education	
Lower high school	24(53%)
Tertiary	21(47%)
Marital status	
Single	10(22%)
Married	35(78%)
Occupation	
Unemployed	11(24%)
Employed	34(76%)
Monthly income	
⊆ RM 1000	26(57%)
⊇ RM 1001	19(43%)
Length of stay	
⊆ 1 week	22(49%)
⊇ 1 week	23(61%)

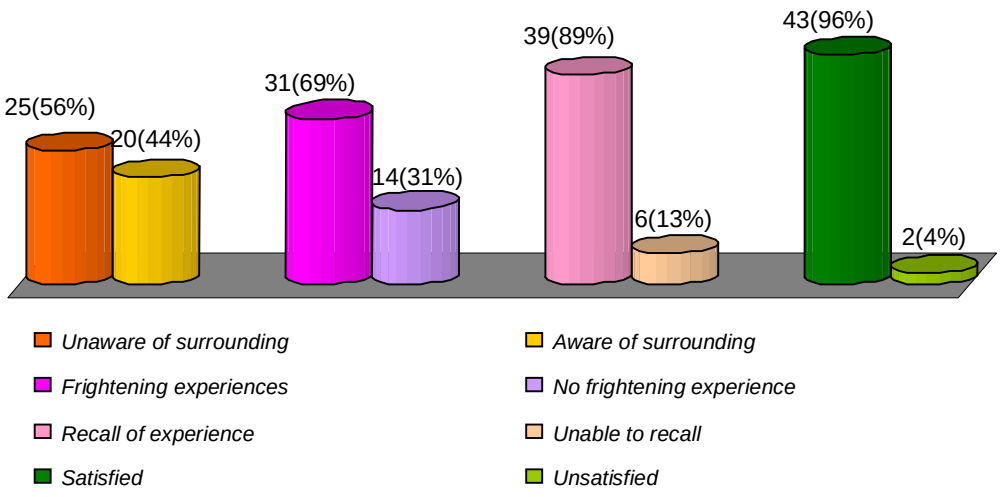

Figure 2 :Respondents' recollection of experience in the ICU

Table 2 : Correlation between awareness of surrounding, frightening experience, recall of experiences and satisfaction with nursing care with respondents' experiences in the ICU

Variables	r	Sig. (2 tailed)
Awareness of their surrounding	0.300*	0.045*
Ability to recall of their experiences		
Ability to recall frightening experience	-0.611	0.291
Satisfaction with nursing care		

* Correlation is significant at the 0.05 level (2-tailed)

Table 3 : Multiple linear regressions to predict patients' abilities to recollections of their experiences in the ICU

Variables	(ß) Standardized coefficient	P value
Awareness of surrounding	0.353	0.035*
Frightening experience	0.008	0.958
Recall of experiences	0.092	0.575
Satisfaction with nursing care	0.115	0.474

DISCUSSION

This study revealed that mechanically ventilated patients were aware of their surrounding during ICU stay and able to recall their frightening experiences. They were aware of what was happening to them though they were sedated. These factors are similar to those identified by other studies (Roberts et al., 2007; Scragg et al., 2001). To protect patients from these harmful factual memories during their ICU stay, nurses should be aware of the need to communicate adequately and respect patients' rights to dignity and information even though they were on sedation and relaxant. However, Armondo et al (2002) reported that severely ill patients on prolonged mechanical ventilation are likely to be paralyzed and heavily sedated, may suffer from short term loss of memory and may not be fully aware of their ICU surrounding. However, more severely ill patients tend to have poorer recall of their ICU stay.

More importantly, nurses should be more diligent and committed in delivering nursing care to ventilated patients in ICU. Nurses may be able to reduce the stress associated with endotracheal tube suctioning by providing prior explanations to patients of what they may expect and be gentle during the procedure. They can identify inadequate levels of analgesia and sedation by assessing patients' reactions to the endotracheal tube suctioning. The role of nurses are to help monitor the patients while the anesthetists are responsible for the other management of the patients such as prescribing anxiolytic drugs to reduce patients' anxiety, analgesics to reduce pain and also the use of sedatives to increase comfort and improve sleep. A better understanding of the recollections of traumatic events and stressful experiences reported by patients could allow nurses to better anticipate in patient care and improve their quality of life during ICU stay (Strahan et al. 2003). A large number of patients have predicaments in verifying their perceptions and cope with fears, anxiety and stress through verbal communication (Scragg et al. 2001).

This study adds new information about

the relationship of satisfaction between mechanically ventilated patients and the nurses. Our findings further support previous studies by Johnson & Sexton (1990), who stated that, nurse-patient relationship in ICU is deemed to have the power of reducing patients' frustration and dissatisfaction. However, when ventilated ICU patients' feelings are unmet due to the inability to communicate adequately with nurses, these could aggravate anger, discomfort and anxiety. This will subsequently lead to a prolong rehabilitation and poor recovery that exacerbate physical and psychological disability (Rattray et al., 2004). Several studies also revealed similar findings on patient's feelings and experiences related to anger, discomfort and anxiety when they are unable to communicate effectively (Bergborn-Engberg et al., 1998). According to Roberts et al. (2007), some patients may be unwilling to talk about their bizarre and unreal experiences for fear that others may judge them to have mental instability.

It was found in this study that patients' awareness of surrounding was the strongest factor statistically and was a unique contribution to the prediction of their abilities to recall their experiences. However, Strahan et al (2003) reported that frightening memories, for example, hallucination or nightmares are potential threats to patients' psychological recovery. Patients discharged from ICU needs to have an opportunity to discuss their memories and nightmare as a way to overcome the hurdles to recovery. Consequently, patients should be explored about their unpleasant memories to prevent residual psychological distress, which can result in poor mental health (Jones et al., 2003).

CONCLUSION

The finding of this study permits nurses to see the problems of mechanically ventilated patients through reports of unpleasant recollections by the patients themselves. Patients reported frustrations in their attempts to make their needs known. Although they are on sedation and relaxant, they are aware of all unpleasant events occurring in the ICU. This information offers insight into the needs to alleviate patients' unpleasant experiences and what the nurses can do to help mechanically ventilated patients.

ACKNOWLEDGEMENTS

I sincerely would like to acknowledge the support of many people especially Associate Prof. Choy Yin Choy and Dr. Noorfaizan Saaidin for their contribution in this study. My special thanks go to intensive care staff and patients of HUKM for granting permission to conduct this study.

REFERENCES

Armondo, R., Lakshmipathi, C., Carl, S., Aaron, M., Richard, S., Steven, B., & Kelly. I. 2002. Patient's Recollections of Stressful Experiences while Receiving Prolonged Mechanical Ventilation in an ICU. *Critical Care Medicine*. **30**(4): 746-752.

Bergborn-Engberg, I., & Haljamae, F. 1998. A Retrospective Study of Patient's Recall of Respiratory Treatment: Nursing Care Factors and Feelings of Security/Insecurity. *Intensive Care Nursing.* **4**: 95-101.

Chan, Y.C. 1990. Psychological and Social Support System in Intensive and Critical Care. *Intensive Care Nursing*. **6**: 59-66.

Cornock, M.A. 1998. Stress and the Intensive Care Patient: Perception of Patients and Nurses. *Journal of Advanced Nursing*. **27**(3): 518-527.

Happ, M.B. 2001. Communicating with Mechanically Ventilated Patients: State of the Science. *AACN Clinical Issue*. **12**: 247-258.

Johnson, M.M., & Sexton, D.L. 1990. Distress during Mechanical Ventilations: Patients' Perception. *Critical Care Nurse.* **10**: 48-57.

Jones, C., Skirrow, P.M.P., Griffiths, R., Humphris, G., Ingleby, S., Eddleston, J., Waldman, C., & Gager, M. 2003. Rehabilitation after Critical Illness: A Randomized, Controlled Trail. *Journal of Critical Care Medicine*. **31**(10): 2456-2461.

Patak, L., Gawlinski, A., Ng, F.I., & Doering, L. 2004. Patients Reports of Health Care Practitioner Intervention that Are Related to Communication during Mechanical Ventilation. *Journal of Acute and Critical Care*. **33**(5): 308-320.

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

Roberts, B, & Chaboyer, W. 2004. Patients' Dreams and Unreal Experiences Following Intensive Care Unit Admission. *British association of Critical Care Nurses.* **9**(4): 173-180.

Roberts, B.L., Rickard, C.M., Rajbhandari, D., & Reynolds, P. 2007. Factual Memories of ICU; Recall at Two Years Post Discharge and Comparison with Delirium Status during ICU Admission - A Multicentre Cohort Study. *Journal of Clinical Nursing.* **16**(9): 1669-1677.

Scragg, P., Jones, A., & Fauvel, N. 2001. Psychological Problems Following ICU Treatments. *Journal of the Association of Anesthetists of Great Britain and Ireland.* **56**(1): 9-14.

Stein-Parburg, J, & Mckiney, S. 2000. Patients' Experiences of Being in an Intensive Care Unit: A Select Literature Review. *American Journal Critical Care*. **9**: 20-27.

Strahan, E., McCornick, J., Uphrichard, E., Nixon, S, & Lavery, G. 2003. Immediate Follow-Up After ICU Discharge: Establishment of a Service and Initial Experiences. *Nursing Clinical Care.* **8**(2): 49-54.