CHAPTER 2

Literature Review

This part present a literature related to intensive care experiences among ICU survivors as follows:

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Intensive Care Unit (ICU)

There were many critically ill patients that need a very special care and treatment which can help them to regain their health status or might prolong their lifespan, and intensive care unit was designed to meet this requirement (Sutter Health CPMC, 2005). Intensive care unit was the best place for patient who had life threatening condition which needs close monitoring and life support from the advanced devices in order to maintain the normal or close to normal body function (Konkami & Oakley, 2012; Malaysia's Health, 2005; NHS, 2012). This special unit was designed to manage the critically ill patients from various reasons (Granja, 2004). Not just providing the up to date devices to help in the better service and treatment, but ICU also provides the health care staffs whose were specialized in critical care area to deliver the best care to the patients (Konkami & Oakley, 2012; Sutter Health CPMC, 2005).

Definition of ICU

Intensive care unit was defined as a specialized ward, where health care providers with specialized skills give treatment to the patient, who facing a life threatening condition because of certain illnesses or injuries (Malaysia's Health, 2005; Patak et al., 2004).

The ICU was the place that provide the advanced medical care services to patients who are currently or at risk of developing a life threatening condition because of any reasons (Konkami & Oakley, 2012).

An ICU also known as an unfamiliar place, which according to the patient, the admission happen in sudden or unexpected and also bring up higher risk of mortality among the patients (Rovatti et al., 2012).

Intensive care unit was a unit in the hospital which concentrated with special equipments and specially trained health care personnel to handle critically ill patients whose required immediate and continuous attention (Miller-Keane & O'Toole, 2003).

This unit delivered a special care that normally cannot be seen in general wards, in term of advance technologies (24-hour monitoring devices, controllable beds,

mechanical ventilator), medications (certain patient receive more than one inotrope or vasodilator in the same time with other drugs), and also ratio staff per patient (1:1 or 1:2).

In conclusion, ICU in this study can be simply put as the specialized ward in the hospital where critically ill patients were cared by well trained staffs, facilitated with advanced equipments and treatments, up to date machines and monitors. In this study, ICUs were the unit from three tertiary level government hospitals, and placed an adult patients from various discipline includes general, medical, and surgical.

Characteristics of ICU

In general, ICUs varies from hospital to hospital depends on structure, services, level of the hospital, expertise level, and also the organization (Haupt et al., 2003). However, ICU in all around the world generally said as a dynamic, unpredictable environment where patients faced with varies of outcome. In state of Malaysia, it consists of almost 143 government hospitals in any level which received the budget or subsidy to run the hospital from the government, also known as non-profit organizations, and the policies were guided by the Ministry of Health (Chee & Barraclough, 2007; Malaysian Society of Intensive Care et al., 2012); and has a total of 48 ICUs (Malaysia's Health, 2005).

Government hospitals have three levels; primary, secondary, and tertiary level; and the level of care in critical care unit also can be divided into three; Level 1 –Provide all-inclusive care for a broad range of disorder that need intensive care, with the help from advanced equipments., physicians and nurses who attending specialize course for critical care, having support from other teams/services (pharmacy, physiotherapy, nutritional, social services), and most of this level of care centered in hospital setting that aiming for academic mission (teaching hospital); Level 2 – Have an ability to provide all-inclusive care but may not have enough resource for specific population or cases (e.g., cardiothoracic, combine therapy for cancerous cases, burn unit), transferring patient to Level 1 care hospital might put under consideration for certain cases, and this level may or may not have academical purpose; Level 3 – This level of care provide the initial to stabilize critically ill patient, have limitation in providing all-inclusive care,

required transferring policies to transfer to other hospitals, and have limited number of admission (Haupt et al., 2003).

However, for this study, the selected hospitals were from tertiary level hospital which provided Level 1 of critical care services. Furthermore, in the context of ICU in Malaysia, it consists of three levels; Level 1 ICU – available in district hospital without anaesthetist, same par with acute care wards, capable in providing close monitoring basic intensive care including oxygen therapy and inotropic support, no invasive mechanical ventilation, and ratio nurse per patient was 1:2 or 1:3; Level 2 ICU – available in district hospital with anaesthetist, provide intensive care and mechanical ventilation, ratio nurse per patient was 1:1 or 1:2; Level 3 ICU – available in all state hospital with intensivist or anaesthetist with special interest in intensive care, provide multiple organ support services including mechanical ventilation and renal replacement therapy, ration nurse per patient was 1:1 (Malaysia's Health, 2005).

Generally, in larger hospital, and commonly the one that situated in urban area, the ICU can be divided into specialize area including general ICU, pediatric ICU, neonatal ICU, cardio ICU, medical ICU, surgical ICU, and also neurology ICU (Haupt et al., 2003), and the same phenomena can be seen in Malaysia (Malaysian Registry of Intensive Care, 2012).

An ICU offer the current medical services for that country, and commonly the treatment were performed by specialized team consists of consultants, physicians, dietitians, physiotherapist, nurses (Tembo et al., 2012), nurse practitioners, clinical nurse specialist, doctors, social workers, and chaplain (California Pacific Medical Center, 2014). The critical care staff who worked in the ICU generally have specialize skills gather from attending the specific course for intensive care (Tembo et al., 2012), and the staff from this unit engaged with the sophisticated machines including mechanical ventilator and equipment to run the treatment smoothly (California Pacific Medical Center, 2014; Konkami & Oakley, 2012). Intensive care service in government hospital of Malaysia were in-charged by Department of Anaesthesia and Intensive Care, and the critical care staffs were includes intensivists, anaesthesists, doctors, and nurses (Malaysia's Health, 2005).

In context of Malaysia, the admission rate to the ICU kept increasing year by year, and the number was surprisingly increased from 18907 in 2008 to 33892 in 2012 (Malaysian Registry of Intensive Care, 2012). Most of the hospital consist of at least one ICU, with ratio of nurse per patient are one to one or one to two (California Pacific Medical Center, 2014; Malaysia's Health, 2005). With the specific unit of the ICUs, the admission of the patients was prioritized according to disciplines or the category of the major injury that the patients had at that time.

Indications of ICU Admission

Commonly, the conditions that required admission to the ICU were the patients who need close monitoring especially after surgery either emergency or elective; involved in any accidents that caused major or multiple traumas; because of some critical illnesses; have problem with lung which required ventilator support; problem with severe electrolytes imbalance; and patients with serious infectious cases which need isolation room and close monitoring (California Pacific Medical Center, 2014). In Malaysia, the common cases admitted to the ICU including traumas, multiple organ failure, and also sepsis (Malaysian Registry of Intensive Care, 2012); and the admission to this unit was based on admission policy (Malaysian Society of Intensive Care et al., 2012). In short, the types of admission can be divided into two types; unplanned and planned admission (Ho et al., 2008).

The example of unplanned or emergency admission including direct admission from the emergency department, after cardiac arrest, or involved in major trauma; and planned admission including the cases of transfer in from another ward or operation theatre, deteriorating condition of existing illness which need ventilator support and close monitoring (Ho et al., 2008; Patak et al., 2004). Furthermore, patients whose admitted to the ICU mostly cannot escape from been attached with mechanical ventilator machines with specific setting and were connected with many kinds of life supporting devices (Tembo et al., 2012). Patients were admitted to the ICU because of any reason, which in general, each of them received something in common such as being attached to respiratory devices, 24-hours close monitoring, attached to monitor that shown the vital sign, and any activities were performed by the staff at the bedside.

Nature and Characteristic of Patient in ICU

When someone received an intensive care in ICU, one thought that would be in their mind was the state that differentiates them between life and death. Commonly, patients with critical illness, involved with life threatening conditions, accidents, sepsis, and had an organ failure, end up with receiving treatment in ICU (Malaysian Registry of Intensive Care, 2012). The patients in ICU were surrounded with special equipments and machines to monitor vital signs (California Pacific Medical Center, 2014). The most seen characteristic of patients in ICU received sedation in view to tolerate with the treatment which commonly discomfort and give painful sensation, and mostly were in acute phase of medical conditions or illness (Roberts & Chaboyer, 2004).

In nature, patients in ICU required mechanical ventilator as a source of maintaining normal body function, and was attached with many kind of monitoring devices, and medication lines that needed for drugs infusion (Konkami & Oakley, 2012; NHS, 2012). The patients whose need an ICU back up commonly admitted through two routes of admission; planned admission which prior to the planned surgery and patient need close monitoring after post-operation, from the other wards because of patient's condition deteriorating and required ICU support; unplanned admission or emergency admission which admitted immediately after unplanned surgery or directly from the emergency department; (Jalleh, Mukherjee, & Krishnan, 1987; Patak et al., 2004).

Facing with life threatening condition from either critical illnesses or injury put the patients under pressure (Hatchett, Langley, & Schmollgruber, 2010). How they cope with the pressure might differ from one to another, depends on how they perceived and interpret the events. Hence, it will lead them to experience either positive or negative experience based on what criteria that been assess at that time. Generally, ICU's patient was restricted on the beds (Tembo et al., 2012), attached with mechanical ventilator and lines that used for drugs infusion, 24-hours engaged with vital sign monitoring devices, most of the patient received sedation during their stay, and was in dependence state that required help from the medical staffs in ICU.

Intensive Care Unit Survivors

Intensive care unit survivors were the patients that discharged from ICU after certain period of time. The patient were discharged from ICU to step down ward or general wards after the specific discharge criteria appointed by ICU policy were met specifically depending on the hospital.

Criteria for Discharge from ICU

Commonly, patient in ICU must meet certain criteria before able to discharged from the ICU, and the discharged criteria as listed; conscious, good airway, stable for several hours after post extubation, look comfortable when breathing, stable blood pressure and urine output, hemoglobin more than 6g/dL, bowel sound presented, no fever, able to sitting up, and seem not confused (World Health Organization, 2015). However, there also another thing to consider about transferring patient to step down unit; patient will transfer out when the medical conditions improving and moving towards recovery phase and can continue the treatment in step down unit, because ICU was designed to apply the service to the most critically ill patients (California Pacific Medical Center, 2014).

In Malaysia, ICU survivors were the patients whose stable for more than 24-hours in step down unit or general wards after been transfer out from ICU, and were discharged after certain criteria for discharge were met; haemodynamically stable, patent airway and able to breathe normally, oxygen requirement not more than 60%, no longer need inotropic or vasopressor support or require low dose, neurologically stable, and showed improvement from critical problems (Malaysian Society of Intensive Care et al., 2012). The discharge plan from ICU in Malaysia also based on discharge policy (Malaysian Society of Intensive Care et al., 2012). Patients were allowed to discharge after stabilized and show improvement from the exist problem, and the permission of discharge are decided by the physicians and intensivist.

Definition of ICU Survivors

Intensive care unit survivors were the patients who able to discharged from the ICU after a period of time, and were classified as stable enough to continue the treatment in the step down wards (Granberg, Engberg, & Lundberg, 1998).

After stabilize from their threatening condition, patient was transfer out from the ICU to the step down unit or general wards. The patients that managed to discharge out from the ICU and stable more than 24-hours were known as ICU survivors (Malaysian Society of Intensive Care et al., 2012).

In conclusion, ICU survivors were the adults whose stable from critical condition at least 24-hours in step down units or general wards after move out from the intensive care unit.

Characteristic of ICU Survivors

After been able to discharge from the ICU, the survivors might face many kind of challenged especially the challenge for fully recovered from the illnesses (Balas, n.d.). Commonly, ICU survivors suffered from the long term consequences such as cognitive impairment, prolonged physical or functional weakness (Jackson et al., 2012). Other challenge faced by the survivors includes physical exhausted, emotional instability, psychological disorder, spiritual, cognitive and also the financial problem (Balas, n.d.). In order to return to normal or close to normal functional status, the ICU survivors had to face the long way with many kind of challenge, hence, it depends on their determination, effort, willingness to sacrifice their time, and ability to seek and get the resources to help them (Ariyo & Swaboda, 2013). Tembo et al. (2012) describe that ICU survivors generally being in indeterminate state where they might be confused with their own identity and uncertain about the condition and life after discharged. However, the outcomes of the patients after discharged from ICU also depend on their spirit or enthusiasm to overcome the unwanted consequences.

Intensive Care Experiences

Received a sophisticated treatment in ICU caused patients faced with many sort of experience which might perceived as either positive or negative. Some memories in ICU were perceived as good memory, but some of it was not. Suddenly become ill and required a treatment in the most crucial ward put patients under uncomfortable situation and most of the patients claimed felt pain, fear, and think the possibility to death (Granberg et al., 1998). The examples of causes includes physical, psychological, social, spiritual (Zeilani& Seymour, 2010), and cultural (Merilainen, Kyngas, & Ala-Kokko, 2010). However, despite of having negative feelings, there were also factors that help patients to feel at ease such as getting an information about the environment, able to control or to speak up their own needs, have some hope when receiving treatment, and also gained trust from the health care providers (Hupcey, 2000; Merilainen et al., 2010). In brief, this study aimed to look at how the ICU survivors described their experience, since the patients will keep continue to have vague experiences related to the mutual events.

Definition of Intensive Care Experience

Intensive care unit placing a collection of the most critical patients in the hospital and come from various disciplines (Tomlin, 1977). The memories gained during their stay were an experience that can be classified as positive or negative depends on how the individual perceived it. Intensive care experience were the recollection of memory among the ICU survivors and it was a condition or memory that patients just aware in their late stay in ICU or after discharged to the ward (Granja et al., 2005; Van de Leur et al., 2004).

Intensive care experience was defined by Rattray et al. (2004) as a memory of patients whose had been treated in the ICU and was interpreted individually from the views concerning the awareness of the phenomena, which can be seen through four domains: awareness of surrounding, frightening experience, recall of experience, and satisfaction of care. Furthermore, intensive care experience was an experience that perceived by the patient, and the experience somehow was an effect of toleration with the ICU environment, which commonly perceived as bizarre and unfriendly, and was

made up from: the physical environment like noises and bright light which associated with delirium and sleep disturbance; social environment like felt abandoned because of were isolated from family members; symbolic environment such as routine procedures, protocol and guidelines, and also rules in ICU (Merilainen et al., 2010).

In conclusion, intensive care experiences was any retained memory of been in ICU either positive or negative gained by adult patients who were been treated and discharged from the ICUs. The intensive care experienced for this study thoroughly look upon four domains: awareness of surrounding, frightening experience, recall of experience, and satisfaction of care; and measured by using Intensive Care Experience Questionnaire (ICEQ) developed by Rattray et al. (2004).

Factors Related to Intensive Care Experience

Experience in the ICU commonly expressed by the patient as stressful events, and the example of stress event in ICU was pain because of endotracheal suctioning, delirium associated with psychotic events, and difficulty in breathing that required intubation (Davydow, Gifford, Desai, Needham, & Bienvenu, 2008). Survivors of critical illness had an association with poorer health outcome and more likely experience anxiety compared to general population (Scragg, Jones, & Fauvel, 2001). There were many factors that influence the intensive care memory among ICU survivors and it varies depends on the patient themselves. The common listed factors including age, sex, requirement for ventilator support, types of admission, length of stay, and receiving sedation or analgesic.

Age. Age less than 50 (31% or 45 patients) tend to experience delusional memories and nightmares, and age was the best predictor of delusional memories among ICU survivors (Ringdal et al., 2006). Furthermore, younger patients more likely had higher score of frightening experience (Rattray et al., 2004).

Sex. One study reported that female patient was more prone to develop PTSD related symptoms; female patient and the patient whose fear about staying in ICU claimed experienced stressful events and able to recall it after discharged (Samuelson, Lundberg, & Fridlund, 2007).

Ventilator support. Attached with mechanical ventilator make patient felt restricted (Tembo et al., 2012; Rotondi et al., 2002) and having endotracheal tube was the most recall moment (Roberts et al., 2007). Patient in ICU can recall the memory from at least 24-hours intubation period (Tembo et al., 2012). Nine percent of 71 patients with ventilator support reported had clear recollection and 32% of 167 claimed no clear memory about ICU; patients whose been ventilated in two days claimed having clear memory compared with ventilated within 7-8 days (Ringdal et al., 2006).

Types of admission. Patients with planned admission after elective surgery reported recall more about factual memories (Roberts et al., 2007; Rotondi et al., 2002). On the other hand, emergency admission reported 71% patients having dream and hallucination because not prepared in term of psychological (Roberts & Chaboyer, 2004). Patient with surgery also reported prone to have delusional memory, about 35% or 32 patients (Ringdal et al., 2006).

Length of stay. About 20% out of 162 patients whose stay less than 24-hours able to recall factual memory (Roberts et al., 2007), on the other hands, patients whose stay more than two days reported experience delusional memory (Ringdal et al., 2006) and 74% out of 31 patients claimed experience dreaming (Roberts & Chaboyer, 2004). In other study by Rundshagen, Schnabel, Wegner, and am Esch (2002), end result shown that in 127 patient who had length of stay more than 24-hours, 9% claimed no memory about ICU, 38% claimed dreaming which divided to 18% had nightmares and 14% with hallucination, 13% had factual memory; length of stay less than 24-hours shown lower percent (8%) of dreaming. High score about awareness of surrounding was associated with short length of stay, in view of less complicated in term of their recovery period (Rattray et al., 2004).

Receiving sedation. Patients who received sedation claimed no clear memory during their stay (Ringdal et al., 2006; Roberts & Chaboyer, 2004). In contrast, patients with sedation able to remember the events perceived as extremely stressful to cope (Samuelson et al., 2007).

Patients faced with one or combination more than one of the factors that lead them to experience various intensive cares during the stay. The factor might give positive or

negative experience depends on the characteristic of the factors and also how patient adapted with the situations.

Impact of ICU Admission on Patients

The intensive care experience can affected or give impact to patient's physical, emotional or psychological, social, and also economic status. Further detail regarding the impact of intensive care experience as below:

Physical impacts. Immediate impact on patient while experiencing negative intensive care was pain related to procedures and treatments (Rotondi et al., 2002; Zeilani & Seymour, 2010), including suctioning via ETT and difficulty in breathing that required intubation (Davydow et al., 2008). While restricted on the bed, patient felt discomfort and restless because unable to make a decision about own treatment and lack of control about visitors (Fredriksen & Ringsberg, 2007; Hupcey, 2000; Patak et al., 2004; Soh et al., 2014). When patient was lying down and happen to see another critically ill patient nearby, it can be a contributing factor to negative experience. Moreover, patient felt uneasy when their daily life activities were done by someone else and more likely their privacy no longer protected (Russell, 1999). The high technology equipments, unfamiliar routines, lightings, and odors from the medication, body fluid or waste product were the listed factors that contributed to undesired physical experience in ICU (Rotondi et al., 2002; Wallen, Chaboyer, Thalib, & Creedy, 2008). The noises from the machines, alarm and also from voices of the staff also contributed to discomfort feeling among the patients (Tomlin, 1977; Granberg et al., 1998). Besides, noise level or unwanted sound play an important role in making the ICU as pleasant or unpleasant place, because even though most of the patients were lying down on the bed and cannot give good response to the verbal commands, they still can hear the sound that come from their environment. However, despite of all listed negative impact, presence of relative shown in decreasing level of fear among patients (Granberg et al., 1998; Hofhuis et al., 2008); presence of staffs help patients for recovery and encouraged their will to survive (Karlsson, Bergborn, & Farsberg, 2012); presence of technology and staffs were associated with the secured feeling (Lof et al., 2008).

In long-term, negative experience give impact on the physical impairment, physical exhausted (Balas, n.d.; Cartwright, 2012; Hopkin, 2013; Jackson et al., 2012; Tembo et al., 2012), and pain which lead to fear and felt loss of control (Bell, 2013). About 73% of ICU survivors reported felt pain even though at 12-month post discharged from the ICU, 44% claimed anxiety, had mobility problem (Griffiths et al., 2013). Physical function and social behavior among patient were improved within 6-month after discharged, but 69% of patient still had restricted when performing daily activities after one year (Van de Schaff, Beelen, Dongelmans, Vroom, & Nollet, 2009). Granja (2004) listed a physical consequences from the intensive care experience to the ICU survivors after discharge from the ICU: weakness of the muscle, weight loss, loss of appetite, painful at the joints, changed of the voice, mobility problem, problem with swallowing (O'neil & McAuley, 2011) due to weakness or problem with laryngeal coordination result from percutaneous tracheostomy (Granja, 2004). As a consequence of physical impairment or weakness, ICU survivors were unable to return to work as what they did in their fine day, and it affected their economic status (Balas, n.d.; Cartwright, 2012; Hopkin, 2013; Jackson et al., 2012). Some of the patients also had to pay a certain amount of money for the admission to the rehabilitation centre in view of they experienced disabilities after discharge from the hospital (Hopkin, 2013; Jackson et al., 2012). Some of the ICU survivors require prolonged and costly rehabilitation for several weeks after discharged and most of them were unable to return to work about one year after hospitalization period because of depression and also posttraumatic stress disorder (PTSD) (Cartwright, 2012). However, in positive way, patients still able to remember about been visited by relative even after 6-18 months discharge from the ICU (Ringdal et al., 2006).

Economic or financial impacts. Intensive care unit survivors felt helpless when they were unable to return to work and experienced financial problem as an effect of their disability (Griffiths et al., 2013). Because of slower to return to work, it give burden to family members and caregivers (O'neil & McAuley, 2011). Not just having a problem with employment, some of the ICU survivors also had to give up their house when the financial problem reached the critical state (Ariyo & Swaboda, 2013). Some of the survivors had to attend the primary care service, rehabilitation centre, or need follow up treatment by community nurse (Griffiths et al., 2013; O'neil & McAuley,

2011), which can give impact to the financial status. Even though the service might not charge the patient, but they still had to consider about many aspects such as transportation, time, and the person who help them to seek for this kind of care. The psychological consequences such as depression, anxiety, PTSD, and deficit of cognitive give impact on rehabilitation period, which in other way influenced the economic status of the ICU survivors (Ariyo & Swoboda, 2013).

Emotional and psychological impacts. Immediate impact about intensive care experiences was panic reaction and it was happen when patients were admitted to a strange place that well known as the place for the critical person as the resident (Granberg et al., 1998). Patients felt anxiety when restricted on bed (Merilainen et al., 2010), felt abandoned and helpless when were left alone in a strange place and surrounded with unfamiliar peoples (Yousefi & Abedi, 2011). Moreover, been in ICU, been attached with ventilator, and having endotracheal tube were the listed events lead to fear and anxiety among patients (Rotondi et al., 2002). Survivors of critical illness had an association with poorer health outcome and more likely experience anxiety compared to general population (Scragg et al.,2001). About 47% from 80 patients reported anxiety and depression (Scragg et al., 2001), hence, this study indicate the important of reducing the stressor in the ICU before it affect patient's health outcomes. Experiences that fall in theme of psychological listed by the patient were: unable to communicate verbally, lack of control to make a choice, and unable to perform the daily life activities (Wenham & Pittard, 2009). Unable to communicate was very hard situation for the patient since they cannot express what they felt and tell what they need (Russell, 1999; Rotondi et al., 2002). However, some studies reported that patient also claimed having positive experiences during stay in ICU, including; claimed ICU environment as friendly and reported getting enough sleep (Granja, 2004), 39% of 23 patient reported having good dreams (Roberts & Chaboyer, 2004; Rundshagen et al., 2002), felt safe in ICU (Rattray et al., 2004; Wassenaar, Scoutten, & Schoonhoven, 2013).

In long term impact showed that among 239 patients reported that after 6-18 month discharged from the ICU, 26% patient still remember having nightmares (Ringdal et al., 2006). Delusional memories such as nightmares in combination with

almost no memory of factual events, lead to anxiety and depression, which was after a period of time can be a cause of PTSD development (Jones et al., 2000; O'neil & McAuley, 2011; Ringdal et al., 2006). Critical condition exposes the patients to many kind of stressors and risk for suffering from persistent PTSD, depression, post intensive care syndrome (PICS), and acute stress disorder. PTSD is one of the major risk for individual who were been exposed to the traumatize events or situation (Chen & Koenig, 2006). The onset of PTSD ranged from a few weeks to months (Roberts & Chaboyer, 2004), occurred because of traumatic events that happen in ICU (Bell, 2013; Davydow et al., 2008; Davydow, Zatzick, Hough, & Katon, 2013; Myhren, Ekeberg, Toien, Karlsson, & Stokland, 2010), and it was about 5% - 63% range of prevalence estimates, and was reported extremely high prevalence relatively to other population (Jackson et al., 2007). The stressful and traumatic events experienced in the ICU can lead to posttraumatic stress reaction if not prevented and if support or caring strategies were not performed from the beginning of admission until care of post discharged from the ICU (Corrigan, Samuelson, Fridlund, & Thome, 2007; Davydow et al., 2013).

The other consequence that happen after ICU experience was PICS which causes functional, cognitive and psychological problem such as depression, anxiety, sleep disturbance, or PTSD (Davidson, Harvey, Schuller, & Black, n.d; Davydow et al., 2013; Rattray et al., 2004; Myhren et al., 2010). Even though after discharged, some of the patients still having problem in terms of physical, psychological and social function (Davidson et al., n.d) which then lead to financial burden because of need for another follow up at the intensive care clinic (Cuthbertson et al., 2007). In other example from the previous study revealed the prevalence of PTSD was 16% after three month discharged from the ICU and was 15% after twelve month discharged from the ICU (Davydow et al., 2013). PTSD resulting in low health related quality of life as a long-term effect if not properly cured (Davydow et al., 2008). Somehow, post ICU consequences were a derived problem from negative experienced, and may happen for an undetermined time after discharged from the ICU. As conclusion, an early identification and early prevention of risk factors contributed to PTSD, PICS, and depression can enhance long-term of health outcomes (Davydow et al., 2013). Other factor that contributes to the consequences after ICU experienced was lack of coping strategies used by the ICU survivors (Clinical Trial, 2014).

Social health impacts. Factors that contribute to social isolation were premorbid functional status, and suffering from late effect from the illnesses which depends on the severity and duration of the illness (Hopkin, 2013). Somehow, the impact to the physical, psychological, and financial influenced the development of a personality changes, anger, sleeping disorder, and also sadness (Cartwright, 2012), which also affected the social health status of the survivors. Most of the patients who unable to return to work were taken care by their family members (Griffiths et al., 2013). The patients might think they give a burden to the family members (Granja, 2004), which lead to feeling guilty. Some of the patients whose having difficulty in speech and swallowing, sleeping disorder, and fatigue after discharged from the ICU, also having a problem with their social life and also affect their daily life activities (Ariyo & Swoboda, 2013). The psychological consequences diminished the communication and social interaction among family members and also with other people, and it also destroys the family dynamic such as changed of the role especially when the ICU survivor was the head of the family (Ariyo & Swoboda, 2013). It can be said that, intensive care experience causing low quality of life toward patients after discharge from the hospital (O'neil & McAuley, 2011).

Received the treatment in the ICU generally able to save patient's life but it may left patient with deep psychological scars and other consequences (Scragg et al., 2001). Hence, this study address the ICU experienced so that the result can be used as one of the supportive data for prevention purpose of late consequences from negative ICU experienced. In fact, patients described experiencing sort of experienced resulting in their feeling of vulnerability during ICU stay. Majority of patients generated the experiences in negative way but some patients are not. For an example, experienced having lines and tubes in the body during ICU stay was claimed as stressful (Engstrom et al., 2012) but to hear or knowing someone was around make the patient felt relieved.

Four Domains of Intensive Care Experiences

The experienced face in the ICU can be in any form and depends on how the patients adapt with it. Intensive care experiences had an association with negative emotional outcomes including anxiety, depression, and post-traumatic stress among patients after discharge from the ICU (Rattray, Johnston, & Wildsmith, 2005).

Somehow the experience might blended between positive and negative in certain ways or domains such as how they perceived their awareness of surrounding; how they recall the experience; were they satisfy with the care; and what are the frightening experience facing by them (Rattray et al., 2004). The further elaboration about these four domains was stated as below:

Awareness of surrounding. First domain of intensive care experience was awareness of surrounding. It was best described as how patients aware about what happen around them. The awareness can be patient's own self, relationship with other people, and also the awareness with environment such as room, equipments, machines, and so on (Fredriksen & Ringsberg, 2007). Many people seen ICU as a place surrounded by up to date machines and the ICU's patients invaded by many kind of tubes. Awareness was defined as ability to perceive, to feel, or to be conscious about events, objects, thought, emotions, or sensory patterns (Editors of the American Heritage Dictionaries, 2011); awareness of surrounding was defined as human perception and cognitive reaction to a condition or events. Components in this domain were; aware of people, recognize the presence of relative, feeling safe, oriented with place, aware with own condition, able to let people know own needs, recollection about ICU, and felt in control (Rattray et al., 2004).

Rochat (2003) mentioned that there were five level of awareness which consists of level 1, differentiation; level 2, situation; level 3, identification; level 4, permanence; and level 5, self-consciousness. However, the awareness depends on how the individual differentiate the sources in their surrounding can either affect their life or not; then, how they thoroughly view the situations and events; how they identify the events; how they process it, can either give permanent effect or not; lastly, how they develop self-conscious in order to overcome the events in their surroundings. Adult adapted with the self-awareness by control the undesirable slippage from one level to another level.

Moreover, individual awareness towards their surroundings fluctuated depends on the experience qualities. Some patients accepted their current condition and try to cope with it with expectation that they will pass the disease or hard situation over time (Arabi & Tabvkol, 2009). Awareness about the surrounding which can cause the vulnerable feeling for patient when it were related to their body, relationship with the staff, room,

equipment, procedures, light and noise, medication, and also the situation (Fredriksen & Ringsberg, 2007). Interviewed among 19 ICU survivor whose been ventilated and stay in ICU at least 36-hours, claimed that after weaning of from sedation, they aware about the presence of next kin (Granberg et al., 1998). Moreover, the result from the awareness of surrounding can be seen in either positive or negative effect to the patient.

Positive result of awareness. Patient who had high awareness towards their surroundings can overcome fear during their stay in ICU (Granberg et al., 1998; Hofhuis et al., 2008). High awareness among patient help them build strong will to survive and recover from the illness (Karlsson et al., 2012), and it occurred when patient trusted the staffs (Lof et al., 2008). Ho et al. (2008) revealed that 44% of 45 ICU's patients were aware of the surrounding events and able to recall back the experiences even though they were in sedative state.

Negative result of awareness. Somehow, patient tend to develop depression because their surrounding make them faced such experience, and in ICU the causes of depression can come from frequent nursing procedures, inappropriate level of noises, surrounded with unfamiliar faces, technologies or unfamiliar machines, and also bright light (Tomlin, 1977). Other study stated that, most of the time, patients in ICU was surrounded with excessive lighting and sound (Granberg et al., 1998) that come from the machines and monitors, health care provider's voices, and voice from other patients and relatives. Trauma that experienced by the patients can be intrusive memories or vivid image that happen when patient loses contact with the surrounding (Peris et al., 2011). When interviewed, patient claimed not remember or not know what happen around them, which make patient loss sense of control (Tembo et al., 2012). Positive result: Trauma or stressor that come from the treatment performed in the ICU cannot simply be removed, but the staff can minimize the impact by helping patient optimize the safety and comfort feeling (Roberts et al., 2007), so that it may help patient to be more alert or aware about what was happened.

Excessive noises in ICU environment were unpleasant auditory stimulus for the patient especially in ICU setting which most of the patient were restricted on the bed. According to World Health Organization regarding noise level that suitable in ICU, maximally 35A-weighted decibel (dBA), hence it was important to ensure that noise

level do not exceed 45dBA (Konkani, 2013). In average, noise level that permitted in ICU ranged from 60-70dBA, which in comparison, 40dBA was equal to the sound of soft whisper in the library (Wenham & Pittard, 2009). Awareness of surrounding take a part in determine how the patients in ICU will faced the challenge during their stay, and somehow it become one of the bench mark that differentiate one patient to the others. In the other words, ability to develop awareness especially about what has happened in their surrounding can help patient to stay focus and gain full conscious in order to adapt with any kind of situations.

Frightening experience. Second domain of intensive care experience was frightening experiences which can emit discomfort feeling to the patients depending on how they experience and interpret the events during the stay. It occurred because of many factors that result in giving terrify feeling and was defined as shocking, alarming, fearsome (Editors of the American Heritage Dictionaries, 2011), and frightening experience can be said as alarming events that give vague feeling among patient who were still remember and engaged with it. The components for this domain were: thought of die, felt helpless, being in pain, felt scared, having bad dreams, and saw strange things (Rattray et al., 2004). The experience claimed as scary when patient described it as freezing state between death and life while unconscious (Tembo et al., 2012). Frightening experiences occurred because of pain, unable to communicate, felt getting insufficient air or air hunger, discomfort feeling (Granberg et al., 1998; Samuelson, 2010; Tembo et al., 2012), or fear (Granberg et al., 1998; Russell, 1999). After stay more than three days in the ICU, and being interviewed 12-18 month post discharged, 74% of 31 patients claimed dreaming and described experience hallucination (Roberts & Chaboyer, 2004).

Some studies mentioned that patients in ICU facing an extreme stressor including pain during the intubation and suctioning procedure (Clay, 2013; Davydow et al., 2008; Granja et al., 2005; Samuelson, 2010). Frightening experienced and memories were one of the factors that influenced late recovery, beside physical injury and psychological distress; 26% of 239 claimed having nightmares and 15% reported no memories about staying in ICU (Ringdal et al., 2006). Frightening experience can come from any kind of reason such as: physical causes like pain which can worsen their sleep and rest

pattern; social suffering, patients in ICU felt isolated and lonely since they were stayed away from the family members; spiritual suffering, was something that patient had to encounter to seek for forgiveness and support from the divine, and sometimes patient look at it as a test from the God; and the technology causes, which might be one of the source to save one life, but it also can be a sources for pain, discomfort, also fear while stay in ICU (Zeilani & Seymour, 2010).

Frightening experiences among the patient give stress feeling which ranged from moderate to maximum, and the factor that perceived as stress were: inability to control situation, which was claimed as maximum level of stress; intubation via oral or nasal, which claimed as moderate level of stress; other stressors were suctioning, decision to intubation, not getting enough sleep, and auditory disturbance because of noises that come from various sources (Soehren, 1995, as cited in Fredriksen & Ringsberg, 2007). Other study reported that severe pain caused sleep disturbance, fatigue and also weakness (Choi et al., 2013; Zeilani & Seymour, 2010;) among the patients. Most of the researchers find out that ICU survivors remembered they had a nightmare during ICU stay (Clay, 2013; Granja et al., 2005; Hofhuis et al., 2008; Lof, Berggren, & Ahlstrom, 2006).

Some of the patients with no self-control think that sleep was equivalent to dead which lead them experienced less rest and sleep disorder (Arabi & Tabvkol, 2009). Loss of self-control was perceived as a threat by the patients, which mostly reported as feeling of fear (Fredriksen & Ringsberg, 2007). This study did support the previous study stated patients claimed afraid to go to sleep because fear of not going to wake up again, or wake up with air hunger (Tomlin, 1977). Experience after not being able to get enough sleep was a side effect from discomfort feeling from procedure such as suctioning, the voices or procedures that performed to the other patients, anxiety, uncomfortable mattress, and fear of death after fall sleep (Granberg et al., 1998). Another study stated that insomnia was a normal body reaction when facing with unwanted or higher level of noise (Fredriksen & Ringsberg, 2007).

Research finding revealed that the respondents in the study also experience tiredness as an effect from sleep disturbances (Granberg et al., 1998; Strahan & Brown, 2005). Sleeping disorder or nightmares were recalled easily and most people felt that it

is realistic (Samuelson, 2011). In the other words, patients cannot differentiate the experience if it was a dream or happened in reality. Keep lying on the bed gives a different perception or view of the room compared with view when standing upright, and it caused patient felt helpless since having physical limitation, hence, lying position limit the opportunities to perform normal body activities (Fredriksen & Ringsberg, 2007). Furthermore, these bad experiences can cause patients to have psychological problem even after discharged from the ICU.

The other factor contribute to the frightening experience was communication, which known as something important for human and can be said as one of the core values in someone's life. However, for the patients who were intubated in ICU, this core value cannot be performed in normal way. About 62% patients who were unable to communicate their needs during the ICU stay, claimed that it was one of the high level of frustration, and one of alleviation factors was health care providers (Patak et al., 2004). Hofhuis et al. (2008) found that 11% of patients had psychological problem including insomnia, fear, bad memory, hallucination and depression after hospital discharge. Support with other findings stated that most of the patients demonstrated the impact from the illness such as pain, fatigue, and distress (Adamson et al., 2004), which followed even after they were transferred out from the ICU.

In addition, study by Van de Leur et al. (2004) revealed that 54% of patients reported discomfort feeling, which leads to serious problem, and the causes were: medical activities performed by the health care providers, hallucinations, insertion of endotracheal tube, suctioning, and also the existence of endotracheal tube. Rotondi et al. (2002) add more about what patient claimed as bothersome events in moderate to maximum including pain, fear, anxiety, insomnia, feeling tense, loss of self-control, loneliness, nightmares, and also having hard time to communicate with others. Briefly, it can be said that frightening experience give vulnerable feeling towards the patients in ICU. It was a normal response to become afraid or frighten when our normal activities cannot be performed and we were placed in an unfamiliar place. However, it still depends on how the individual cope, adapt, and overcome the situation.

Recall of experience. The third domain of intensive care experience was recall of experience. It was about the retrieved recollection or memory either positive or negative among ICU survivors. The component in this domain were: memory about day or night, patient's wish to remember and to know what exactly happen to them, blurring of memory, and the sleep pattern (Rattray et al., 2004). Most of the patients cannot escape from the intense moment that came from the procedures, treatment at the bedside, or other activities in the ICU (Granberg et al., 1998). Hence, the recall of experience varies from one to another and had an association with activities in the ICU.

One of qualitative study exposed that samples cannot recall much about their experiences during ICU stay (Adamson et al., 2004). It was supported by other study that mentioned half of the patients only had fragmentary recollection during ICU stay (Hofhuis et al., 2008). It may be because the sample was interviewed after six months of discharge from ICU, which can affect their recollection of memory. One over third patient in one of qualitative study reported that they remembered the factual memories especially memory related to endotracheal tube either suctioning or removal (Roberts et al., 2007). Patient happen to have unreal experience that defined as memory that gain through visual or auditory which happen in condition either awake or sleep (Granberg et al., 1999, as cited in Roberts & Chaboyer, 2004). Previous study found that from 250 samples, 81% remembered about their stay, 71% stated about their unpleasant experienced and 59% mentioned otherwise (Samuelson, 2011). According to Lof et al. (2008), patients' medical condition, pharmacological agents, age and sex will affect the memory during the stay.

Recall of positive experience. Patients claimed having pleasant experienced which include appreciation of the care, feeling safe, and presence of relatives (Hofhuis et al., 2008). This study supported previous study which stated that patients recalled the present of their relatives and this situation makes them calmer (Granberg et al., 1998). Thirty eight percent of patients claimed cannot remember any moment in ICU, but the rest able to recall it (Granja et al., 2005). Comparatively, finding by Agard, Egerod, Tonnesen, and Lomborg (2012) stated that the ICU survivors were not worried about their traumatic experiences but more concerned about other aspects of getting well.

Recall of negative experience. Soh et al. (2014) revealed that 64.5% of ICU survivors able to recall physical and psychological effects, and listed five most stressful experiences in ICU: suctioning through endotracheal tube, restricted on bed, general discomfort, ventilator dependence, and needle puncture. Other study found that two over third from 150 patients remember been in ICU and remember most stressful moment was associated with endotracheal tube including suctioning, intubation and also extubation (Rotondi et al., 2002). One study stated recall of delusional memories was reported as one source of distress, 62% patient had nightmares, 48% claimed bad dreams, and 30% patient clearly recalled the whole thing during their stay in ICU (Ringdal et al., 2006). ICU survivors after one week discharged from the ICU revealed experience hard situation result from their sickness including feeling instability, fear, tension, and started to recall their experienced when they know the date of admission and date of transfer out from the ICU (Granberg et al., 1998).

Many studies of patient's recall experiences showed different result and the reasons behind it might be the studies were done in a different time frame and the researchers used different approaches to measure the experiences (Lof et al., 2006). Patient might relieved from the physical pain while received the treatment in hospital, but during their stay, mental engagements also take part (Yousefi & Abedi, 2011). Minimal 36 hours ventilated period was enough for this study since the ICU syndrome normally appeared from second to fifth day of admission to the ICU (Kornfeld, 1969, as cited in Granberg et al., 1998). Some of the experience cannot vanish and kept playing in patient's mind even though the condition of the patient was already stable. Patients still can recall the experience if it gives big impact on them psychologically, and it happened because of it give painful and discomfort feeling. However, the memory they able to recall was not static on bad experience only, but sometimes it mixed with pleasant memory which make the experience varies from one to another.

Satisfaction with care. Last domain of intensive care experience was satisfaction with care. Satisfaction can be defined as the extent of an individual's experience compared with their expectations (Pascoe, 1983, as cited in Asadi-Lari, Tamburini, & Gray, 2004), and patients' satisfaction was related to which extend of general health care needs and condition-specific needs met (Asadi-Lari, Tamburini, & Gray, 2004).

The components in this domain include: thought of receive good care, thought of the care could be better, felt being disturbed all the time, and noisy (Rattray et al., 2004). Most of the patients can remember the experience during intensive care including how they react to the services provided and the result become a feedback in improving the practices in nursing profession (Russell, 1999). Patients pointed out that personality and attitude of the staff was one of the reason they describe their experience as pleasant or unpleasant (Samuelson, 2011). Feeling safe was defined as a state in which patient experiences an absence of risk of physical or emotional threat; and patients describe felt safe when they know about been watched by staffs and also the ICU technology (Russell, 1999). The satisfaction of care received by patient can be either positive or negative depends on how patient perceived it.

Positive result of satisfaction with care services. Received a support through good communication and involvement from the staff can help patients go through the stressful situation (Fredriksen & Ringsberg, 2007). Satisfaction when their needs were fulfilled can help patients in overcome fear and anxiety, and a good relationship with the staff can provide safety feeling as well (Fredriksen & Ringsberg, 2007). Furthermore, 93% patients claimed ICU as friendly and calm place during the stay (Granja et al., 2005). It was parallel with the finding mentioned that ICU survivors remembered the pleasant emotion especially related with feeling secure and cared for (Lof et al., 2008). Staffs play an important role in enhancing perception of feeling safe among critically ill patients (Hupcey, 2000; Wassenaar et al., 2013). Patients in ICU experienced instability of emotion; therefore, receiving good care actions from the staffs can help patients to overcome their bad experiences (Granberg et al., 1998), and ensure the safety feeling (Russell, 1999).

It was not only receiving good care from the staff can ease patient's mind, but other factors that can help patients to reduce their level of anxiety including presence of relatives, received some hope for recover, and security against the anxiety (Granberg et al., 1998). Unexpected admission had an association with the psychological stress toward the patients, and nursing care act as a factor that help patients to overcome discomfort feeling and provided security during the ICU stay (Granberg et al., 1998). Presence of staff and next of kin was important to help patients in sense of belonging

and well-being. It was consistent with study stated that patients claimed feeling safe with the staffs which give them sense of security (Engstrom et al., 2012). Other factors that contribute in promoting safety perception among patient in ICU were nursing care, patients' issues, presence of next of kin, and the technologies support (Wassenaar et al., 2013). Experience of receiving good care and attention was one of the pleasant memories for the ICU survivors hence most of the patient claim satisfied with the care when it helps them conveying their needs and emotional (Zeilani & Seymour, 2010). Furthermore, patients stated felt grateful when the staff in charge allowed family members to make a visit even though not in schedule visiting hours (Clay, 2013).

Negative result of satisfaction with care services. Receiving a warm care from the nurses helps patient felt at ease, but somehow they were afraid to get cold care from next shift nurses, and started to felt anxiety (Granberg et al., 1998). Superior behavior from health care providers caused the patient felt anxious about staying in the hospital (Yousefi & Abedi, 2011). Patient claimed experience upsetting moment which associated with bad attitude from the nurses, their privacy not been protected, received pain and discomfort treatment, felt alone, and lack of dignity (Russell, 1999). Being able to express their needs verbally or non-verbally will lessen the anxiety, but if the patients received poor communication with the staff they may experience less than optimal recovery (Russell, 1999).

Patient satisfy with the care if their needs are fulfilled, and generally the needs of ICU patients were; sense of felt safe under care of the staff, get enough information regarding what happen to them time by time, regaining self-control, staff always being around, trusting the staff, and maintain the hope which was believed can enhance their chance to survive (Hupcey, 2000). Hence, intensive care experience been important information to ensure the needs of the patients during their stay can be fulfilled with less impact to their psychology and physiology even after discharge from the ICU. It can be said that, a person's satisfaction referred as feeling of pleasure resulted from services offered by the others. If the services fall out of expectations, the dissatisfaction feeling will occur. Comparatively, if the services matches the expectations, the satisfaction feeling occur.

Measurements for Intensive Care Experience

Measurement tools were the aid that used by researcher in way to evaluate the patients or samples. In general, measurement for the studies varies from what types of study researcher wish to do: either quantitative or qualitative. The types of measurements patterns include scales, indexes, surveys, interviews, and also observations. For measurement of experience during ICU stay, there were many tools can be used. Examples of instruments that can be used to measure intensive care experience were: Recollection questionnaire, ICU memory tool (ICUMT), and intensive care experience questionnaire (ICEQ).

Recollection questionnaire was developed by Granja et al. (2005) and consists of 14 questions related to recollection memories, ICU environment, relationship with staffs, dream, fatigue, and able to perform previous activities. This tool was developed based on the previous studies and personal experience with an ICU follow up clinic. From the 14 items, three from it have more than one sub-item which comes from: question number 11 = 25 sub-items, question number 12 = two sub-items, and question number 13 = five sub-items. The 14 items were come out after make a few changes over time and after succession of qualitative study. However, this tool was not formally assessed for the face and content validity. The reliability of this tool not clearly stated. There was no clear division between delusional and factual experience was made for this tool. This tool had been tested on 10 Portuguese ICU, within 464 patients and the finding showed patient most memorize events: endotracheal tube aspiration 81%, nose tube 75%, family worries 71%, and pain 64% (Granja et al., 2005). This tool had been adapted and used in Malaysian population by Soh et al. (2014). However, this tool was not selected as measurement tool for this study because of: there was an item that not suitable with the target population which asking about the quality of life after 6-month discharged, and the possibility to return to the previous activity.

Intensive care unit memory tool (ICUMT) was developed by Jones et al. (2000) and used to measure the memories of the ICU survivors. It consists of 14 items which mixed between closed ended and open ended questions. In open-ended questions, patient have to describe what they experienced in words; and for the close-ended question, they have to circle the answer. Open-ended questions asking the detail about

patient's feeling and memory regarding: the feeling when someone was trying to do harm, describe the nightmares or hallucination, action taken when having an unexplained feeling or panic, intrusive memory, and frightening nightmares. ICUMT separate memory into three types: delusional, such as nightmare; factual, such as endotracheal suctioning; and affective, such as feeling depress. The validity of this tool was use: internal consistency with alpha coefficient .86, construct validity that predict the relationship between infection and memory loss, test retest reliability was found over 4-month period of factual memories, r - .84. Apart from the developer, this tool also had been used in other study, such as Rovatti et al. (2012).

Intensive Care Experience Questionnaire (ICEQ) was developed by Rattray et al. (2004) as one of standardized method in assessing experiences in ICU. Rattray et al. (2004) listed five key domains from the literature reviews before come out with four domains of intensive care experience. The five key domains that linked to short or long term outcome of patient in ICU were memories, awareness, feelings, environment, and information. Then, from these five key domains, Rattray et al. (2004) integrated it in four domains; awareness of surrounding, frightening experience, recall of experience, and satisfaction of care. These four domains offered more broad view and captured the detail about intensive care experience among ICU survivors. Each domain have a specific number of items; awareness of surroundings (9 items), frightening experiences (6 items), recall of experiences (5 items), and satisfaction with care (4 items). Goal of assessing and summarizing the experiences is to facilitate effective decisions (Ariely & Carmon, 2000) especially towards enhancing the intensive care services. The development of this instrument was derived from the previous studies and consultation with intensive care nurses. The ICEQ was tested through two stages; study 1 was done to develop the items for the questionnaire and study 2 was done to evaluate the questionnaire. Cronbach's alpha was used for the reliability, and poor alpha value indicate the poor items, for the items with corrected item domain total correlation less or equal with .30 consideration was put to remove the item for the final questionnaire. Based on Rattray, Johnston, and Wildsmith (2004), the reliability of the instrument (Cronbach's alpha) for each domain were; awareness of surrounding was .93, frightening experiences was .78, recall of experiences was .73, and satisfaction with care was .71. Content validity of ICEQ did not state in previous research, but this

instrument was used in previous study by Ho et al. (2008), Rattray et al. (2005), and Alasad, Abu Tabar, and Ahmad (2015).

For this study, ICEQ was used as measurement tool to measure intensive care experience among ICU survivors in three government hospitals in Malaysia. The reasons to select this measurement tool were; (1) it had been tested in Malaysian population by study from Ho et al. (2008), hence it useful to compare the outcome after gaining the data, (2) it fit with the operational definition that aim to look at the intensive care experience in four domains (awareness of surrounding, frightening experience, recall of experience, and satisfaction of care) which cannot be found in other two measurement tools, (3) it captured the intensive care experience in more detail since it had four domains, instead of focus only on one or two concepts which might not elaborate the intensive care experience, (4) it had strong reliability ranged from .71 to .93 for all four domains. However, the four domains might not enough to capture the intensive care experience among the ICU survivors. Hence, the additional ten (10) open-ended questions were useful to cover the gap of information from the ICEQ. These questions literally look at the antecedent and consequent of the intensive care experience in more detail. These 10 questions were developed by the researcher based on information gained from the literature reviews, the set of ICEQ, and also from the personal experienced of the researcher as a nurse in the intensive care unit.

Study Related to Intensive Care Experiences

Study by Rattray et al. (2004). This study was done in Scottish teaching hospital and the samples size was 109. The ICEQ was developed by these researchers. The latest version of ICEQ consists of 24 questions and was used 5-point Likert scale. Components score were obtained by adding the responses on each items in the emergent domain. High score indicated greater reported awareness toward surroundings, more frightening experiences, and highly satisfaction with care. While low score on domain recall of experiences indicated poorer recollection about ICU. The result of this study showed that in domain Awareness of surrounding, 48% remember been in ICU and able to communicate with people around them, almost half of patient did aware about someone around and presence of relative, and most of them claimed felt safe in ICU; in domain Frightening experience, 63% had bad dreams, 51% reported seen strange things,

59% claimed in pain, and half of patient felt helpless during stay; in domain Recall of experience, 64% reported of blurred memory about ICU, and 58% unsure either it was day or night in ICU; and in domain Satisfaction with care, 80% satisfied with the care, and 54% did not think ICU was a noisy place.

Study by Alasad et al. (2015). This study was done in three hospitals in Jordan. The samples of this study were 98 participants. The tool used was the first version of ICEQ which consists of 31 questions. The answer was used 5-point Likert scale to gather the responses from the samples. The result showed high level on awareness towards persons (82.2%) and relatives (90.3%), 82% samples had perception of their care as good as it should be, 60.7% samples able to recall the experiences most of the time, and 55% samples were frightened most of the time.

Study by Ho et al. (2008). This study was done in one hospital under university management in Malaysia. The samples size for this study was 45 and tool used was the ICEQ which adopted and modified from Rattray, Johnston, and Wildsmith (2004). This study presented the 30 question to look at the intensive care experiences and used 3-point Likert scale range from 0 – 2 (0 = never, 1 = some of the time, 2 = all of the time). This study scores the intensive care experiences into two levels (high and low). The result showed 20 (44%) samples aware with their surrounding, 31 (69%) claimed had frightening experiences, 43 (96%) satisfy with the care services and 39 (87%) reported actual recall of experiences while stayed in ICU. This study also reported that ventilated patients who were aware with surrounding able to recall the frightening experienced during ICU stay.

Even though there was a study done in Malaysia, this study aim to explore the intensive care experience among ICU survivors in term of using more larger samples size (142 samples); study were done in three government hospitals; this study provide latest information regarding experiences since the previous study was done about seven to eight years ago, thus, the changes of technology, critical care practices and environment in ICU might give different data; used of different target group in term of age of samples; and this study used ICEQ without modify it.

Conceptual Framework

Intensive care unit (ICU) was the specialized ward in the hospital where critically ill patients were cared by well trained staffs, facilitated with advanced equipments and treatments, up to date machines and monitors. It offers comprehensive and continuous care for the critically ill persons and who can benefit from the treatment. However, during stay in ICU, the ICU survivors reported both positive and negative experiences. The negative experiences may lead to unwanted consequences such as PTSD or PICS that give impact to quality of life. In this study, ICU survivors were the adults whose stable from critical condition at least 24-hours in step down units or general wards after move out from the intensive care unit. The intensive care experience was thoroughly looked upon four domains: awareness of surroundings, frightening experiences, recall of experiences, and satisfaction with care. These domains were adapted from Rattray et al. (2004). The information gained from this study provides both positive and negative reports by the ICU survivors.