The Effect of Nursing Comfort Care Integrating With the Holy Qur'an Recitation on Comfort in Muslim Patients With Mechanical Ventilation

Junaidy Suparman Rustam

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Nursing Science (International Program)

Prince of Songkla University

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I hereby certify that this work has not already been accepted in substance for any degree, and is not being concurrently submitted in candidature for any degree.

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Candidate

ชื่อวิทยานิพนธ์ ผลของการพยาบาลที่ดูแลความสุขสบายโดยการผสมผสานการสวดอัลกุรอานต่อความสุขสบายในผู้ป่วยมุสลิมที่ใช้เครื่องช่วยหายใจ

ผู้เขียน นายจูไนดี สุพาร์มาน รัสแทม

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ปีการศึกษา 2559

บทคัดย่อ

การวิจัยกึ่งทดลองนี้มีวัตถุประสงค์เพื่อศึกษาผลของการพยาบาลที่ดูแลความสุขสบายโดยการผสมผสานการสวดอัลกุรอานต่อความสุขสบายในผู้ป่วยมุสลิมที่ใช้เครื่องช่วยหายใจ คัดเลือกกลุ่มตัวอย่างจำนวน 56 คน จากหออภิบาลผู้ป่วย (ไอซียู) ของโรงพยาบาล 3 แห่ง ในสุมาตราตะวันออก ประเทศอินโดนีเซีย และได้สุ่มตัวอย่างเข้ากลุ่มทดลอง (จำนวน 28 คน) และกลุ่มควบคุม (จำนวน 28 คน) โดยใช้เทคนิคการจับคู่ระหว่างเพศ อายุ และระยะเวลาที่ใช้เครื่องช่วยหายใจ กลุ่มทดลองได้รับการพยาบาลที่ดูแลความสุขสบายโดยการผสมผสานการสวดอัลกุรอาน ในขณะที่กลุ่มควบคุมได้รับการดูแลตามปกติ ประเมินความสุขสบายในวันแรกก่อนการทดลองและหลังสิ้นสุดการทดลองโดยใช้เครื่องมือแบบประเมินความสุขสบายสำหรับผู้ป่วยที่ใช้เครื่องช่วยหายใจ (Comfort Questionnaire for Mechanically Ventilated Patients, CQMVP) ซึ่งผ่านการพิจารณาโดยผู้ทรงคุณวุฒิ และมีค่าความตรงของเครื่องมือ (Scale Content Validity Index, S-CVI) เท่ากับ .92 และทดสอบความเที่ยงของเครื่องมือในผู้ป่วยที่มีคุณสมบัติตรงตามเกณฑ์ในการคัดเลือกกลุ่มตัวอย่าง จำนวน 20 คน ได้ค่าสัมประสิทธิ์แอลฟ่าของครอนบาด เท่ากับ .81 วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนาและเชิงอนุมาน

ผลการศึกษาแสดงให้เห็นว่า ค่าเฉลี่ยของความสุขสบายหลังได้รับการพยาบาลมีความแตกต่างอย่างมีนัยสำคัญทางสถิติระหว่างกลุ่มทดลองและกลุ่มควบคุม ($t = 6.70, p < .05$) นอกจากนี้ในกลุ่มทดลอง ค่าเฉลี่ยของความสุขสบายหลังได้รับการพยาบาลมีค่าสูงขึ้นกว่าก่อนได้รับอย่างมีนัยสำคัญทางสถิติ ($t = 12.38, p < .05$)

ผลการศึกษานี้แสดงว่า การพยาบาลที่ดูแลความสุขสบายที่ผสมผสานการสวดอัลกุรอานมีประสิทธิภาพในการส่งเสริมความสุขสบายในผู้ป่วยมุสลิมที่ใช้เครื่องช่วยหายใจ ดังนั้นสามารถแนะนำให้มีการใช้การพยาบาลรูปแบบนี้ในการปฏิบัติพยาบาล

Thesis Title The Effect of Nursing Comfort Care Integrating With the Holy Qur'an Recitation on Comfort in Muslim Patients With Mechanical Ventilation

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ABSTRACT

This quasi-experimental study purposed to examine the effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort in Muslim patients with mechanical ventilation. The 56 participants recruited form the intensive care unit (ICU) of three public hospitals in West Sumatra, Indonesia were randomly assigned into either the experimental group (*n*=28) or control group (*n*=28) by matching technique based on gender, age, and duration using ventilator. Those in the experimental group received nursing comfort care integrating with the Holy Qur'an recitation while those in the control group received usual care. Comfort assessed by using Comfort Questionnaire for Mechanically Ventilated Patients (CQMVP), was measured at the first day before receiving the intervention as pretest data, and on the second day after the intervention was completed as the posttest data. Three experts assessed and validated the content of CQMVP. The validity test showed that the scale content validity index (S-CVI) of the CQMVP was .92. The reliability of the CQMVP was tested in twenty participants who met inclusion criteria and its reliability of the

Cronbach's alpha coefficient was .81. Descriptive and inferential statistics were used to analyze the data.

Result of the study showed that there was a significant difference in the mean of comfort scores after receiving the intervention between the participants in the experimental group and the participants in the control group ($t = 6.70$, $p < .05$). Moreover, the mean of comfort score after receiving the intervention in the experimental group showed increased significantly from before receiving the intervention ($t = 12.38$, $p < .05$).

These findings revealed that nursing comfort care integrating with the Holy Qur'an recitation was effective in promoting comfort in Muslim patients while receiving mechanical ventilation. Thus, this nursing program can be recommended to use in nursing practice.

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Chapter 1

Introduction

This chapter presents background and significance of the problem, objectives of the study, and research questions. It also describes conceptual framework of the study, hypotheses, definition of terms, scope of the study and significance of the study.

Background and Significance of the Problem

Mechanical ventilation is a lifesaving equipment and frequently used as a treatment modality for patients with respiratory failure (Pan & Qiu, 2015). Despite this fact, previous studies have found that 96% of patients with mechanical ventilation reported decreasing in comfort during their treatment (Ma et al., 2010). Moreover, after discharge from the intensive care unit (ICU), 88% of patients still remember mechanical ventilation as a stressful and uncomfortable experience on their lives (Samuelson, 2011).

Comfort during ventilation can be disturbed from many causes such as dyspnea, pain, gagging (Campbell & Happ, 2010), thirsty and dry mouth (Clukey et al., 2014), anxiety, anger, frustration (Tate et al., 2012), environmental noises (Wang et al., 2015) and loneliness (Lombardo et al., 2013). If nurses do not manage this condition effectively, it can be lead to feeling of panic, depression, agitation and delirium (Grap, Blecha, & Munro, 2002). Consequently, unplanned extubation can occur (Nelson et al., 2009).

Basically, patients' comfort may increase, if the needs of comfort can be met by the appropriate nursing care (Masters, 2015). In the Theory of Comfort, Katherine Kolcaba (2003) described that comfort can be categorized according to the patients' experience in four contexts of comfort, namely physical, psychospiritual, environmental, and sociocultural. In order to enhance patients' comfort, nursing comfort care can be used by entails three types of comfort interventions; standard comfort interventions, coaching, and comfort food for the soul (Kolcaba, 2003).

Recently, a review study by Ponte and Silvia (2015) found that most of research studies shown patients' comfort has been increased after applying the Kolcaba's comfort care in the differ populations. Wilson (2004) stated that Kolcaba's comfort care is a holistic comfort intervention that can be used to target many comfort needs at one time. Based on this evidence, applying the concept of Kolcaba's comfort care can be an effective way to promote more holistic comfort nursing care in patients with mechanical ventilation.

Furthermore, there are various interventions to promote comfort during ventilator treatment. Coyer et al. (2007) listed several basic interventions that commonly provides to promote comfort in patients with mechanical ventilation such as positioning, suctioning, oral care, and management of stressors including ineffective communication, sleep disturbance, and isolation (Coyer, Wheeler, Wetzig, & Couchman, 2007). However, the role of these basic interventions is not prominent and may not appropriate for mechanically ventilated patients in different spiritual and cultural backgound, particularly in Muslim population.

Previous study found that Muslim patients with mechanical ventilation reported an increased spritual need due to the difficulty of performing their daily ritual such as reciting the Holy Qur'an (Mohammed et al., 2015). In the Islamic perspective, Muslims believe by following the principles of religion it can bring comfort, pleasure and confidence for them, especially when they are sick (Al-Galal, Alshaikli, Rahman, & Dzulkifli, 2015; Yousefi, Abedi, Yarmohammadian, & Elliot, 2009). This was emphasized in the verses from the Holy Qur'an, such as "Remembrance of Allah certainly brings comfort to all hearts" (Surah Ra'd verse 28) and "Help ourselves (in your affairs) with patience and prayer" (Surah Al-Baqara verse 45).

Moreover, Muslims believe the sound the Holy Qur'an recitation is deeply spiritual and it is one of the greatest miracles of the Holy Qur'an. The Holy Qur'an recitation has widely used as an intervention to recover from sickness, promote good health, and has relaxing effect even though they do not understand the meaning of the verse that is being read or recited (Tumiran et al., 2013). The Holy Quran recitation as one of the daily rituals of Muslim patients can be an efficient way to increase patients' spirituality and also to handle life's everyday challenges (Hermatti et al., 2014). Therefore, it is important to highlight the basic principles of Islam, in caring Muslim patients with mechanical ventilation.

In this regard, integrating holistic interventions related to the spiritual and cultural aspects of the patients in clinical practice can be a great deal to attention. Several studies reported that the Holy Qur'an recitation has positive effects in Muslim patients with mechanical ventilation (Ariff et al., 2013; Awa, 2014). When listening to

the Holy Qur'an recitation, the stress response can be abated, comfort can be increased, and an overall relaxation response can be induced (Babaii et al., 2015; Babamohamadi et al., 2015). Moreover, this intervention can reduce the stimuli of stress by synchronize the body rhythms such as breathing and heart rate (Ariff et al., 2013; Awa, 2014). Therefore, the mechanism of the Holy Qur'an recitation can be considered as comforting intervention and integrates into the nursing comfort care to enhance comfort holistically in Muslim patients on mechanical ventilation.

Nursing comfort care for the purpose of patients' comfort in relation to integrating the Holy Qur'an recitation within the population of Muslim patients with mechanical ventilation is relatively new. There was limited published research that identified a specific target to examine the effect of nursing comfort care integrating with the spiritual and cultural aspect for the patients with mechanical ventilation, especially in Muslim patients. Hence, the nursing comfort care integrating with the Holy Qur'an recitation was introduced as a brief intervention designed based on the concept of Kolcaba's comfort theory that is not only to promote patients' comfort, but also to fulfill spiritual need and daily rituals of Muslim patients with mechanical ventilation. In addition, this intervention can be useful to guide nurses to incorporate the nursing comfort care integrating with the Holy Qur'an recitation as part of their program to promote holistic comfort while receiving mechanical ventilation, particularly for Muslim patients.

Objectives of the Study

1. To compare the mean score of comfort of Muslim patients with mechanical ventilation in the experimental group who received nursing comfort care integrating with the Holy Qu'an recitation group and the control group who recieved usual care.

2. To compare the mean score of comfort of Muslim patients with mechanical ventilation in the experimental group before and after receiving nursing comfort care integrating with the Holy Qur'an recitation.

Research Questions of the Study

1. Is comfort of Muslim patients with mechanical ventilation in the experimental group after receiving nursing comfort care integrating with the Holy Qur'an recitation higher than the control group?

2. Is comfort of Muslim patients with mechanical ventilation in the experimental group after receiving nursing comfort care integrating with the Holy Qur'an recitation higher than before receiving the interventions?

Conceptual Framework of the Study

The conceptual framework of this study was established based on the Theory of Comfort (Kolcaba, 2003), and literature review to support the concept of intervention related to comfort in Muslim patients with mechanical ventilation.

Kolcaba's comfort theory. Comfort theory is a middle range theory that was developed by Katherine Kolcaba. This theory states that human has a holistic response

to complex stimuli, comfort is an ultimate goal of nursing care, and humans struggling to have their comfort need to be met. Kolcaba (2003) defines comfort in nursing as "the immediate experience of being strengthened by having the need for relief, ease, and transcendence met in four contexts of comfort including, physical, psychospiritual, sociocultural and environmental" (p.14).

Nursing comfort care in this study is based on Kolcaba's comfort theory that comprised of four contexts of comfort (physical, psychospiritual, environmental, and sociocultural) as the outcome of the study in the selected population, and three types of comfort interventions (standard comfort intervention, coaching intervention, and comfort food for soul) to establish concept of the intervention in this study.

Context of comfort. The four contexts of comfort that may occurs in the patients including (1) physical comfort which refers to the outcome of individual reaction to an illness, whether it can be created by the stimulus or not; (2) psychospiritual comfort which relates to internal awareness including self-esteem, identity, sexuality, life meaning, and one's understood relationship to a higher order or being; (3) environmental comfort which is associated with the external surroundings and conditions of the patients such as light, noise, heat, and safety; and (4) sociocultural comfort which refers to interpersonal, family and societal relationship (Kolcaba, 2003).

Comfort care. Based on the Kolcaba's comfort theory (2003) comfort care in nursing can be described as "a philosophy of health care that focuses on addressing physical (including hemostatic mechanisms and sensation), psychospiritual, environmental, and sociocultural comfort needs of patients" (Kolcaba, 2003 p.252).

Kolcaba (2003) stated that nurses should entail at least three types of comfort interventions to enhance patients' comfort. The three types of comfort care included standard comfort interventions, coaching, and comfort food for the soul that were described as follow:

Standard comfort intervention. According to Kolcaba (2003), the first type of the comfort intervention was designed to maintain hemostasis by monitoring vital signs, and responding in changes of patient's assessment that indicate a hemostasis compromise includes attention of pain and comfort. Moreover, standard comfort interventions also designed to help the patients to maintain or regain physical function by providing appropriate nursing interventions and the administration of medication (Kolcaba & DiMarco, 2005). According to these concepts, the provision of basic nursing care intervention including positioning, suctioning, mouth care, and the administration of medications can be served as the standard comfort intervention in this study.

Coaching. The second type of comfort intervention is coaching that designed to help the patients to relieves their anxiety, provide reassurance and information, and also to instill hope (Kolcaba, 2003). Moreover, the effectiveness of the coaching interventions depends on the time of implementation when patients are ready to receive a new or more positive idea. Examples of coaching intervention are emotional support, reassurance, education, and listening (Kolcaba, 2003). In this study, the intent of coaching for the patients with mechanical ventilation can be established by advocating and reassure the involvement of family members to participate in nursing care.

Comfort food for the soul. Based on Kolcaba (2003), the aim of comfort food for soul is to make patients feel strengthened in intangible and personally, and also the need of transcendence enhanced by the relationship between the nurse and patient or family. These relationships help the patients to accomplish the difficult condition related to healing, rehabilitation, and the way to return to the normal life (Kolcaba, 2003).

In this study, helping the patients to prayer (*salat*) and provide a session to listening to the Holy Qur'an recitation were performed as comfort food for soul for Muslim patients with mechanical ventilation. Muslim scholars have observed that *salat* and recites the Holy Qur'an, has positive effects on the illness. When the patients perform prayer or recite the Holy Qur'an, it can remind them that God is all powerful and the Healer, so they should rely on God (Yucel, 2008).

The Holy Qur'an Recitation. The Holy Qur'an recitation in this study was integrated as comforting intervention to promote comfort in patients with mechanical ventilation. The intervention of the Holy Qur'an recitation can be defined as an ancient and widely used intervention to recover from sickness and promote good health (Tumiran et al., 2013), and the sound of the pleasant rhythm of the Holy Qur'an recitation can be served as a spiritual music (Safara & Bhatia, 2014). Based on the literature, the effectiveness mechanism of the Holy Qur'an recitation can be related with *tajwid*, pronunciation, and duration that influence the physiologic and psychological response (Ajorpaz, Aghajani, & Shahshahani, 2011). The Holy Qur'an recitation with a constant rhythm, the amplitude of 30-50 decibels, the bit rate is 64 Kbps may create a relaxation response to the listener (Purnawan, Isworo, & Upoyo,

2012). The relaxation response of the patients associated with the increasing alpha brain wave after listening to the Holy Qur'an recitation (Zulkarnain, Shilawani, Kadir, Murat, & Isa, 2012). Increased alpha brain wave implies that the Holy Quran recitation can effect on some hormone and chemical are responsible for relaxation due to the Holy Quran has a specific effect on Muslims (Shekha, Hassan, & Othman, 2013). Moreover, the literature revealed evidence from several studies that the duration of 15 minutes of the Holy Qur'an recitation was appropriate to use in the variety of settings (Babaii, Abbasinnia, Hejazi, Tabei, & Deghani, 2015; Babamohamadi, Sotodeshal, Koenig, Jahani, & Ghorbani, 2015; Mottaghi, Esmaili, & Rohani, 2011).

Types of comfort care	Comfort care interventions
Standard comfort intervention	(1) Monitoring stability of the patients' hemostasis by assessing vital signs. (2) Assessing patients' comfort scale and pain intensity. (3) Maintaining physical function by providing nursing interventions and the administration of medication or treatment.
Coaching intervention	(4) Advocating the patients and the family members about communication of comfort needs. (5) Reassuring the patients and the family members that the researcher will pay attention for any verbal and nonverbal responses of the patients.
Comfort food for soul	(6) Collaborating with the family in preparing the patients to prayer (*salat*) based on Muslim rituals. (7) Providing a session to listen the Holy Qur'an recitation.

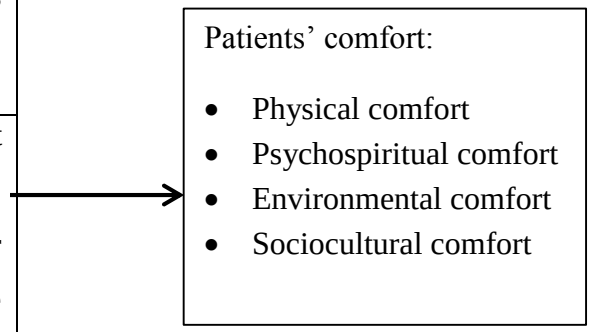

Figure 1. Conceptual framework of nursing comfort care integrating with the Holy Qur'an recitation on comfort of Muslim patients with mechanical ventilation

Hypotheses of the Study

1. The mean of comfort of Muslim patients with mechanical ventilation after receiving nursing comfort care integrating with the Holy Qur'an recitation is higher than that who receiving usual care.

2. The mean score of comfort of Muslim patients with mechanical ventilation after receiving nursing comfort care integrating with the Holy Qur'an recitation is higher than before receiving the intervention.

Definition of Terms

Comfort. Comfort refers to the perceptions of Muslim patients with mechanical ventilation by having needs that met in Kolcaba's four contexts of comfort including physical, psyschospiritual, social, and environmental. Comfort in patients with mechanical ventilation can be measured by using the Comfort Questionnaire for Mechanically Ventilated Patients (CQMVP).

Nursing comfort care integrating with the Holy Qur'an recitation. Nursing comfort care integrating with the Holy Qur'an recitation refers to the nursing care intervention for Muslim patients with mechanical ventilation based on Kolcaba's comfort care which composed of three types of comfort intervention including standard comfort intervention, coaching intervention, and comfort food for soul. This intervention also integrated the Holy Qur'an recitation as the comforting intervention to enhance comfort in Muslim patients with mechanical ventilation.

Scope of the Study

The purpose of the present study was to examine the effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort among Muslim patients with mechanical ventilation. This study was conducted at intensive care units of M.Djamil Hospital, Achmad Muchtar Hospital, and YARSI Islamic Hospital in West Sumatra, Indonesia, from December 2016 to March 2017.

Significance of the Study

Comfort is an essential outcome in caring patients with mechanical ventilation. In order to promote comfort during mechanical ventilation, nurses should address holistic interventions. Kolcaba's comfort care entails three types of comfort interventions including standard comfort intervention, coaching, and comfort food for soul. This method can give positive impacts to enhance patients' comfort holistically, including physical, psychospiritual, environmental, and sociocultural comfort. Moreover, listening to the Holy Qur'an recitation could be an effective way for the Muslim patients with mechanical ventilation in order to fulfill their spiritual and cultural needs during depending on mechanical ventilation.

Therefore, nursing comfort care integrating with the Holy Qur'an recitation was a holistic intervention that can be used to promote comfort in Muslim patients with mechanical ventilation. Moreover, this intervention can be useful to guide nurses in clinical practice to incorporate the nursing comfort care integrating with the Holy Qur'an recitation as part of their program to promote comfort holistically in patients with mechanical ventilation, especially Muslim patients.

Chapter 2

Literature review

This chapter presents concept, theories, and evidence that have associated with comfort in patients with mechanical ventilation, and the nursing comfort care integrating with the Holy Qur'an recitation on comfort of patients with mechanical ventilation. The review covers the following topics:

1. Theoretical Concept of Comfort
    1.1. Definitions of comfort
    1.2. Kolcaba's comfort theory
    1.3. Applications of Kolcaba's comfort theory
2. Overview of Comfort in Patients With Mechanical Ventilation
    2.1. Comfort needs of patients with mechanical ventilation
    2.2. Factors related to comfort in patients with mechanical ventilation
    2.3. Assessment of comfort in patients with mechanical ventilation
3. Nursing Care to Promote Comfort in Patients With Mechanical Ventilation
    3.1. Basic interventions to promote comfort during mechanical ventilation
    3.2. Intervention of the Holy Qur'an recitation and its effectiveness
4. Nursing Comfort Care Integrating With the Holy Qur'an Recitation
5. Summary of the Literature Review

Theoretical Concept of Comfort

The theoretical concept of comfort in the literature review describes the definition of comfort, Kolcaba's comfort theory, and the application of Kolcaba's comfort theory.

Definition of comfort. Historically, comfort can be related to both physical and psychological phenomena (Kolcaba & Kolcaba, 1991). The word 'comfort' is derived from Middle English which as a noun means the sense of strengthening, support, consolation. As a verb it means to strengthen, give support, and to console. According to the Oxford English Dictionary (2016) comfort is defined as "a state of physical and material well-being with freedom from pain and trouble, and satisfaction of bodily needs; relief or support in mental distress or affliction; consolation, solace, soothing; the state of being consoled or the feeling of consolation or mental relief".

Malinowski and Stemler (2002) stated comfort in nursing is an actual need throughout life and expressed comfort as an outcome or function of nursing care, as an inherent component of basic human needs, and as a process of intervention in nursing care. The importance of comfort in nursing care is to the process of healing, an essential element of holistic, and culturally congruent with the patient's care. In a review study by Tutton and Seers (2003) has concluded that there is a lack of clarity around the use of the term comfort which fits with a view of comfort as an emerging concept.

Based on Kolcaba's Comfort Theory (2003), the meaning of comfort related to ordinary language, historical references in nursing, and as a current nursing term. And also, comfort in nursing can be interpreted as a process of fulfilling the needs of patients, families, and communities. Therefore, Kolcaba (2003) developed a technical

definition of comfort in nursing as "the immediate experience of being strengthened by having needs for relief, ease, and transcendence met in four contexts (physical, psychospiritual, social, and environmental)" (p.14).

Even though the definitions of comfort are clearly explained in the literatures, but the meanings of comfort still vary depending on the authors' views of nursing. Therefore, comfort in nursing can be defined as a multidimensional term and as having complex concepts that are significant for nursing historically and currently. The structure of comfort is complex because it involves personal experience with varying degrees of intensity. And also, it must be specified whether the term comfort is being used as a verb, a noun, or an adjective, and whether it refers to a process or an outcome.

Kolcaba's Comfort Theory. Comfort theory is a middle range nursing theory that was developed by Katherine Kolcaba in the early 1990's for health practice, education, and research. Katherine Kolcaba is an American nursing scholar who attained a Ph.D in nursing and also has a registered certificate as a clinical nurse specialist (March & McCormack, 2009). Kolcaba has elaborated and developed her theory continuously. She also advanced and shared her theory across several healthcare disciplines including nursing, medicine, psychology, psychiatry, and ergonomics. In 1991, Kolcaba conducted a concept analysis to examine her study in comparison to various literatures, and from the review has been confirmed that comfort is a positive concept and associated with the activities of caring and strengthening the patients (Kolcaba & Kolcaba, 1991).

Kolcaba (2003) claimed that all of the concepts in comfort theory are interrelated and interdependent. She also stated that "if a patient experiences comfort

in every cell or aspect of comfort, we can say that he or she is comfortable" (p.252). Wilson and Kolcaba (2004) observed that a patient's distraction from comfort meant that patients had discomfort and increased negative physical sensations or emotional distress. Therefore, comfort theory was congruent with nursing values and domains such as care, symptoms management, interaction, holism, healing environment, identification of needs, and homeostasis (Kolcaba, Tilton, & Drouin, 2006).

Contexts of comfort. Based on Kolcaba (2003), the four contexts of comfort that may occur in patients include physical, psychospiritual, environmental, and sociocultural comfort. These terms regarding the context of comfort were derived from reviews on holistic perspectives in nursing (Kolcaba, 1992). The four contexts of comfort are described as follows:

Physical comfort. In this context, physical comfort is related to physical perceptions (Kolcaba, 1995), that can be associated with bodily sensation and physiological factors that include haemostatic mechanism and nutrition, immune function, resting and relaxation, reaction of the diseases, and the continuity of bowel function (Derya & Pasinlioglu, 2015; Kolcaba, 1991). In Kolcaba (2003), it has been stated that physical comfort is the result of individual reaction to an illness, whether the stimulus can be created or not. Physical comfort can be detracted by several sources such as pain, haemostatic imbalance, poor positioning, breathing difficulties, itching, nausea, and discomfort from invasive procedures (Wilson & Kolcaba, 2004).

Psychospiritual comfort. Kolcaba (2003) defined psychospiritual comfort as pertaining to internal awareness, including self esteem, identity, sexuality, life's meaning, and one's understood relationship to a higher order or being. Furthermore, the psychospiritual context of comfort consists of mental, spiritual, and moral

elements that include the elements that affect individual lives; such as, self respect, ego, sexuality, and self-awareness (Kolcaba, 1991). The detractors of psychospiritual comfort can be associated with anxiety, confusion incompletness, or fear (Wilson & Kolcaba, 2004).

Environmental comfort. The environmental context of comfort refers to the surrounding environment and conditions of the patients (Kolcaba & Kolcaba, 1991). Environmental comfort can be detracted by several factors such as cold, noises, mess up, very bright light, bad smell, lack of privacy, and uncomfortable beds (Kolcaba, 1995, Kolcaba 2003). Other detracting factors of environmental comfort can be associated with body restraints due to restrictive devices such intravenous lines, invasive monitors, and sensors (Wilson & Kolcaba, 2004).

Sociocultural comfort. The last context of comfort is sociocultural comfort which refers to interpersonal, family and societal relationships (Kolcaba, 2003). Factors that may affect sociocultural comfort including information and guidance, provide appropriate care to the family's traditions, habits, religious beliefs, and establishing interpersonal communication (K. Kolcaba & Kolcaba, 1991; Kolcaba, 2003). Several detractors can reduce the sociocultural comfort of the patients, such as isolation, disregard for cultural traditions, fragmented care, poor social support, and limited resources for ongoing care at home after discharge (Wilson & Kolcaba, 2004).

***Comfort Care*.** Comfort care is a nursing art that involves the process of comforting intervention performed by a nurse for a patient, and the outcome is to enhance patients' comfort during their treatment (Kolcaba, 1995). In 2003, Kolcaba further described comfort care as "a philosophy of health care that focuses on

adressing physical, psychospiritual, environmental, and sociocultural comfort needs of patients" (Kolcaba, 2003 p.252).

In the Theory of comfort (Kolcaba, 2003), it was concluded that the concept of comfort care entails three types of comfort interventions that can be implemented to achieve the goal of enhancing patient's comfort. Furthermore, Kolcaba explained that to enhance comfort while caring for patients, nurses need to deliver appropriate intentions related to patients' needs and conditions. The types of comfort care included standard comfort intervention, coaching, and comfort food for the soul

Standard comfort intervention. The standard comfort interventions are designed to help the patients to maintain or regain physical function and comfort, and also prevention of complications that may occur (Kolcaba, 2003). In Wilson and Kolcaba (2004) the first type of comfort intervention related to maintaining hemostasis such as monitoring vital signs and laboratory results, and gives respond on changes in patients' assessment that indicate hemostatic compromise. Moreover, standard comfort intervention also includes attention to pain, hypothermia, administration of appropriate medication, and nursing intervention (Kolcaba, 2003; Wilson & Kolcaba, 2004).

Coaching. The second type of comfort intervention which is generally referred to as coaching is a culturally sensitive nursing intervention developed for patients to relieve stress, reduce anxiety, provide reassurance, clarify information, instill hope, listen, help realistically plan for recovery from illness, integration of the disease process, or death (Kolcaba, 2003). Wilson and Kolcaba (2004) mentioned that the effectiveness of the coaching intervention depends on its implementation at the time when patients are ready to receive a new or more positive idea. Some examples of

coaching interventions are emotional support, reassurance, education, touch, and listening.

Literatures showed that coaching intervention has positive impacts including in patients' comfort. Several studies applied Kolcaba's coaching intervention in varied setting of the study. The results showed that Kolcaba's coaching intervention should involve at least three components in coaching process, including the identification of patient needs, the learning process which occurs during coaching intervention and the evaluation of coaching process to taking an action which encourage the change of patients' behavior (Dowd et al., 2007; Fahey et al., 2008; Kowalski & Casper, 2007).

Comfort food for the soul. Kolcaba (2003) described these interventions like comfort food that we eat. The purpose is to make patients feel strengthened in intangible ways as well as personally. The target of comfort food for soul is to meet the need for transcendence through the relationship between the nurse and the patient or their family. These relationships help patients to overcome the difficult tasks that are related to healing, rehabilitation, and the way to return to the normal life. Examples of interventions that provide comfort food for soul are massage, adapting the environment to enhance warmth, music therapy, therapeutic touch and hand holding, spending time, and personal connection. Patients do not expect these interventions, however, they are usually are very pleased when it is offered and can make patients feel strengthened in some sort of intangible and personalized experience (Kolcaba, 2003; Wilson & Kolcaba, 2004).

Previous studies have conducted comfort food for soul to increase patients' comfort while receiving mechanical ventilation. For example, experimental studies by

Besel (2006) and Ciftci and Otzunc (2015) were utilized music therapy to promote patients' comfort while receiving mechanical ventilation treatment. The result of the study showed general comfort of patients with mechanical ventilation was increased significantly after receiving music therapy. Both of the studies were used comfort questionnaire from Kolcaba's comfort theory to measure comfort of the subjects.

Application of Kolcaba's Comfort Theory. Several studies in the literature have applied Kolcaba's comfort theory as a guiding framework in various populations. A study by Wilson and Kolcaba (2004) emphasized the importance of comfort theory because it has positive outcomes that involve health seeking behavior in the field of perianestesia and also because comfort theory is an important indicator for measuring comfort in perianesthesia care. Similarly, Kolcaba and DiMarco (2005) argued that comfort theory also has positive outcomes for pediatrics and their families to engage in health seeking behaviors. Promoting comfort in pediatrics and their concerned families in a clinical setting is also beneficial, practical and satisfying for recipients and nurses.

Moreover, Kolcaba and her colleagues conducted experimental studies by developing and testing several interventions that are comforting, easy to learn and administer, and require a little effort of the patients in a variety of settings. For example, bilateral hand massage was used to promote holistic comfort for hospice patients and nursing home residents (Kolcaba, Dowd, Steiner, & Mitzel, 2004; Kolcaba, Schim, & Steiner, 2006). The results of both studies found that the holistic comfort including physical, psychospiritual, environmental, and sociocultural aspect of hospice patients and nursing home residents increased significantly after received hand massage. The outcome of holistic comfort is congruent with patients' needs

during the dying process (Kolcaba et al., 2004) and residents in a nursing home (Kolcaba et al., 2006).

Similarly, Apostolo and Kolcaba (2009) utilized a guided imagery intervention to promote comfort in psychiatric inpatients with depressive disorders using the concepts of comfort theory as the framework of the study. The study results showed that guided imagery intervention has many advantages because it is effective, inexpensive, and an easy method to learn and use in psychiatric patients. The imagery intervention creates a link between body and mind that can be associated with perception, emotional, psychological, and behavioral reaction, and also the physiological response in the patients (Apostolo & Kolcaba, 2009).

In addition, a quasi-experimental study by Derya and Painiloglu (2015) has been conducted to determine the effects of nursing care based on Kolcaba's comfort theory in postpartum patients. The researchers found that comfort was increased holistically including physical, psychospiritual, environmental, and sociocultural comfort after receiving the nursing care that was provided based on Kolcaba's comfort theory. This study revealed that nursing care based on Kolcaba's comfort theory was an effective model for postpartum patients and increased comfort in every context of comfort after their comfort needs were met.

Overview of Comfort in Patients With Mechanical Ventilation

The overview of comfort in patients with mechanical ventilation explains the study of literature regarding comfort needs of patients with mechanical ventilation, influencing factors of comfort during mechanical ventilation, assessment of comfort in patients with mechanical ventilation, and intervention to enhance comfort in patients with mechanical ventilation.

Comfort needs of patients with mechanical ventilation. Comfort need of mechanically ventilated patients can be identified by using appropriate tools or instruments. Comfort needs can be associated with the causes of comfort change of mechanically ventilated patients. From the literature, some major causes were identified can influence or disturb comfort needs in patients with mechanical ventilation based on the context of comfort including physical, psychospiritual , environmental, and sociocultural comfort needs.

Physical comfort needs. Patients with mechanical ventilation often reported pain as a significant stress event due to the presence of an endotracheal tube (ETT) in intubation procedures (Clukey, Weyant, Roberts, & Henderson, 2014; Grap, Blecha, & Munro, 2002; Samuelson, 2011). Pain was most correlated with the patients comfort (Samuelson, 2011). A study by Grap et al. (2002) found that movement of ETT increased discomfort even though the tube was well secured. Moreover, the complications of ETT including oral irritation, ulceration, fungal infection, hyper salivation, and tracheal or laryngeal trauma developed to discomfort. The presence of the ETT for even four hours could damage patient's tracheal (Grap, Blecha, & Munro, 2002)

Thirst and a dry mouth are reported as commonly experienced sources for physical discomfort (Landstrom, Rehn, & Frisman, 2009; Tombes & Galluci, 2006). Landstrom et al. (2009) mentioned that the feeling of thirst among patients with mechanical ventilation can be contributed by several conditions such as dehydration, electrolyte disturbance and the use of various medicines. Sometimes after discharged, patients recall stressful memories of experiencing thirst. Tombes and Galuci (2006) reported that 35% of patients with ventilated treatment complained about dry mouth and thirst, and they became suffering during their treatments. Furthermore, the use of an endotracheal tube and tape, mouth props and suctioning devices increased the risk of oral lesions developing in ventilated patients and became a source of irritation (Jones, Newton, & Bower, 2004)

Another disturbing factor of physical comfort need s can be related to the accumulation of sputum resulting from the presence of the artificial airway. The initiated of intubated mechanical ventilation may decrease patient's ability to cough and lead to increase of secretion formation in the lower tracheobronchial tree (Wang, Li, Zou, & Li, 2015). This condition also increases risk for an obstructed airway, atelectasis, pneumonia and infection (Wang et al., 2015)**.**

Psychospiritual comfort needs. Psychological distress was related to anxiety as the major disturbing factor (Chlan, et al., 2013). Patients with mechanical ventilation often have adverse experiences due to anxiety, such as the constriction of arteries and airways in the lungs (Tate, Dabbs, Hoffman, Milbrant, & Happ, 2012). Based on the concept of comfort theory, the experience of anxiety can be classified as a psychospiritual detractor from comfort (Wilson & Kolcaba, 2004).

Psychospiritual comfort in patients with mechanical ventilation can be disturbed due to the alteration of communication. Inability to communicate verbally while being mechanical ventilated is a source of great stress for patients with mechanical ventilation (Grossbach, Stranberg, & Chlan, 2011; Patak L. , Gawlinski, Fung, Doering, & Berg, 2004). They also reported feelings of vulnerability and powerlessness during their treatment because they were unable to communicate effectively (Coyer et al., 2007).

Nilsen et al. (2013) reported that patients who required intubation in mechanical vnetilation resulting in a loss of voice and a consequent complex of communication needs. Similarly, Nelson (2009) found that 90% of patients with ventilation support reported that their highest level of discomfort was due to difficulty communicating during mechanical ventilation. Communication difficulties or inability to speak may create and lead to psycho-emotional distress the symptoms of which are the tendency of depression, anxiety, frustration, fear and anger, panic, sleep disorders, decreased self-esteem, and loss of control (Khalaila et al., 2011). Because of the fact that it is always difficult for patients to communicate with the nurse or medical staff, patients' need or complaints cannot be handled correctly by the nurse and medical staff (Hoorn, Elbers, Girbes, & Tuinman, 2016).

Environmental comfort needs. Most of the patients with mechanical ventilation admitted to intensive care unit (ICU). The patients were exposed with several distractions in the ICUs such as connected with the various devices, a noisy environment, unsettling alarms, uncomfortable lighting, and smell. These environments lead to decrease level of comfort (Coyer et al., 2007; Gardner et al., 2009; Wang, Li, Zou, & Li, 2015). In a review of studies by Kamdar et al. (2012)

reported that ICU noises were identified as significant disruptors of environmental comfort for patients such as staff conversations, alarms, overhead pagers, telephones, and televisions.

Moreover, patient care activities including patient assessments, vital sign monitoring, equipment adjustment, medication administration, phlebotomy, radiographs, wound care, transportation, and bathing were also the disruptors of environmental comfort as well as ICU light levels which plays a vital role in the synchronization of the cardiac rhythm of the patients (Matthews, 2011).

The detractor of environmental comfort could result in the incidence of sleep disorders among patients with MV (Coyer et al., 2007; Gardner et al., 2009; Kamdar, Needham, & Collop, 2012; Matthews, 2011). Sleep has been shown as therapeutic on patients' healing and recovery. It has a positive influence on patient blood pressure, the experience of pain, and emotional wellbeing (Gardner et al., 2009). Matthews (2011) reported that sleep disorder was documented in 39% of the patients involved, possibly indicating an increased discomfort during mechanical ventilation.

Sociocultural comfort needs. The context of sociocultural comfort need of patients with mechanical ventilation has been integrated with family and social support. Lombardo et al. (2013) found that family participation in care activities was almost always planned in patients with mechanical ventilation, with the consideration that family participation could be very useful or essential to the patient's well-being. In contrast, restricting visits from loved ones is also a source of patient discomfort. These conditions can make patients feels lonely during their treatment (Grossbach, Stranberg, & Chlan, 2011; Lombardo, et al., 2013).

Factors related to comfort in patients with mechanical ventilation. There are a number of factors that contribute to comfort in patients with mechanical ventilation. The result of some studies showed that gender, age, duration of using mechanical ventilation can influence patients comfort during mechanical ventilation.

Gender. Limited studies reported the relationship between gender and comfort in mechanically ventilated patients. In a study by Kalfon et al. (2010) found that female patients with mechanical ventilation appeared lower scores of overall comfort than male patients. In contrast, a study by Ayasrah (2016) revealed there is no significant correlations were found between comfort and patients gender with mechanical ventilation.

Decreased comfort in female patients can be associated to the experience of anxiety (Lombardo et al., 2013). Literature claimed that anxiety as one of a major source of discomfort during mechanical ventilation was higher in female patients (Chlan et al., 2013). Zener and Bernstein (2011) argued that anxiety has strong correlation with the need of information. The authors found the need of information was higher in female patients than male patient. Thus, patients' information needs must be met without provoking anxiety in critically ill patients (Zener & Bernstein, 2011).

Age. Numerous studies have reported that age of the patients with mechanical ventilation may associated with the perceived of comfort. Previous study by van de Leur et (2004) reported age were the significant predictors of pain as a source of discomfort was predominantly reported by younger patients during mechanical ventilation treatment. In similar, Gomes, Masrcarenhas, and Alves (2015) noted that the importance of the age factor, i.e. aging increases the incidence of sleep disorders

and decrease on patients' comfort. This risk factor is particularly significant attributable to patients with more than 65 years. It can be noted that there is a direct relationship between the patient's age with the experience of comfort and sleep quality while receiving mechanical ventilation (Matthews, 2011). Whereas, Kalfon et al (2010) in a study of development and validation of a questionnaire for quantitative assessment of perceived comfort in critically ill patients reported patients comfort were only poorly correlation with age of patient with mechanical ventilation (≤60 or >60 years).

Duration using ventilatior. A retrospective study by Yamashita et al. (2017) reported patients felt pain two hours after the initiation of mechanical ventilation. Based on these evidance, can be assumed that the experience discomfort occurred soon after the patients receiving mechanical ventilation. Therefore, the duration using ventilator was found to be a significantly correlated with patients comfort (Kollef et al., 1996). Another study by Vitacca et al. (2004) described that patients comfort were associated with reducing the duration of mechanical ventilation and complications such as ventilator-associated pneumonia. It is noteworthy that in two studies (Georgiou, Hadjibalassi, Lambrinou, Andreu, & Papathanassoglou, 2015; van de Leur et al., 2004) which demonstrated a significant difference with the duration of mechanical ventilation and patients comfort.

Ventilator settings. Several studies reported that ventilator setting may contribute to the patients' comfort during their treatment. Vitacca et al. (2004) reported that the different level of ventilator setting were associated with the significant changes in patients' comfort. Howerever, the highest level of ventilator settings such as pressure support ventilation (PSV) were not contributed with the

highest level of comfort in mechanically ventilated patients. In another study by Vittaca (2012) that was conducted in patients with chronic ventilatory failure has found that ventilator settings have a great variability in patients' comfort while receiving mechanical ventilation. Similarly, Hoff et al. (2014) conducted a study to evaluate breathing pattern, patients' comfort, and patients' effort during PSV. In their study, patients' comfort was measured by using VAS, and the results showed patients felt more comfortable when the ventilator setting subjected to lower tidal volumes and higher frequency during PSV.

According to the evidances above, it can be concluded that the setting of ventilator may influence patients comfort during their treatment. Differences in ventilator settings can be well tolerated if it appropriate with the needs of the patient. Therefore, nurses need to adjust approriate setting of ventilaor to maintain comfort during mechanical ventilation treatment.

Medical devices used. Comfort can be distracted with the used the use of medical restrictive devices such as intravenous lines and invasive monitor that can be related to body restraint (Wilson & Kolcaba, 2004). Mechanically ventilated patients usually required with many medical devices beside mechanical ventilator including monitoring devices, tubes and catheters. Kamdar et al. (2012) stated that the adjustment of medical devices may contribute with the distraction of sleep quality and patients' comfort while receiving mechanical ventilation.

Assessment of comfort in patients with mechanical ventilation. An assessment tool of comfort should include information about factors that relieve or exacerbate the comfort as well as about the impacts of discomfort. Several

instruments are used to assess comfort, but not all of them are suitable to assess comfort in patients with mechanical ventilation.

General Comfort Questionnaire (GCQ). Kolcaba (1992) identified the concept of comfort as a basic patients' need. She discovered three types of comfort: relief, ease, and transcendence, and four contexts of comfort: physical, psychospiritual, environmental, and sociocultural. Kolcaba depicted the concept of comfort with a taxonomic structure (TS). The TS was used to develop the General Comfort Questionnaire (GCQ) for measuring patients' comfort. The GCQ consisted of 48 questions which related to four contexts of comfort. The reliabilities of the four contexts were calculated; 0.7 for physical, 0.78 for psychospiritual, 0.8 for environmental, and 0.66 for sociocultural. The Cronbach's alpha for the GCQ was 0.9 (Kolcaba, 2003). The validity of the studies demonstrated GCQ has good concurrence with a visual analog scale for total comfort (Kolcaba et al., 2004).

In 2006, Kolcaba and her colleagues developed a shortened version of GCQ in her study about the effects of hand massage on comfort of nursing home residents. The Shortened General Comfort Questionnaire (SGCQ) was adapted for a study with sample of 60 participants, 35 of which had received the intervention of hand massage. The other participants in the comparison group with no intervention of hand massage. The result of the study found that participants in the experimental group reported an increase in their comfort after received the hand massage. The Cronbach's alphas for the study were 0.86, 0.83, and 0.82 at three points of measurement (Kolcaba, Schim, & Steiner, 2006).

Similarly, Apostolo and Kolcaba (2009) utilized a quasi-experimental design to examine the effects of guided imagery on comfort, anxiety, depression, and stress

of psychiatric patients. A sample group of 60 psychiatric patients with depressive disorders was recruited for this study. Comfort scores were collected using the Psychiatric Inpatient Comfort Scale that was developed based on the General Comfort Questionnaire (GCQ) from Kolcaba (2003). This instrument demonstrated a Cronbach's alpha from .87 to .93.

Dowd et al. (2007) used a four group randomized, experimental design to determine if healing touch, coaching, or a combination of them can influence comfort and stress in younger college students. A sample group comprised of 52 students that was identified as having stress-related discomforts in a Midwest state university was used for this study. The comfort responses of the participants were obtained using a numerical scale for comfort and the Healing Touch Comfort Questionnaire, which demonstrated an average Cronbach's alpha of .93. The Healing Touch Comfort Questionnaire of this study also was developed form the General Comfort Questionnaire (GCQ) by Kolcaba (2003).

Moreover, Besel (2006) conducted a quasi-experimental study to explore the efficacy of music therapy in enhancing comfort of patients with mechanical ventilation. The intervention group received a music therapy for 20 minutes. In this study, comfort was measured by using Hospice Comfort Questionnaire (HCQ) that was modified from the original version of General Comfort Questionnaire by Kolcaba (2003), in order to make the instrument applicable in assessing comfort of mechanically ventilated patients. The Crohnbach's alpha of HCQ was .80

Comfort Rating Scale (CRS). Several outcome of measures are necessary to capture the complexity of comfort experiences. In clinical practice usually used a

simple assessment method such as CRS. In several studies, the CRS was widely used as an instrument to measure comfort scale (Besel, 2006).

Besel (2006) was used the CRS in his study to assess total comfort of patients with mechanical ventilation by asked the participants to quantify the experience of comfort on a 0 to 10 point, of which 0 was “least comfortable” and 10 was “most comfortable”. The findings of the study showed that 50 % of the paticipants in this study preferred to be asked for comfort scale.

Nursing Care to Promote Comfort in Patients with Mechanical Ventilation.

Management of comfort in patients with mechanical ventilation usually involves various interventions as an integral component of nursing care that can be delivered to promote comfort during ventilator treatment. Many studies have been conducted to explore interventions in order to promote comfort during mechanical ventilation.

Basic interventions to promote comfort during mechanical ventilation. Basic interventions can identified from several interventions that usually provides to promote comfort in patients receiving mechanical ventilation. Based on reviewed literature from research studies and some clinical practices or guidelines of comfort management in patients with mechanical ventilation, the basic interventions to promote comfort during mechanical ventilation can be classified as pharmacological intervention, nursing care intervention, and complementary and alternative interventions. They were described as follows:

Pharmacological interventions. Pharmacological therapy is collaborative intervention in discomfort management. Sedation and narcotics have become the

standard of care in ICU to relieve discomfort and improve patient tolerance to mechanical ventilation in a humane manner. Analgesic combined with adequate sedation has been shown to increase patient comfort and reduce the stress response as well as the duration of mechanical ventilation and ICU length of stay (Urden, 2006). A study by Ma et al. (2010) reported that sedation therapy was significantly reduced discomfort in comparison to continuous sedation therapy. In contrast, the use of sedative and analgesic did not significantly protect patient with complex-mixed discomfort. The researcher also found that the incidence of depression is higher than the incidence of fear in patients with mechanical ventilation.

Similarly, Grap et al. (2012) was conducted to describe the relationship between physiological sedation stability and comfort during a 24-hour period in patients receiving mechanical ventilation. The researcher was found that most of patients (42%) spent the majority of their time in deep sedation. Patients with less movement were associated with greater levels of sedation, even though all patients spent the vast majority of time with no arm movement or leg movement (Grap et al., 2012).

Nursing care intervention. Some studies found that nursing care intervention can serve to promote comfort and also reduce discomfort in patients during ventilator treatment. The management of nursing care of patients with MV was challenged on some levels such as being highly technical skills, and requiring advanced knowledge on invasive monitoring (Couchman, Wetzig, Coyer, & Wheeler, 2007). Effectively nursing care can promote comfort and reduce discomfort during ventilator treatment, including positioning, suctioning, mouth care, and management of stressors such as ineffective communication, sleep disturbance, and isolation (Coyer et al., 2007).

Nurses deliver high quality care by using relevant technologies and also psychosocial care measure (Urden, 2006). Following patients' assessment and safety checks, consideration of nursing care interventions to promote patients' comfort and well-being need to be addressed (Coyer et al., 2007).

Positioning. Positioning in patients with mechanical ventilation can improve patient comfort and also address physiological aims of optimizing oxygen transport and reducing the work of myocardial workload (Coyer et al., 2007). A study by Bonten (2005) reported that the semi-recumbent positioning of a ventilated patient with the head of the bed elevated from 30 to 45 degrees significantly improved oxygenation and ventilation and also reduced the incidence of ventilated acquired pneumonia (VAP) in patients with MV. Based on the evidence of the improving of oxygenation and ventilation, the author assumed that it also may influence the reduction of discomfort and promotion of comfort in patients with mechanical ventilation.

Suctioning. Endotracheal suctioning is a component of bronchial hygiene therapy in mechanical ventilation and involves the mechanical aspiration of pulmonary secretions from a patient with an artificial airway in place (Coyer et al., 2007). In patients with mechanical ventilation who were unable to mobilize their secretions, there may be a need to suction any secretions from the oropharynx and/or trachea in order to maintain airway clearance (Grap, Blecha, & Munro, 2002). Jones, Newton, and Bower (2004) stated that suctioning may increase patient comfort during ventilator treatment. It may be done through an endotracheal tube, tracheostomy tube or through the nose or mouth into the trachea. Although each procedure is slightly

different, indications, supplies, procedures and risks are similar (Jones, Newton, & Bower, 2004).

Mouth care. Evidence based practice by O'Reilly (2006) showed that good oral care is required to avoid possible complications such as nosocomial infections, but also to promote both physical and psychological comfort in patients with mechanical ventilation. Similarly, Munro and Grap (2004) found that frequent mouth care has been reported as significantly increased patient comfort and suggested to perform oral care for every two to four hours to improved oral hygiene.

Effective communication. Tracy and Chlan (2011) mentioned that nurses commonly use positive body language, friendly facial expression, eye contact and touching to reduce patient distress during mechanical ventilation. Two studies of communication methods described non vocal communication techniques including gesture and mimics, lip-reading, eye contact, and touching to communicate with the patients with mechanical ventilation (Nilsen, Sereika, & Happ, 2013; Otuzoglu & Karahan, 2014). Similarly, Martensson and Fridlund (2002) mentioned that another option which can be used as a communication method in patients with mechanical ventilation is pen and paper. This method is always a great strategy for the nurse and patient to be able to communicate with each other.

However, most of the strategies used augmentative and alternative communication (AAC) strategy during mechanical ventilation treatment. The American Speech Language Hearing Association defines augmentative and alternative communication as any method used as a means of communication when oral speech cannot be achieved (Grossbach, Stranberg, & Chlan, 2011)

The context of AAC strategies includes all form of communication that are used to express thoughts, needs, wants, and idea when an individual has a communication barrier that are inhibit potential to meet patients need of daily communication through natural communication. (Happ, Sereika, Garrett, & Tate, 2008). These strategies can be categorized in three parts: no technology strategies such as gesture, facial expression, and head nodes; low technology strategies such as drawing, writing, and point to alphabet board: and high technology strategies by using communication devices such as scan-spell, electrolarynx, supertalker, TechSpeak, E-Talk, etc. (Grossbach, Stranberg, & Chlan, 2011; Patak et al., 2006; Happ et al., 2010)

Complementary and alternative interventions. Complementary and alternative therapy has been used to promote comfort in patients with MV such as relaxation massage, therapeutic touch and emphatic physical contacts (Adomat & Killingworth, 1994), and music therapy (Besel, 2006; Ciftci & Otzunc, 2015). Complementary therapies might be an important alternative or adjunct to pharmacological intervention to treat symptoms of discomfort in patients with mechanical ventilation (Tracy & Chlan, 2011).

Nevertheless, music therapy was commonly used in nursing practice to be an effective intervention and an integral part of the plan for patient care (McCaffrey & Locsin, 2002). As a non-pharmacologic intervention, music has been used to relieve pain and anxiety and also to promote comfort in patients with mechanical ventilation (Almerud & Petersson, 2003; Besel, 2006; Chlan et al., 2013; Ciftci & Otzunc, 2015; Han et al., 2010). The effect of music can influence emotions through pitch and rhythmic vibrations that have effects within the limbic system where it can produce pleasant memories to sensory stimuli (Guzzetta, 1989)

The intervention of the Holy Qur'an recitation and its effectiveness. According to Tumiran et al. (2013), the Holy Qur'an recitation can be defined as an ancient and widely used intervention to recover from sickness and promote good health for Muslims. The most miraculous of Holy Qur'an recitation is also can be served as spiritual music, because the harmony with pleasant songs and harmonious vocal music of the Holy Qur'an recitation that can influence all Muslims when it is recited with the warm, beautiful voice and an attractive phonetic song (Mottaghi, Esmaili, & Rohani, 2011) even he or she does not understand the meaning of verse that being read or recited (Babaii et al., 2015).

Numerous studies have been conducted and provide evidence regarding the intervention of the Holy Qur'an recitation for Muslim patients in variety of setting, such as in hemodialysis patients (Baabamohamad et al., 2015; Hojjat, Zehadatpour, & Nasr, 2010), abdominal surgery patients (Ajorpaz, Aghajani, & Shahshahani, 2011), post cardiac surgery (Babaii et al., 2015; Nasiri et al., 2015), post cesarean section (Beiranva et al., 2014), patients' mental health (Mahjoob et al., 2016), and patients with mechanical ventilation (Awa, 2014; Ariff et al., 2013).

From the review of literatures, the effectiveness of the Holy Qur'an recitation will be categorized into the comparison of the Holy Qur'an recitation and music therapy, the effect of the Holy Qur'an and anxiety, and the effect of the Holy Qur'an recitation in mechanically ventilated patients.

The comparison of the Holy Qur'an recitation and music therapy. Several studies have been conducted to compare the intervention of the Holy Qur'an recitation and music therapy in the variety of settings. Previously, an experimental study conducted by Hojjat (2010) has compared the effect of the Holy Qur'an recitation and

music therapy on the adequacy of dialysis in 69 patients with end-stage renal disease that were selected by purposive sampling. The intervention of the Holy Qur'an recitation and music therapy was provided for 30 minute in each group. The Glock-Stark religiosity questionnaire was used to measure the outcome. Results of the study found the comparison of the improvement of dialysis adequacy in the Holy Quran recitation group was significantly different compared to the music group. The participants who received the Holy Qur'an recitation showed their adequacy of dialysis is higher than the participants who received music therapy.

A study by Al-Gala et al. (2015) conducted an experiment to explore human emotions while listening to the Holy Quran recitation compared with listening to relaxing music. Thirteen students from university were selected to listening to the Holy Quran recitation and relaxing music for 12 minutes. While listening to these voices, the emotion model was implemented to recognize four basic emotions including happy, fear, sad and calm and record the electroencephalograms (EEG) acquired signals. The result showed that listening to Quran recitation can change the valence from negative emotions to positive emotions same as relaxing music. But, the arousal showed a noticeable change during listening to the Holy Quran recitation neither to relaxing music.

In similar, a study by Zulkarnain et al. (2012) was investigated and compared the effects of listening to the Holy Qur'an recitation and classical music on human brain wave by using EEG. Twenty-eight healthy participants were randomly selected with age range 20 to 28 years old. In the Holy Qur'an recitation group, the participants were exposed with the recitation of Surah Yasiin through headphone from MP3 player for 15 minutes. To get a consistent data, the participants were advised to

position themselves properly and minimize their movement. The EEG signals was recorded for three states, which are before, during and after listening to the Holy Qur'an recitation and classical music. Results of the study demostrated that 12.67% of the samples showed improvement in the alpha band before and after listening to the Holy Quran while only 9.96% improved before and after listening to classical music. These finding indicated that the alpha percentage increased with higher value when listening to the Holy Qur'an recitation compare to listening the classical music.

The Holy Qur'an recitation and anxiety. Based on the literature review, previous studies has utilized the effect of the Holy Qur'an recitation on patients' anxiety in various population such as in hemodialysis patients (Baabamohamad et al., 2015; Hojjat, Zehadatpour, & Nasr, 2010), before abdominal surgery (Ajopraz et al., 2011), and before cardiac catheterization (Babaii et al., 2015)

A study by Ajopraz et al. (2011) conducted a randomized control trial to examine the effectiveness of listening to music and the Holy Qur'an recitation on patient's anxiety and vital signs before abdominal surgery. Ninety patients who were scheduled to undergo abdominal surgery were randomly assigned to three groups of music, the Holy Qur'an recitation and control. The experimental group received listened to the music and the Holy Qur'an recitation for 20 minute before surgery. Surah *Yasiin* from the Holy Qur'an recited by a *Qari* was used. In control group, patients received no intervention. To measure anxiety, the author used Spielberger's State Anxiety Inventory and vital signs were measured before and after intervention. Results of the study showed that patients in music and the Holy Qur'an recitation group experienced significantly less anxiety (p=0.001), decreased patient's heart rate

(p<0.02), and blood pressure significantly (p<0.004). However, there were no significant changes in the control group.

Moreover, a randomized controlled trial was conducted by Babaii et al (2015) to investigate the effect of the Holy Qur'an recitation on anxiety before cardiac catheterization. Sixty patients who met the inclusion criteria were conveniently sampled and randomly allocated to the experimental and control groups. In the experimental group, patients received of listening the Holy Qur'an recitation (Surah Yaseen with the voice of Sheikh Mishary bin Rashid Alafasy) was played back with a headphone for each patient for 18 minute, whereas in the control group, patients had 18 minutes of rest in bed. The level of anxiety was measured before and after the intervention by using the State-Trait Anxiety Inventory (STAI). The findings of the study demonstrated that the mean scores of total STAI significantly decreased after the intervention (P=0.000). Its indicate that the intervention of the holy Qur'an recitation can significantly reduce anxiety in patients before cardiac catheterization.

The Holy Qur'an recitation on mechanically ventilated patients. Recently, there are limited studies has investigated the effects of the Holy Qur'an recitation in patients with mechanical ventilation. A study by Awa (2014) conducted an experimental study to examine the effects of listening to Holy Quran recitation on the physiological stress response of 44 ICU Muslim patients who selected by purposive sampling method. The experimental group of this study received a single 30 minute session of listening the Holy Qur'an recitation and through headphones from MP3 recorder. The volume of the MP3 player adjusted based on participants satisfaction by observing their facial expression. Awa (2014) used the recitation of surah Al-Fatihah and surah Yassin which was recited by *Qari* with correct *tajwid*, pronunciation, and

tarannum. The outcomes measured by using physiological parameters including heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP), mean artery pressure (MAP), respiratory rate (RR), and saturation of partial oxygen (SPO2). Data were collected at baseline before the intervention started, and followed by 5 minutes interval during the 30 minutes intervention and 5 minutes after the intervention completed. The result of the study reported listening of the Holy Qur'an recitation significantly have interaction effect over the 30 minutes intervention on within subject effect. There were no significance changes for all physiological parameter, except on HR means score was significantly yeilded overtime.

In related study, Ariff et al. (2013) explored the effectiveness of the Holy Qur'an on hemodynamic of Muslim patients with mechanical ventilation. The intervention of study was provided a session to listen the Holy Qur'an recitation at nonspecific time during the participant receiving mechanical ventilation. Surah Yassin has been chosen that recited by *Qari* through MP3 recorder. The outcome was measured in four parameters including mean arterial blood pressure (MABP), pulse rate (PR), oxygen saturation level (SPO2) and electrocardiographic (ECG) changes. The data were collected before and during the recitation of the Holy Qur'an with five-minute interval between each session and recorded in a designated form. The result of the study showed there was no statistical difference between mean of all four parameters observed before and during the Holy Qur'an recitation.

Nursing Comfort Care Integrating With the Holy Qur'an Recitation

Nursing comfort care integrating with the Holy Qur'an recitation in Muslim patients with mechanical ventilation of this study was adapted by using the concept of comfort care by Kolcaba (2003). In this study, the design of nursing comfort care involved three types of comfort intervention that can be implemented to promote comfort of Muslim patients with mechanical ventilation. The descriptions of the nursing comfort care integrating with the Holy Qur'an recitation of this study are described as follow:

Standard comfort intervention. Standard comfort intervention for Muslim patients with mechanical ventilation of this study was focused on (1) monitoring hemostasis stability of the patients by assess clinical outcome of the patients with mechanical ventilation that consists in stability of heart rate (HR), blood pressure (BP), respiratory rate (RR), body temperature (BT), and pulse oxygen saturation (SpO2), (2) assessment of comfort scale and pain intensity by using Comfort Rating Scale (CRS) and Pain Rating Scale (PRS) to identify patient's readiness to participate in the next interventions, and (3) maintaining physical function of mechanically ventilated Muslim patients by collaborate with ICU nurses in providing usual care of nursing intervention, including positioning, suctioning, mouth care, and the administration of medications.

Mechanically ventilated patients are required to observation and monitoring continuously (Couchman, Wetzig, Coyer, & Wheeler, 2007). Monitoring patients clinical condition during mechanical ventilation is essential because clinical status often rapidly changing and unpredictably. The change of clinical conditions may be affected by the underlying illness, medications, organ failure, and setting of the

ventilator (Chop & Chang, 2014). Vital sign monitoring can be used as overall information related to patients conditions. Moreover, changes in vital sign may be associated with many different symptoms, for example the elevation of heart rate, blood pressure, and respiratory rate could be indicating sign of pain, anxiety, stress, dyspnea, or fear (Campbell & Happ, 2010; Chop & Chang, 2014).

The assessment of comfort in mechanically ventilated patients is important to investigate level of comfort of the patients, with correct identification it necessary to apply basic intervention to promote comfort during mechanical ventilation (Couchman, Wetzig, Coyer, & Wheeler, 2007). Comfort assessment employed to achieve an outcome of nursing care, and it is not providing to cure a disease, but usually used supportively in managing and alleviating symptoms (Oliveira, 2013).

Furthermore, pain is also an important problem and a common distressing symptom in mechanically ventilated patients due to several causes such as their underlying health condition, catheter or endotracheal tube insertion, body restraint because patients are immobile. Moreover, mechanically ventilated patients also experience pain related to procedures performed by healthcare including medical examination, nursing care, and transportation (Clukey, Weyant, Roberts, & Henderson, 2014). The physiological response of pain mostly adverse, it may lead to unstable hemodynamic status, alteration of immune system, hyperglycemia, and increasing of catecholamine, cortisol, and antidiuretic hormones. As well as impacted in psychosocial effects such as anxiety, depression, delirium, and disorientation (Stites, 2013).

Appropriate assessment is the first step in managing pain in mechanically ventilated patients. It can be measured by patient self-report of pain effectively.

Nevertheless, mechanically ventilated patients are unable to communicate verbally because of their conditions. Several assessment tools has been used to identify the level of pain in mechanically ventilated patients, such as changes in vital sign as indicators of pain (Besel, 2006), and observational measurement can be used as the alternative approaches for identify level of pain of mechanically ventilated patients (Ayasrah, 2016).

Coaching. The coaching intervention of this study can be provided by; (1) advocating the patients and family members to communicate comfort needs of the patients through the uses of communication media such as pen and paper or communication board to convey patients' comfort needs, and (2) reassuring the patients and the family members that the researcher will pay attention for any verbal and nonverbal response of the patients.

In general, coaching can be defined as a specific approach by communication designed to facilitate a positive change of the patients from their current state to a more desire future state (Pentland, 2014). Based on a study by Olsen (2014) described coaching is an emphasize collaboration to guide the patient to enhance positive outcome and lasting behavioral change through individualized support and reinforcement. Similarly, Fahey et al. (2008) decribed coaching as a education method that guide patient to participates actively in behavior change. The intervention of coaching also can be used to guided and improved patient's health and wellness (Huffman, 2016).

An effective coaching intervention required interpersonal communication skill of the coach to facilitate patient's learning and development (Eileen & Karen, 2007). Coaching is not like counseling or mentoring, but in coaching process a coach does

not offer advice to patients, but by them to brainstorm their ideas and establish steps that they can achieve (Swarbrick, Murphy, Spagnolo, & Gill, 2011). Based on the literature review, several studies have been conducted coaching intervention using Comfort Theory as the framework to enhance comfort in variety of settings.

Comfort food for the soul. The intervention of comfort food for soul consisted of; (1) collaborating with the family in preparing the patients to prayer (*salat*) based on Muslim rituals, by involving the family to help the patients to ablution (*wudhu*) before performing the prayer (*salat*) which consists of washing the exposed body parts including the mouth, nose, face, head, ears, arms, and feet with sterile water by using bottle spray, and facilitating the patients to perform prayer (*salat*) while lying down on the bed; and (2) providing a session to listen the Holy Qur'an recitation (Surah Al Fatihah and Surah Yassin) that was recited by a Qari through headphone from MP3 recorder for 15 minutes.

Salat for Muslim patients could promote health and well-being (Mohammed, Nelson, Wood, & Moss, 2015). The activity of *salat* can be part of cognitive training, coping strategies, rehabilitation therapy, and a source of psychological support for Muslim patients (O'Brein, 2014). For the Muslim family members were behaving with stoicism and were found to be more engaged in helping the patients to perform *salat* (Al-Mutair et al., 2013). Therefore, when the patients need to pray and has particular rituals associated with it, such ablution (*wudhu*), nurse should be identified the need to help the patients and their family to develop strategies for praying. For example nurse can provides bottle of spray water to perform ablution (*wudhu*) for the patients who cannot do it in normal condition.

In Islam, the meaning of cleanliness and purification are not only requirements for the performance of prayer or worship, but are part of Muslims faith (Rassool & Sange, 2014). Rassool and Sange (2014) defines ablution (*wudhu*) is the act of cleansing oneself prior to performing prayer or worship, which consist of washing the exposed nody parts including mouth, nose, face, head, ears, arms, and feet. Moreover, the ablution (*wudhu*) or ritual washing has which means that the person must be free from all impurities (Gulam, 2003). For this reason it is an important for Muslims to ablution (*wudh*u) before performing prays (*salat*) and also handling the Holy Qur'an. This rituals has been regulated by Islamic rules that as revealed in the Holy Qur'an (Gulam, 2003). The Holy Qur'an states "…when you intend to offer the prayer, wash your hands (forearms) up to elbows, rub (by passing wet hands over) your head, and (wash) your feet up to angkle. If you are in state of Janaba (i.e had a sexual discharge), purify your self (bath your whole body). But if you are ill or on a journey or any of you come from answering the call of nature, or you have been in contact with women (i.e sexual intercource) and you find no water, then perform *Tayammum* with clean earth and rub there with your faces and hands" (Surah Al-Maidah verse 5-6). According to this verse, it was mentioned clearly about the steps of ablution, and also how important ablution (*wudhu*) for Muslim people, even in state of illness.

Moreover, the literature revealed evidence from several studies that *tajwid*, pronunciation, and duration of the Holy Qur'an recitation can influence the physiologic and psychological response after listening to the Holy Qur'an recitation (Ajorpaz, Aghajani, & Shahshahani, 2011). *Tajwid* is one of the most important sciences of the Holy Qur'an. *Tajwid* can be referred to the rules of pronunciation

during recitation of the Holy Qur'an. It could also be defined as giving every letter in the Holy Qur'an with the right articulation, right characteristics, and also in right stopping and starting recite the Holy Qur'an. Correct pronunciation is also considered when reciting the holy Qur'an.

Furthermore, most of the studies used Surah Al-Fatiha and Surah Yasiin of the Holy Qur'an in providing the intervention of the Holy Qur'an recitation. Surah Al-Fatiha is a matchless Surah revealed in the Holy Qur'an. Muslims recite this Surah in every prayer (*salat*). Indeed, their prayers are incomplete without the recitation of Surah Al-Fatiha. Muslims believe that the recitation of Surah Al-Fatiha is the best treatment to cure many diseases. Surah Yasiin is the 36th surah of the Qur'an and is considered as the heart of the Qur'an in many narratives (Babamohamadi et al, 2015). An evidence showed the alpha band of brainwave was significantly increased while the person were listening to Surah Yasiin. This indicates that the participants were more relaxed and calm when they listened to Yasiin (Alhousein et al., 2014).

Purnawan et al. (2012) was conducted a study to examine the effect of the Holy Qur'an recitation on conciousness of patients with haemorragic stroke. The reserchers was utilized the Holy Qur'an recitation with a constant rhythm, the amplitude of 30-50 decibels, the bit rate is 64 Kbps through Mp3 player. The duration for the participants to listening to the Holy Qur'an recitation is 30 minutes after receiving routine nursing care, between 10 to 11 am in three days of intervention. Results of the study showed 30.7 % of the conciusness of stroke patients have increased significantly after receiving the Holy Qur'an recitation.

Summary of the Literature Review

Based on the review the literatures, the concept of comfort were clearly explained in the literatures, included the definition of comfort, Theory of comfort and its application in various settings. In patients receiving mechanical ventilation may result in decreased of patients' comfort during their treatment. Decreasing of comfort in mechanically ventilated patients can be related to unmet of holistic comfort needs that can be categorized in Kolcaba's four context of comfort, namely, physical, psichospiritual, environmental, and sociocultural comfort needs. Furthermore, several identified factors also can influence comfort during receiving mechanical ventilation including age, gender, duration using mechanical ventilation, and ventilator settings. Comfort in mechanically ventilated patients can be assessed by both subjective and objective measures. The GCQ can be used to assess comfort in mechanically ventilated patients taking into consideration each context of comfort and the CRS is reliable to assess total comfort in mechanically ventilated patients.

In order to promote comfort in patients with mechanical ventilation, various basic interventions can be addressed, including pharmacological, nursing care, and complementary interventions. However, nurses need to consider an appropriate intervention related to the fulfillment of the needs of comfort. The nursing comfort care which entails at least three types of nursing comfort interventions that can be implemented to achieve the goal of enhancing patients' total comfort including physical, psychospiritual, environmental, and sociocultural comfort. In particular, nurses can utilize the intervention of the Holy Qur'an to promote comfort of mechanically ventilated patients, especially Muslim patients. The Holy Qur'an recitation is relatively new in critical nursing care. The Holy Qur'an recitation can be

defined as a form of music and chant which is very effective for Muslim patients because the sound of the recitation is deeply spiritual.

Nursing comfort care integrated with Holy Qur'an recitation is a nursing care intervention based on the concept of comfort care from Kolcaba's Comfort Theory which consists of three types of comfort care intervention namely standard comfort intervention, coaching intervention, and comfort food for soul. The integration of the Holy Qur'an recitation in the nursing comfort care can makes this intervention more complete to enhance comfort in Muslim patients with mechanical ventilation.

Chapter 3

Research methodology

This chapter discusses the research design, population and setting, sample size, instrumentation, data collection procedures, ethical consideration and data analysis of the study.

Research Design

This study was a quasi-experimental study with pre-test/posttest design. The purpose of this study was to examine the effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort of Muslim patients with mechanical ventilation in the experimental group and the control group. The research design as follows:

	Pre-test	Post-test
Control group	O_1 ⟶	O_2
Experimental group	O_1 — X ⟶	O_2

O_1 refers to the baseline data (pre-test score) on comfort scale in Muslims patients with mechanical ventilation.

X refers to the nursing comfort care integrating with the Holy Qur'an recitation in Muslim patients with mechanical ventilation.

O_2 refers to the data on comfort scale after receiving nursing comfort care integrating with the Holy Qur'an recitation (post-test score).

Settings

This study was conducted in the intensive care units of three public hospitals in West Sumatra, Indonesia. They were M.Djamil Hospital, Dr.Achmad Mochtar Hospital and YARSI Islamic Hospital. These three hospitals are referral hospitals in West Sumatra Province, Indonesia, which hand over critical patients who need mechanical ventilation. Each ICU of the hospitals has 8 to 14 beds which furnished with the bedside monitor for each bed, and also has at least 10 ventilators.

Among three hospitals, the management of comfort for patients with mechanical ventilation has adjusted based on standard operational procedures and regulations of the Health Ministry of Indonesia that generalized as basic management in caring patient with mechanical ventilation in ICU. Moreover, based on the information from the ICU head nurse of these three hospitals, nurses provide routine nursing care intervention to the patients with mechanical ventilation according to the assessments findings during hospitalization. The mean length of stay of the patients with mechanical ventilation in these three hospitals is around two to four days, in particularly for the patients with fully consciousness who received mechanical ventilation.

Population and Sample

Target Population. The target population of this study was Muslim patients with mechanical ventilation who admitted to intensive care unit (ICU) of M.Djamil Hospital, DR.Achmad Mochtar Hospital and YARSI Islamic Hospital in West Sumatra, Indonesia. The participants of the study consisted of 56 Muslim patients

with mechanical ventilation who met the inclusion criteria and who agreed to participate.

Sample size. A power analysis by using effect size (*d*) from the previous study was used to estimate the required sample size of this study. A study by Awa (2015) used the Holy Qur'an recitation to reduce physiological stress response among patients with mechanical ventilation in Malaysia. The effect size calculation of that study was .80 (Appendix A). According to Polit and Back (2012), to achieve alpha of .05, power (p) of .80, with the effect size (d) of .80, at least 20 participants were required per group (experimental and control group). Additionally, to prevent type II error of this study, the sample size needs to increase by 20 % for each group (Polit & Beck, 2012). Thus, the total sample of each group was 28 Muslim participants with mechanical ventilation in the experimental group and 28 participants in the control group.

Inclusion and exclusion criteria. The inclusion criteria to select the participants are as follow; (1) Muslim patients with mechanical ventilation; (2) age more than 18 years old; (3) have fully consciousness with Glasgow Coma Scale 10T; (4) able to write and read in the Indonesia language; (5) had no hearing and cognitive impairments that was assessed by the ICU nurses; (6) have stable hemodynamics; and (7) agree to participate. The participants of this study were excluded if they: (1) received continuous sedative agents, or (2) any continuous intravenous analgesia; and (3) have mental health problem that can be identified from the medical history of the participants.

Sampling procedures. The sampling procedure of this study was used the purposive sampling technique to select eligible subjects to participate in this study. The samples of this study were recruited from the intensive care unit of M.Djamil Hospital, DR.Achmad Mochtar Hospital, and YARSI Islamic Hospital.

The potential participants who met the inclusion criteria occurred through the ICU's of these three hospitals, the ICU nurses were selected and approached the potential participants to ascertain their interest in this study. Afterwards, the researcher gave an explanation to the eligible participants regarding the purpose of the study, informed consent, procedures, risks, benefits, and confidentiality before the eligible participants consent to participate in the study. Then, the participants who consent to participate were matched based on gender (male and female), age (± 5 years), and duration using mechanical ventilation (± 1 day). The first participant who met the inclusion criteria was assigned by using a lottery to either the experimental group or control group. If the first patient was assigned to the control group, then the next patient who met the inclusion criteria and matched with the characteristic of the first participants was assigned to the experimental group. This technique was continuously run until the researcher obtained the total number of 28 participants in the experimental group and 28 participants in the control group.

Instrumentation

Two sets of instruments were used in this study. The first set is data collection instruments and the second set is the intervention of nursing comfort care integrating with the Holy Qur'an recitation.

Data collection instruments. The instruments for data collection in this study were used Demographic and Clinical Characteristics Questionnaire (DCCQ) and Comfort Questionnaire for Mechanically Ventilated Patients (CQMVP).

Demographic and Clinical Characteristics Questionnaire (DCCQ). The DCCQ consisted of multiple choice and dichotomous questions. This questionnaire developed by the researcher in order to collect demographic data and clinical characteristics of the participants that consisted of twelve items including age, gender, marital status, religion, level of education, occupation, diagnosis, ventilator setting modes, duration using ventilator, current medication used, and others technology devices used. These data were collected by the researcher or an assistant on the patient's medical records.

Comfort Questionnaire for Mechanically Ventilated Patients (CQMVP). Accordingly, the researcher obtained permission from Kolcaba to use, to modify, and to translate the shortened version of GCQ (Kolcaba, 2006) in this study. Therefore, the researcher was modified the shortened version GCQ by Kolcaba (2006) into Comfort Questionnaire for Mechanically Ventilated Patients (CQMVP) due to the relevancy of the questionnaire to the patients with mechanical ventilation and the consideration of the patients' limitation to answer the question because their difficulties to communicate verbally.

The CQMVP was modified by deleted 18 questions (item 2, 4, 5, 6, 8, 11, 12, 13, 17, 19, 20, 21, 22, 23, 24, 25, 27, 28) from the shortened version of GCQ (Kolcaba, 2006) and then the researcher was used and modified the rest of the questions which is items 9 and 16 to identify physical comfort, items number 3, 15 and 26 to identify psychospiritual comfort, items 7, 14 and 18 to identify

environmental comfort, and item 1 and 10 to identify sociocultural of comfort in the CQMVP. Hence, the researcher has added 6 questions related to each context of comfort. Totally, the 16 items of CQMVP has been covered all context of comfort which 4 items related to physical comfort, 5 items related to psychospiritual comfort, 3 items related to environmental comfort, and 4 items related sociocultural comfort (Appendix C).

The CQMVP is a Likert-type self-report instrument consisting of 6 positive statements and 10 negative statements that score in six responses (1 to 6) with the range from strongly disagree (1); very disagree (2); somewhat disagree (3); somewhat agree (4); very agree (5); and strongly agree (6). The total sum of scores is determined where the minimum score is 16 and the maximum score is 96. The higher score indicates the high level of comfort and the low score indicates the low level of comfort.

Nursing Comfort Care Integrating with the Holy Qur'an Recitation. Nursing comfort care integrating with the Holy Qur'an recitation in Muslim patients with mechanical ventilation of this study was developed based on Kolcaba's comfort care (Kolcaba, 2003) that entailed three types of comfort intervention to promote comfort of Muslim patients with mechanical ventilation. The nursing comfort care integrating with the Holy Qur'an recitation consisted of the following types as follow:

***Standard comfort intervention*.** The activities of standard comfort intervention were; (1) monitoring stability of the patients' hemostasis by assessing vital signs which consists of the stability of heart rate (HR), blood pressure (BP), respiratory rate (RR), body temperature (BT), and pulse oxygen saturation (SpO2), (2) assessment of comfort scale and pain intensity to identify patient's readiness to

participate in the next interventions, and (3) maintaining physical function of the patients by providing nursing interventions including patients positioning, suctioning, mouth care, and the administration of analgesic and sedative therapy as prescribing by physicians.

The instruments are needed for the standard comfort intervention are instrument tools that were used to record data during the intervention in this study including Comfort Rating Scale (CRS), Pain Rating Scale (PRS), Patients' Assessment Form (PAF), and Interventions Checklist Form (ICF).

Comfort Rating Scales (CRS). The CRS was used as follow up instrument to measure participant's comfort before and after receiving nursing comfort care integrating with the Holy Qur'an recitation in each two days of the interventions. The CRS was derived from the original version by Kolcaba (2003). CRS is a visual analog scale that presented number 0 to 10 in the vertical line. To rate comfort, the participants were asked to choose a number between 0-10, with 0 equaling no comfort at all to 10 equaling the highest possible comfort. Scoring was done by documenting the number of the patient chooses.

Pain Rating Scale (PRS). The PRS was used to assess pain intensity of the participants during the intervention period of this study. The PRS was developed to evaluate patients' pain intensity in various settings (Cho et., 2013). PRS is a verbally administered or visually presented scale with the numbers 0-10 placed along a vertical line. Same with the CRS, in assessing pain of this study, the participants were asked to choose a number between 0-10 to rate their pain, with 0 equaling no pain and 10 equaling the worst possible pain.

Patients' assessment form (PAF). The PAF was used as a form to record the clinical outcome of the participant in experimental group including BP, HR, RR, BT, SpO2, comfort scale, and pain intensity that were monitored before and after the intervention in each two days of the intervention period.

Intervention Checklist Form (ICF). ICF was used to record the providing of usual nursing intervention including positioning, suctioning, and mouth care that was provided by the ICU nurses within two days of the intervention. The ICF also was used to record the administration of analgesic and sedative therapy that was prescribed by the physicians at four hours before the intervention within two days.

Coaching intervention. The activities in coaching intervention of this study consisted of; (1) advocating the patients and family members to communicate comfort needs of the patients through the uses of communication media such as pen and paper or communication board to convey patients' comfort needs, and (2) reassuring the patients and the family members that the researcher pay attention for any verbal and nonverbal response of the patients during the intervention period.

Comfort food for the soul. The interventions of comfort food for soul included; (1) collaborating with the family in preparing the patients to prayer (*salat*) based on Muslim rituals, by involving the family to help the patients to ablution (*wudhu*) before performing the prayer (*salat*) which consists of washing the exposed body parts including the mouth, nose, face, head, ears, arms, and feet with sterile water by using bottle spray, and facilitating the patients to perform prayer (*salat*) while lying down on the bed; and (2) providing a session to listen the Holy Qur'an recitation (Surah Al Fatihah and Surah Yassin) that was recited by a Qari through headphone from MP3 recorder for 15 minutes.

Table 1.

Nursing Comfort Care Integrating With the Holy Qur'an Recitation

Type of comfort care intervention	Nursing intervention
Standard comfort intervention	(1) Monitoring stability of the patients' hemostasis by assessing vital signs which consists of the stability of heart rate (HR), blood pressure (BP), respiratory rate (RR), body temperature (BT), and oxygen saturation (SpO_2). (2) Assessing patients' comfort scale by using Comfort Rating Scale (CRS) and pain intensity by using Pain Rating Scale (PRS). (3) Maintaining physical function of the patients by providing nursing interventions including patients positioning, suctioning, mouth care, and the administration of analgesic and sedative therapy as prescribing by physicians.
Coaching intervention	(4) Advocating the patients and family members to communicate comfort needs of the patients through the uses of communication media such as pen and paper or communication board to convey patients' comfort needs. (5) Reassuring the patients and the family members that the researcher will pay attention for any verbal and nonverbal response of the patients during the intervention period.
Comfort food for the soul	(6) Collaborating with the family in preparing the patients to prayer (*salat*) based on Muslim rituals, by; a. Involving the family to help the patients to ablution (*wudhu*) before performing the prayer (*salat*) which consists of washing the exposed body parts including the mouth, nose, face, head, ears, arms, and feet with sterile water by using bottle spray b. Facilitating the patients to perform prayer (*salat*) while lying down on the bed (7) Providing a session to listen the Holy Qur'an recitation (Surah Al Fatihah and Surah Yassin) that was recited by a *Qari* through headphone from MP3 recorder for 15 minutes

Translation of the questionnaire. The CQMVP was translated with back-translation technique (Brislin, 1970) from English version in three phases. Phase 1, original English version translated into the Indonesian language. In phase 2, the second bilingual translator independently translated the Indonesia version back into English version . In phase 3, an English expert was evaluated both the original questionnaires and the back translated English versions to ensure the equivalence of the two versions. The revisions of Indonesian language version were performed the equivalence of the two versions are met.

Validity and Reliability of the Instruments.

Validity. The content validity of the instruments and the intervention of the study were assessed and validated by a panel of four experts. They included three experts in critical care nursing, adult nursing, quantitative study design and one expert in the Holy Qur'an recitation (Appendix H). Among four experts, three experts were validated the CQMVP, DCCQ, and the intervention of the nursing comfort care integrating with the Holy Qur'an recitation and another expert was validated the content of the Holy Qur'an recitation including *tajwid*, pronunciations, *Surah* of the Holy Qur'an, and the reciter (*Qari*) of the Holy Qur'an.

According to the validity test of the instruments and the intervention of the nursing comfort care integrating with the Holy Qur'an recitation, the scale content validity index (S-CVI) of the CQMVP was .92, DCCQ was .87, and the intervention of the nursing comfort care integrating with the Holy Qur'an recitation was 1. The validation of the Holy Qur'an recitation was appropriated to use in this study.

Reliability. After the CQMVP was translated into Indonesian language by using back translation technique, the researcher tested the reliability of the instrument

(CQMVP) in ten Muslim patients with mechanical ventilation who met same inclusion criteria with the actual study. The Cronbach's alpha coefficient of the CQMVP was .81. The Cronbach alpha coefficient of the instrument is more than .70 can be determined that the instrument is reliable to use in the actual study (Polit & Beck, 2012).

Pilot Study

According to Polit and Beck (2012) described a pilot study is a small-scale version or trial conducted before the major study to see the plausibility of the study. In this study, a pilot study was conducted to construct a methodological approach to evaluate the feasibility of the planned intervention procedures. Three eligible participants from those 10 participants who involved in the reliability test were received the nursing comfort care integrating with the Holy Qur'an recitation for two days. The result of the pilot study showed the design of nursing comfort care integrating with the Holy Qur'an recitation seemed feasible to address in actual study, and it could improve comfort of Muslim patients while receiving mechanical ventilation.

Data Collection

Data collection was conducted at M.Jamil Hospital, Dr.Achmad Mochtar Hospital and YARSI Islamic Hospital in West Sumatra, Indonesia. There were two phases of data collection; preparation phase and implementation phase

Preparation phase. The steps of preparation phase consists of: (1) prepared the instruments and informed consent, (2) prepared materials to conduct this study,

(3) obtained research approval from the Faculty of Nursing, Prince of Songkla University, (4) required official permission from the director of Dr.Achmad Mochtar Hospital and YARSI Islamic Hospital to collect data at the ICU, (5) informed the head nurse and staff nurses in the ICU of the hospitals about the objectives of the study, data collection procedure, the intervention in the study, benefits of the study, and the risk of the study, (6) recruited one research assistant in each hospital who has at least a bachelor's degree in nursing and has experience in caring patients with mechanical ventilation, and (7) conducting training for the research assistant (RA).

The training process of the RA consisted of four steps; (1) the researcher discussed the objectives of the study, data collection procedure, the intervention in the study, benefits of the study, and the risk of the study with the RA, (2) the researcher provided a manual procedure of the instruments to measure comfort in patients with mechanical ventilation, (3) the researcher conducted a simulation about data collection procedures, and (4) the researcher evaluated the assistant frequently to ensure the data collection was complete for each participant in experimental group and control group.

In this study, the role or job descriptions of the RA is to recruit the participants for the study, to provide the ready access to implement the intervention of the study, to collect the pretest and posttest data by using CQMVP, to maintain the accurate of collected data, and safeguarding the confidentiality of the participants. The role of the researcher in this study is to provide the intervention of nursing comfort care integrating with the Holy Qur'an recitation and to gather follow up data by using CRS, PRS, and vital signs. In order to minimize biases, the RA has not informed to the participants, either in both experimental and control group.

Implementation phase of the study. The steps of the implementation phase of this study were started after obtaining permission from the head nurse. Then, head nurse and staff nurses were help to select potential participants who meet the inclusion criteria. After eligible participants were selected by the nurses, the researcher approached the participants and explained the purposes, benefits, potential risk, confidentiality, and procedure of the study. The participants who agreed to participate in this study were signed the informed consent (Appendix K).

After the participants confirmed and consent to participate in the study, prior to beginning data collection in both experimental and control group, the researcher began data collection by using DCCQ. Demographic and clinical characteristic of the participants were collected primarily from participants' medical record including age, sex, marital status, medical diagnosis, ventilator mode, current medication, duration using mechanical ventilation, and others technological devices used. Afterward, the RA continued to collect pre-test data with CQMVP in both groups.

Participants in the control group were received usual care and participants in the experimental group were received usual care and the nursing comfort care integrating with the Holy Qur'an recitation for two days. The interventions in the experimental group was same in the first days and the second day (Appendix C), which consisted of; (1) In the beginning the researcher assessed the stability of vital signs by record heart rate (HR), blood pressure (BP), respiratory rate (RR), and from the bedside monitor, and the researcher measured body temperature (BT) of the participants by using thermometer. If the participants have an abnormal vital sign, the researcher reported this problem to head nurse or staff nurses to give appropriate nursing care, then when the vital sign have returned to normal or stable, the researcher

continued the intervention, (2) the researcher assessed comfort scale by using Comfort Rating Scale (CRS) and pain intensity by using Pain Rating Scale (PRS), (3) the result of patients assessment including vital signs, comfort scale and pain intensity were documented on the Patients' Assessment Form (PAF), (4) the researcher checked the usual nursing intervention including positioning, suctioning, mouth care that were provided by the nurses and the administration of analgesic and sedative therapy as prescribed by physicians at four hours before the intervention, and then the researcher recorded on the Intervention Checklist Form (ICF), (5) the researcher advocated the patients and family members about communication of patients' comfort needs through the uses of communication media such as pen and paper or communication board to convey patients' comfort needs, (6) the researcher reassured the patients and the family members that the researcher will pay attention for any verbal and nonverbal responses of the patients during the intervention period, (7) the researcher involved the family members in helping the participants to ablution (*wudhu*) before performing prayer (*salat),* (8) the researcher facilitated the participants to perform prayer (*salat*), and (9) the researcher provided a session to listening to the Holy Qur'an recitation (Surah Al-Fatihah and Surah Yasiin) through headphone from MP3 recorder for 15 minutes.

The follow-up data gathered by the researcher before and after the interventions during two days including the measurement of patients comfort by using Comfort Rating Scale (CRS), pain intensity by using Pain Rating Scale (PRS), and vital signs except on BT. Then, on the last day (Day 2) of the interventions period, the RA re-collected post-test data by using CQMVP at hour after the intervention was

completed in both groups. The details of the data collection and implementation of the interventions are presented in Figure 2:

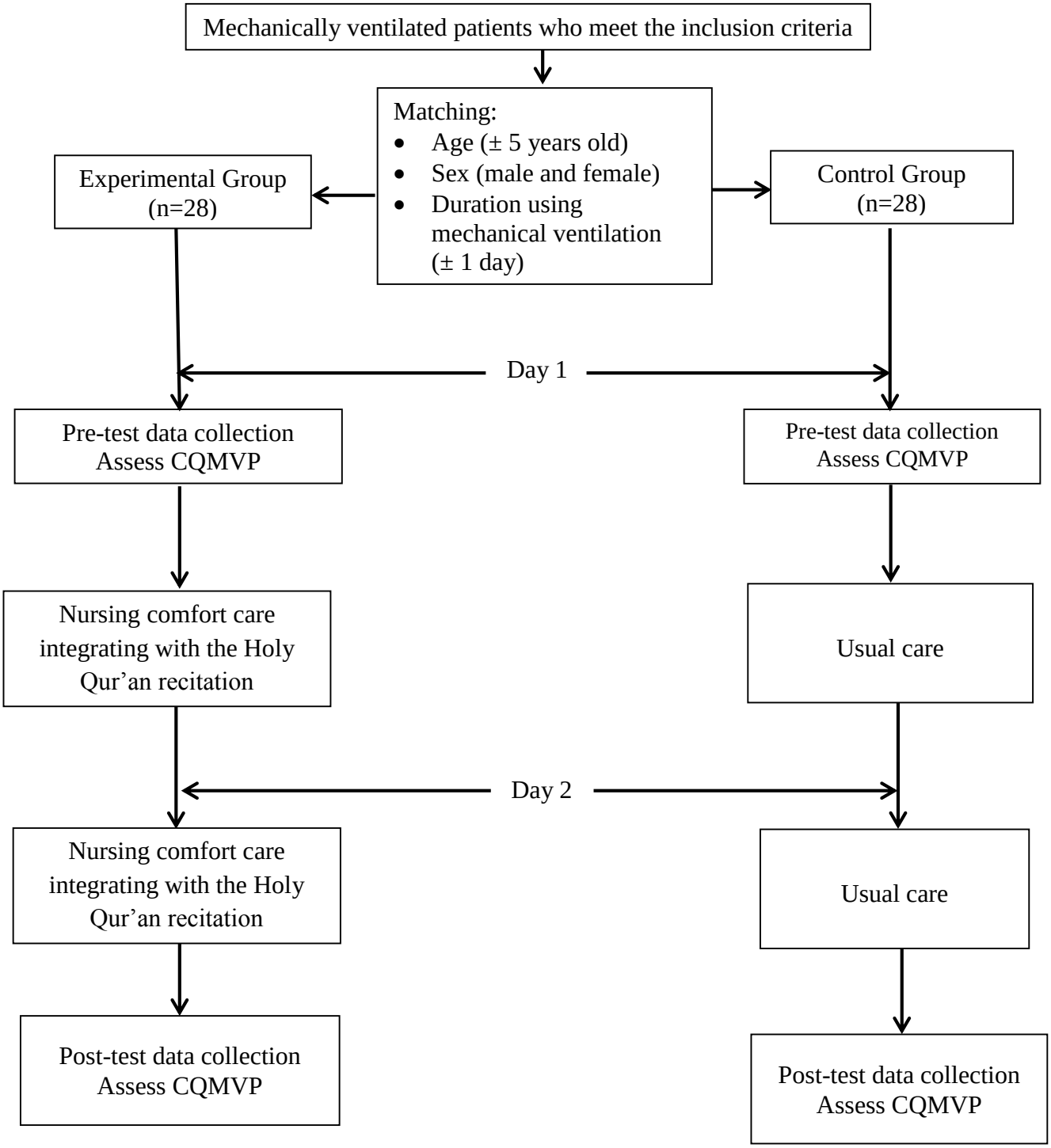

Figure 2. Data collection and implementation of the study on the effects of nursing comfort care on comfort in Muslim patients with mechanical ventilation

Ethical Considerations

In regard to the protection of human subjects**,** permission to conduct this study was approved by the Ethic Research Committee of the Faculty of Nursing, Prince of Songkla University and Medical University of Andalas University West Sumatra, Indonesia. This study also obtained permission for data collection the health Ministry of West Sumatra Province, Indonesia. Moreover, Director of the M.Djamil Hospital, Achmad Mochtar Hospital, YARSI Islamic Hospital also given permission to collect data in ICU's. Before collecting data, the researcher has met with the head nurse of intensive care unit of each hospital to explain the objectives of the study, data collection procedure, the intervention in the study, benefits of the study, and potential risk of the study.

In the process of recruiting the participants, the head nurse or staff nurses were asked to introduce the researcher to the potential participants. Afterward, the researcher approached targeted participants and ascertained whether they are willing to participate in this study or not. The participants who were agreed to participate were explained that they would be assigned into experimental group or control group. The participants were received all of information including procedures of the intervention, and the benefits of the study that can be useful to enhance comfort in Muslim patients with mechanical ventilation.

There was a minimum risk of the intervention in this study. However, to prevent the potential risks in this study, the researcher was assessed the condition of the participants in the prior of the intervention and the researcher was constantly observed the participants during the intervention. The potential risks of this study may relate to the physiological risk of the participants due to their illness such as the

change of hemodynamics and breathing problem during the intervention. Moreover, the participants may feel fatigue due to lack of energy to answer the questions at data collection. To prevent the this risk, several strategies can be implemented such as; (1) if the participants developed difficulty breathing or unstable hemodynamic during the intervention and data collection, the activities were discontinued and provided assistance immediately, and (2) if the participants feel fatigue or tired during the intervention or answering the questionnaire, the intervention or data collecting were stopped and were resumed at a later time when the participants was ready and able to continue the intervention or answering the questionnaire.

Furthermore, the participants were informed their participation is voluntary. The participants also were informed that they have right to withdraw from their participation in this study at any time, and there is no penalty incurred if the participants has decided to withdraw. Moreover, the decision of the participants to withdraw from the study will not influence to the receiving of the nursing care or any medical treatment.

To protect the human right, the researcher was provided an informed consent form to declare willingness and understanding of the participants to participate in this study. However, in mechanically ventilated patients, they have lack of physical capability to sign the consent. In this case, the researcher was obtained verbal consent from the participants to participate in this study. Then, the researcher asked the family members to sign the consent for the participants. The researcher kept the secrecy of the participant's information and identity by using a coding system. The coding method was used to maintain the anonymity of the subjects. All of the data was destroyed after the completion of the study.

Data Analysis

Upon completion of data collection, the test responses were scored according to the individual test directions. These results were entered into the Statistical Package for the Social Sciences (SPSS) data analysis program (version 17.0 for Windows). Descriptive statistics were used to analyze and describe demographic and clinical characteristics regarding age, gender, marital status, level of education, occupation, and diagnosis with frequencies, percentage, mean and standard deviation. Pearson Chi-Square test, Likelihood test, and independent t-test were used to determine the significance of demographic and clinical characteristics of the participants in the experimental group and the control group.

The assumption of normality and homogeneity of variance for inferential statistics were checked before the appropriate statistical analysis performed. The assumption of the normality was tested by using skewness and kurtosis value, while the homogeneity of variance was used Levene's test. The result of the assumption test showed that the data sets were normal distribution, and there were no significance score from the Levene's test ($p > .05$), that indicated that the assumption test of outcomes variables in both groups were met (Appendix L).

The independent t-test was used to analyze the differences of mean comfort scores between the experimental group and control group. The paired t-test was used to test the mean score of comfort within the experimental group between before and after receiving the nursing comfort care integrating with the Holy Qur'an recitation.

Chapter 4

Results and Discussion

This chapter presents and discusses the findings of the study. A total of fifty six Muslim patients with mechanical ventilation completed the protocol. There were 28 patients in the experimental group and 28 patients in the control group. The results are presented in two parts; (1) the demographic and clinical characteristic of the participants and (2) the effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort.

Results

Demographic data of the participants. The demographic data of the participants are presented in Table.2. Statistically, there were no significant differences between the experimental group and control group in term of demographic data. The age of the participants ranged between 20 to 73 years old, with average age was 51.07 years in the experimental group and 53.18 years in the control group. The majority of the participants in the experimental and control groups were male with an equal numbers (57.1 %), respectively. More than half of the participants were married (57.1% in the experimental group and 67.9% in the control group). In both groups, almost a half of the participants had education level of senior high school. Furthermore, half of the participants in the experimental group (39.3%) were retired or housewife, whereas the control group (50%) was non-employed.

Table 2

Frequency and Percentage of Demographic Data for the Experimental and the Control Groups (N = 56)

Characteristics	Experimental group (n = 28)		Control group (n = 28)		Statistic value	p
	n	%	n	%		
Age (years) (Min-Max = 20-73)	M = 51.07	SD = 12.88	M = 53.18	SD =11.59	.64[t]	.52
Gender					.00[a]	1.00
Male	16	57.1	16	57.1		
Female	12	42.9	12	42.9		
Marital status					1.90[b]	.59
Single	5	17.9	2	7.1		
Married	16	57.1	19	67.9		
Widow	2	7.1	3	10.7		
Divorced	5	17.9	4	14.3		
Educational level					1.92[b]	.75
Elementary school	3	10.7	4	14.3		
Junior school	6	21.4	5	17.9		
Senior high school	11	39.3	10	35.7		
Diploma/Bachelor	7	25.0	9	32.1		
Master degree	1	3.6	-	-		
Occupation					2.97[b]	.39
Student	2	7.1	1	3.6		
Employee	7	25.0	6	21.4		
Non-Employee	8	28.6	14	50.0		
Retired / Housewife	11	39.3	7	25.0		

Note: [a] = Chi-Square, [b] = Likelihood Ratio, [t] = Independent t-test

Clinical characteristics of the participants. The clinical characteristic of the participants consisted of: (1) current medical diagnoses, (2) modes of ventilator, (3) current medications, (4) duration of using ventilator prior the study, and (5) others technology devices that have been used beside mechanical ventilation as presented in the Table 3. Statistically, there was no significant difference in the clinical characteristics of the participants between the experimental group and the control group. Most of the participants in both groups were post-surgery that including laparotomy, hysterectomy, and cardiac surgery (42.9% in the experimental group, 46.4% in the control group). Half of the participants have received analgesic drugs in the experimental and control groups with an equal percentage (50%) such as fentanyl 0.2 mg or ketorolac 30 mg. The most ventilator mode used was BiPAP (Bi-level Positive Airway Pressure) (78.6% in the experimental group and 46.4 % in the control group). Most of the participants in the experimental group (82.1%) and the control group (78.6%) were used mechanical ventilation for 1 to 3 days, respectively. Moreover, most of the participants in both groups used 3 other technology devices that including syringe pump, infusion pump, and bed side monitor (78.6% in the experimental group and 82.1% in the control group).

Table 3

Frequency and Percentage of Clinical Characteristics of the Experimental and the Control Groups (N = 56).

Characteristics	Experimental group (*n* = 28)		Control group (*n* = 28)		Statistic value	*p*
	n	%	*n*	%		
Current medical diagnosis					2.85[b]	.83
Respiratory diseases (e.g., COPD, Pneumonia)	9	32.1	6	21.4		
Congestive Heart Failure	3	10.7	4	14.3		
Chronic Kidney Diseases	1	3.6	1	3.6		
Eclampsia	1	3.6	2	7.1		
Ischemic Strokes	-	-	1	3.6		
Post-surgery (e.g., Laparotomy, Cardiac surgery)	12	42.9	13	46.4		
Trauma (e.g. Chest trauma, abdominal trauma)	2	7.1	1	3.6		
Ventilator mode					1.582[b]	.66
BiPAP	15	78.6	13	46.4		
CPAP	9	17.9	10	35.7		
SIMV	4	3.6	4	14.3		
CMV	-	-	1	3.6		
Current medications					.868[b]	.83
None	10	35.7	9	32.1		
Analgesic drugs	14	50.0	14	50.0		
Analgesic + sedative drugs	4	14.3	7	17.9		
Duration of using ventilator (days)					.451[b]	.80
1 – 3	22	78.6	22	78.6		
4 – 6	5	17.9	4	14.3		
>6	1	3.6	2	7.1		
Other technology devices used					1.00[c]	.50
3 devices	22	78.6	23	82.1		
4 devices	6	21.4	5	17.9		

Note: a = Chi-Square, b = Likelihood Ratio, c = Fisher's Exact Test, BiPAP = Bilevel Positive Airway Pressure, CPAP = Continuous Positive Airway Pressure, SIMV = Synchronize Intermittent Mechanical Ventilation, CMV = Controlled Mandatory Ventilation, 3 devices= Syringe Pump, Infusion Pump, Bedside Monitor, 4 devices = Sharing Pump, Infuse Pump, Bedside Monitor, Central Venous Pressure Monitor

The effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort. Statistical analysis was conducted in order to determine the within-group effect and between-group effect of the nursing comfort care integrating with the Holy Qur'an recitation on comfort of Muslim patients with mechanical ventilation.

The comparison of posttest comfort scores between the experimental group and control group. The mean of comfort score of the participants in the experimental group after receiving the intervention (M = 67.82, SD = 8.65) was significantly higher than those in the control group (M = 54.29, SD = 5.94). Therefore, there was a significant difference in the mean of comfort scores after receiving the intervention between the subjects in the experimental group and the subjects in the control group (t = 6.70, p < .05) as presented in Table 4.

Table 4

The Comparison of Mean of Posttest Comfort Scores Between the Experimental Group and Control Group (N = 56).

Variables	Post-test		*t-test*	*p*
	M	*SD*		
Experimental group	67.82	8.65	6.70	.000
Control group	54.29	5.94		

The comparison of comfort scores within the experimental group and the control group. As shown in Table 5, comfort scores of the participants in the experimental group were significantly increased after receiving the intervention (t = 12.38, p < .05). As well, comfort score of the participants in the control group who received usual also increased significantly (t = 5.34, p < .05). However,

participants in the experimental group had significantly higher comfort score than the control group.

Table 5

The Comparison of the Mean of Comfort Scores within the Experimental and Control Groups (N=56).

Groups	Pre-test		Post-test		*t-test*	*p*
	M	*SD*	*M*	*SD*		
Experimental group	49.82	6.55	67.82	8.65	12.38	.00
Control group	49.61	5.33	54.29	5.94	5.34	.00

Discussion

The purpose of the study was to examine the effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort in Muslim patients with mechanical ventilation. The discussion of this chapter compares the findings with results of previous studies.

There were two hypotheses of the study; the first hypothesis of the study states that the mean score of comfort of the participants in experimental group who receiving nursing comfort care integrating with the Holy Qur'an recitation is higher than the control group who receiving usual care; and the second hypothesis states the mean score of comfort of the participants in the experimental group is higher than before receiving the nursing comfort care integrating with the Holy Qur'an recitation.

It is apparent from the findings that results have accepted both of the hypotheses of the study. The results revealed that the mean comfort score of the participants in the experimental group had significantly higher comfort score after receiving the intervention than those the participants in the control group who received usual care ($t = 6.70$, $p < .05$). Moreover, the mean comfort score of the

participants in the experimental group were significantly increased from the baseline following nursing comfort care integrating with the Holy Qur'an recitation ($t = 5.34$, $p < .05$), indicating increased comfort scores.

These findings reflects that nursing comfort care integrating with the Holy Qur'an recitation was significantly effective in promoting comfort in Muslim patients while receiving mechanical ventilation. Increased comfort of the participants in the experimental group can be associated to the design of the intervention in this study that was applied Kolcaba's comfort care (2003). The design of nursing comfort care in this study, as described in the conceptual framework (Figure. 1) was composed of three types of comforting interventions which consisted of standard comfort intervention, coaching intervention, and comfort food for soul that integrated with the intervention of the Holy Qur'an recitation.

In her theory, Kolcaba (2003) stated that the nursing comfort care is a holistic intervention because it can promote every context of comfort including physical, psychospiritual, environmental, and sociocultural comfort at one time, and the effectiveness of nursing comfort care is based on an increase in the total comfort from the baseline assessment. This concept can be prove by the findings of this study that showed patients comfort holistically increased after receiving nursing comfort care that was designed for Muslim patients with mechanical ventilation in this study.

Consistently, numerous studies have applied Kolcaba's comfort care as the guiding framework of the study, and it effectives to promote patient's comfort in the variety of settings (Ponte & Silvia, 2015). Nevertheless, related literature encompasses limited number of studies about comfort in mechanically ventilated patients. Previous studies (Besel, 2006; Ciftci & Otzunc, 2015) has investigated

comfort in mechanical ventilated patients and used Kolcaba's comfort theory as the conceptual framework on their studies. Both of the studies utilized music intervention as comforting intervention to promote patients' comfort while receiving mechanical ventilation and also used an instrument that was adopted from Kolcaba Comfort Theory to measure comfort in their studies.

Ciftci and Otzunc (2015) conducted a quasi-experimental study to identify the effect of music on comfort, anxiety and pain in patients with mechanical ventilation in the ICU of a state hospital located in Adana, Turkey. Comfort was measured using the General Comfort Questionnaire (Kolcaba, 2003). The findings demonstrated that there is a positive effect of music intervention on comfort score of mechanically ventilated patients. However, in the study which included five mechanically ventilated patients in the ICU located in Montana, United States. Besel (2006) identified the effect of music on pain, anxiety and comfort scores and found no statistically significant relationship between them. Besel assumed that the small sample size makes generalization of these findings impossible to the entire population of mechanically ventilated patients.

Moreover, the findings of this study demonstrated that the mean comfort score of each context of comfort including physical (t = 5.28, p < .05), psychospiritual (t=10.18, p < .05), environmental (t = 5.88, p < .05), and sociocultural comfort (t = 9.01, p < .05) were significantly increased after the participants in the experimental group following nursing comfort care integrating with the Holy Qur'an recitation. Nevertheless, there were no significant differences in every context of comfort of the participants in the control group who received usual care except on physical comfort (t = 3.08, p < .05) and phychospiritual comfort (t = 2.84, p < .05) (Appendix M).

Interestingly, psychospiritual comfort and sociocultural comfort of the participants in the experimental group was significantly higher than another contexts of comfort. The researcher assumed that the greater increased of psychospiritual and sociocultural comfort among the participants in the experimental group can be related with the integration of the spiritual and cultural aspects in the nursing comfort care that was provided to the participants. Since the design of the intervention in this study were to fulfill of the spiritual need and the daily ritual of participants, by helping the participants to prayer (*salat*) it can be a source of psychological support for Muslim patients (O'Brein, 2014), and providing a session to listen the Holy Qur'an recitation it can obtain a deeply spiritual for them (Mahjoob, Nejati, Hossein, & Bakhsani, 2016). Moreover, the involvement of family members participations in this study, also can facilitate a social interaction between the patients with the loved one (Lombardo, et al., 2013).

Furthermore, increased comfort including on the each context of comfort of the participants in the experimental group can be associated with the design of the intervention in this study that was applied based on the concept of Kolcaba's comfort care (Kolcaba, 2003).

Firstly, the standard comfort intervention in this study divided into; (1) assessing vital signs of the participants; (2) assessing patients' comfort scale and pain intensity; and (3) providing nursing interventions including positioning, suctioning, mouth care by collaborating with the ICU nurses and the administration of analgesic and sedative therapy as prescribed by physicians. The design of standard comfort interventions are aimed to help the patients to maintain or regain physical function and also to prevent complications (Wilson & Kolcaba, 2004).

Assessing vital signs of the participants in the experimental group in this study were intended to monitor the stability of the hemostasis during the intervention period. Within two days, all of the participants has shown stable vital signs at before, after the intervention completed in each day.According to the comparison of HR, BP, and SPO_2 during two days, there were significant differences in the HR, and SPO_2 on the day two of the intervention period, except on the participant's BP (Appendix N). Participant's HR demonstrated significant decreased and SpO_2 increased significantly than before receiving the intervention. These finding were consistent with the previous studies (Bradt & Dileo, 2014; Chlan et al., 2013) that found significantly decreased in heart rate of mechanically ventilated patients after receiving music intervention. Contrary to this evidence, Korhan, Khorshid, and Uyar (2011) did not find a statistically significant difference on the oxygen saturation after received music therapy. The author commented that the lack of improvement in oxygen saturation level may be due to the fact that when a patient was already 100% saturated, there could be no increase in oxygen saturation level (Korhan, Khorshid, & Uyar, 2011).

As well as, pain intensity was monitored during two days of the intervention period. Surprisingly, pain intensity of the participants in the experimental group appeared slightly decreased after receiving the intervention. Based on this finding, it can be estimated that the nursing comfort care integrating with the Holy Qur'an recitation also can be used to reduce pain in mechanically ventilated patients. The literature indicates that pain is directly correlated to patient's comfort (Bizek & Fontaine, 2013). Lombardo et al. (2013) found that pain is the most significant source of discomfort among patients with mechanical ventilation. In consistent study by

Ciftci and Otzunc (2015) showed pain intensity in patients with mechanical ventilation was significantly decrease after listening music therapy.

Maintaining physical function of the participants by collaborating with ICU nurses in providing nursing intervention and the administration of analgesic and sedative medication as prescribed by the physicians may influence comfort of the participants in the experimental group. However, there were no significant differences in the providing of nursing care interventions that including positioning, suctioning, and mouth care in the experimental group between day one and day two of the intevention period. Coyer et al. (2007) stated usual nursing intervention including positioning, suctioning, and mouth care can be served to enhance patient's comfort during mechanical ventilation treatment.

Monitoring the administration of analgesic and sedative therapy in the experimental group during two days of the intervention period showed that most of the participants in the experimental group was taken analgesic drug during two days of the intervention. However, there were no significant differences in the administration of analgesic and sedative drugs between two days of the intervention period. This finding reflected that the outcome of this study may not purely influence by the effect of the administration analgesic and sedative drugs. Although the administration of analgesic and sedative medication was used to promote patients comfort and reduce pain during receiving mechanical ventilation (Chlan et al., 2013; Grap et al., 2012). Nevertheless, by providing appropriate nonpharmacology intervention in conjunction with mainstream medical therapies such as sedative and analgesic drugs, it can increase patient's comfort to improve outcome in mechanical ventilated patients (Tracy & Chlan, 2011).

Moreover, according to the monitoring of the administration of analgesic and/or sedative drugs during two days, the finding demostrated that the use of analgesic an/or sedative drugs were decereased significantly. These finding indicated that the nursing comfort care integrated with the Holy Qur'an recitation could reduce the need of analgesic and/or sedative drugs among the participants in the experimental group. Elliot et al. (2013) stated that physicians commonly prescribed analgesic and/or sedative drugs based on the patients' need. Previous study by Beaulieu-Boire et al. (2013) found that the consumption of analgesic drugs was decresed signifinificantly in patients with mechanical ventilation after receiving music therapy, but there was no significant difference for the intake of sedative drug. In contrast, Chlan (2013) report that mechanically ventilated patients who received music therapy had a greater reduction in change over time of the sedation intensity and sedation frequency compared with patients who did not receive music therapy.

Secondly, coaching intervention in this study was provided by; (1) advocating the patients and family members to communicate comfort needs of the patients through the uses of communication media such as pen and paper or communication board to convey patients' comfort needs, and (2) reassuring the patients and the family members that the researcher will pay attention for any verbal and nonverbal response of the patients during the intervention period. According to Kolcaba (2003), coaching intervention can be identified by the advocating the patients to help them be back to the normal condition since they have faced a frightening or painful experience, and reassuring the patients to recovery, feel safe, and rehabilitation. Congruently, Kerrigan (2011) found that the participants with diabetes in the experimental group who received Kolcaba's coaching intervention demonstrated

lower blood sugar levels as measured by their glucometers and higher comfort at specified intervals of time when compared to the participants in the control group who did not receive coaching.

In the present study, the researcher was advocated the participants and their family related to communication strategy in order to convey comfort needs of the participants in the experimental group by using communication board or pen and paper as the communication media. Basically, communication in mechaically ventilated patients is essential to meet physiological and psychological needs and to convey decisions, wishes, and desire regarding care plan (Grossbach, Stranberg, & Chlan, 2011). Appropriate communication strategies need to advocate in patients with mechanical ventilation and their family (Happ et al,. 2004). Previous studies related communication strategy in mechanical ventilation patients (Nilsen, Sereika, & Happ, 2013; Otuzoglu & Karahan, 2014) described that non vocal communication techniques including gesture and mimics, lip-reading, eye contact, and touching were mostly used to communicate with the patients with mechanical ventilation. Nevertheless, in related study by Martensson and Fridlund (2002) found the used of pen and paper as a communication method in patients with mechanical ventilation is always a great strategy for the nurse and patient to be able to communicate with each other.

Lastly, the intervention of comfort food for soul in this study related to collaborating with the family in preparing the participants to prayer (*salat*) and provide a session to listen to the Holy Qur'an recitation. Basically, prayer (*salat*) is a pillar of religion for Muslims that embedded in the well-being of mind, body and soul (O'Brein, 2014). Thus, prayer (*salat*) is needed to facilitating to the participants in the

experimental group to fulfill the need of daily rituals of their religion. The reaseacher also involved family participantion the help the participants to prayer (*salat*) within two days of the interventions period. Prayer has been reported as the means for comfort and consolation of human spirits and souls (Atarodi, Mottaghi, & Atarodi, 2013) and can improve healing when sick (Andrade & Radhakrishnan, 2009). A systematic review study by Simao, Calderia, and Carvalo (2016) claimed that prayer is a widely used activity and can be used as an adequate therapy and intervention in healthcare to help the patients to cope in terms of illness and crisis.

Moreover, the current study was integrated the Holy Qur'an recitation in the nursing comfort care as comfort food for soul. Consistently, several studies had been conducted to examine the effect of the Holy Qur'an recitation in the variety of settings, including in critically ill patients. A study by Awa (2014) was evaluated the effect of the Holy Qur'an recitation on stress responses of mechanically ventilated patients by measure the change of physiological responses that including HR, BP, RR, and SpO_2. The result found there were no significant differences in physiological responses after listening to the Holy Qur'an recitation except on the patient's heart rate. However, the change of heart rate could be associated with the response of relaxation (Zulkarnain et al., 2012).

Listening to the Holy Qur'an recitation for 15 minutes during two days may increase total comfort of the participants, particularly on psychospiritual and sociocultural comfort of the participants who are Muslims. Accordingly, Muslims believes the sound of the Holy Qur'an recitation can be used as an intervention to recover from sickness and enhancing health (Tumiran et al., 2013), and also gave soothing and comforting effect to the listener (Mahjoob et,. 2016). Previous study by

Alhouseini et al. (2015) showed the alpha brain wave was sinificantly increased after listening to the Holy Qur'an recitation that indicated more relax and calm. Similarly, Zulkarnain et al. (2012) was investigated and compared the effects of listening to the Holy Qur'an recitation and classical music on human brain wave by using EEG. Results of the study demostrated the percentage of alpha brain wave was significantly increased with the greater value when listening to the Holy Qur'an recitation compare to the listening of the classical music (Zulkarnain et al., 2012). Increased alpha brain wave implies that the Holy Quran recitation can effect on some hormone and chemical are responsible for relaxation due to the Holy Quran has a specific effect on Muslims (Shekha, Hassan, & Othman, 2013).

In addition, result of the study also showed that there was a statistically significant difference on the mean score of comfort of the participants in the control group between pre-test and post-test ($t = 5.34$, $p < .05$), even though they did not receive nursing comfort care integrating with the Holy Qur'an recitation. The improvement of comfort score in the participants in the control group can be caused by the participants still received usual care from the ICU nurses and medical staff included nursing care intervention and medication treatment. Coyer et al. (2007) stated that the routinely nursing care can promote comfort or reduce discomfort during mechanical ventilation. Grap et al. (2012) reported that the analgesic and sedative therapy significantly reduced discomfort in mechanically ventilated patients. However, both of nursing care intervention and pharmacological intervention still need to design appropriately in caring mechanically ventilated patients (Couchman et al., 2007)

Chapter 5

Conclusion and Recommendation

This chapter presents the conclusions including the strengths and limitations of the study. Furthermore, the implications and recommendations for further study are explained.

Conclusion

A quasi-experimental study was designed in this study to examine the effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort in Muslim patients with mechanical ventilation. This study was conducted at Intensive Care Unit (ICU) from three different public hospitals that including M.Djamil Hopital, Achmad Mochtar Hospital, and YARSI Islamic Hospital in West Sumatra, Indonesia from December 2016 to March 2017. Fifty six subjects who met the inclusion criteria were recruited in this study. A paired matching technique for age, gender, and duration using mechanical ventilation was used to assign the subjects to the experimental group and the control group.

The experimental group was received the nursing comfort care integrating with the Holy Qur'an recitation for two days that consisted of standard comfort intervention, coaching intervention, and comfort food for soul. The comfort score of the participants in the both groups was measured in the prior of the study (Day one) and the last day (Day two) of the intervention period.

The instruments for data collection were used Demographic and Clinical Characteristics Questionnaire (DCCQ) and Comfort Questionnaire for Mechanically Ventilated Patients (CQMV) in both groups. Demographic data and clinical characteristics of the participants were presented by frequency, percentage, mean, and standard deviation. Chi-square, Fisher's Exact, and Likelihood test, and t-test were used to describe the equivalence of the demographics and clinical characteristics of each participant in the experimental group and the control group. Independent t-test was performed to examine and compare the mean differences of comfort score between the experimental group and the control group. Meanwhile, paired t-test was used to examine and compare the mean difference of comfort score within the subjects in the experimental group and the contol group.

The findings of this study revealed that the mean score of comfort in the experimental group who received the nursing comfort care integrating with the Holy Qur'an recitation and usual care was significantly higher than those in the control group who received only usual care. For comparison within-group effect, the mean score of comfort in the experimental group after receiving the nursing comfort care integring with the Holy Qur'an recitation was significantly increased than before receiving the interventions.

Strengths and Limitations. The study found that the nursing care provided according to the comfort theory was increased patient's comfort including every context of comfort. This study also was effectively integrated spiritual and cultural aspects into a nursing comfort care that can be applied to fulfill patient's spiritual needs and daily rituals of their religion. The nursing comfort care integrating with the Holy Qur'an recitation is a holistic intervention and can be simply adressed by nurses

in a brief session in order to promote comfort in Muslim patients with mechanical ventilation. Moreover, the nursing comfort care integrating with the Holy Qur'an recitation is not only useful to promote comfort in Muslim patients with mechanical ventilation, but also could be used to reduce pain intensity and creates a relaxed response that had been shown by the decreased patients' heart rate and increased oxygen saturation after following the intervention in this study.

Although the present study has reached its aims, there were some unavoidable limitations. Several limitations specifically address the instruments of the study. The number of questions may be too many, as some of the patients were exhausted and had difficulty staying awake to complete the questionnaire each time. Another limitation is the researcher also found difficulty to apply the interventions due to the healthcare providers schedules. Although the researcher would collect data during the most convenient times for the participant and staff, this still did not eliminate frequent distractions from healthcare providers. For example, while the participant listening to the Holy Qur'an recitation, the nurses also need to give medication or provide another nursing care intervention such as monitoring patients' lung sounds, ETT placement, and ETT cuff leaks. The presence of other factors that may have influenced study outcomes and need to be considered such as the time of providing the intervention and other illness factors.

Implications and Recommendations

The research findings have clearly supported that the nursing comfort care integrating with the Holy Qur'an recitation is effective to promote comfort in Muslim patients with mechanical ventilation and it may contribute to nursing practice, nursing research, and nursing education.

Nursing practice. The nursing comfort care integrating with the Holy Qur'an recitation appears to be an effective nursing care intervention to promote comfort while receiving mechanical ventilation, especially in Muslim patients. The findings also suggest that the intervention of nursing care intervention may be useful on Muslim patients to fulfill spiritual needs or belief, and occupied their daily ritual or worship such as prayer (*salat*) and recite the Holy Qur'an. Moreover, this interventions is easly be applied and also may reverse pain associated with mechanical ventilation.

Nursing research. Future research should include a replication of this study using a larger sample size with the appropriate study design such as randomized controlled trials (RCT) to increase power and effect size of nursing comfort care integrating with the Holy Qur'an recitation on comfort in Muslim patients with mechanical ventilation. In order to makes the generalization of this in the population of mechanically ventilated patients, the reseacher recommend future study to replicate this study in the different religion such as in Christian, Buddisht, or Hindu people; and in the different culture such as in western countries. Furthermore, future study also need to conduct this study in the different setting such as in chronical ill patients, and using a different tool to measure comfort that is shorter and may be easier for the participants to answer.

Nursing education. Since this study was used a nursing theory as the guiding framework, therefore the knowledge that obtained from this study can be used as teaching materials for nursing students. Nurse educator can integrate the nusing comfort intervention based on Kolcaba's Comfort Theory in their courses related to caring for patients with mechanical ventilation. Moreover, the design of the intervention in this study can be applied by nursing students on the residency programs to expand their competencies, and also may effect to patients outcome.

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APPENDICES

Appendix A

Sample Size Calculation

Effect Size (d) = $M_1 – M_2$ / pooled SD

Where, Pooled SD = $\sqrt{[(SD_1)^2 + (SD_2)^2 / 2]}$

Definition:

M1, M2 & SD got from previous study

M_1 = Mean of experimental group

M_2 = Mean of Control group

Pooled SD: Standard deviation of the control group and experimental group

In this study, researcher used previous study $M_1 = 21.18$ and $M_2 = 22.55$ $SD_1 = 6.97$ and $SD_2 = 8.00$

Pooled SD = $\sqrt{[(SD_1)^2 + (SD_2)^2 / 2]}$

$= \sqrt{[(6.97)^2 + (8)^2 / 2]}$

$= 7.5$

Effect Size (d) = $M1 – M_2$ / pooled SD

$= 21.18 – 22.55 / 7.5$

$= 0.8$

Effect size of this study is: 0.8

Appendix B

Demographic and Clinical Characteristics Questionnaire (DCCQ)

Instruction: Please complete patient information by giving mark (✓) in bracket or fulfill statement in the blank with your appropriate answer in the form as below. Thank you

HN No…… Date of data collection……..

1. Age: …… years

2. Gender: ( ) Male ( ) Female

3. Marital status

( ) Single ( ) Married ( ) Divorce

4. Religious

( ) Buddhism ( ) Islamic ( ) Christian

( ) Other, Please specify…….

5. Level of education

( ) Elementary school ( ) Junior high school ( ) Senior high school

( ) Vocational certificate ( ) Bachelor degree ( ) Mater degree

( ) Other, Please specify…….

6. Occupation

( ) Student ( ) Employee ( ) Public servant ( ) Agriculturist

( ) Merchants ( ) Other, Please specify……..

7. Underlying disease(s)

( ) No ( ) Yes, Please specify……

8. Drug/Foods allergy

( ) No ( ) Yes, Please specify……

9. Current medical diagnosis……

10. Type of ventilator……..

11. Mode of ventilator……..….

12. Current medication……..…

13. Technology devices used……

Appendix C

Comfort Questionnaire for Mechanically Ventilated Patients

Date_____ Code #_____

Below are statements that may describe your comfort right now. Six numbers are provided for each question; please circle the number you think most closely matches your feeling. This is about your comfort at the moment you are answering the questions.

	Strongly Disagree					Strongly Agree
1. I have no difficulty with breathing	1	2	3	4	5	6
2. My pain is difficult to endure	1	2	3	4	5	6
3. My mouth feel dry	1	2	3	4	5	6
4. I am tired	1	2	3	4	5	6
5. I am afraid of what is next	1	2	3	4	5	6
6. I am anxious about my condition	1	2	3	4	5	6
7. I feel strength with my spiritual belief	1	2	3	4	5	6
8. I feel peaceful	1	2	3	4	5	6
9. My condition gets me down	1	2	3	4	5	6
10. This bed makes me hurt	1	2	3	4	5	6
11. The sounds keep me from resting	1	2	3	4	5	6
12. This room makes me feel scared	1	2	3	4	5	6
13. There are those I can depend on when I need	1	2	3	4	5	6
14. I am un happy when I am alone	1	2	3	4	5	6
15. Payer is an important part of my life	1	2	3	4	5	6
16. I am not able to communicate my needs with the others	1	2	3	4	5	6

APPENDIX D

The modification of Comfort Questionnaire for Mechanically Ventilated Patients

Name of the instrument	Shortened version of General Comfort Questionnaire (GCQ)	Comfort Questionnaire for Mechanically Ventilated Patients (CQMVP)
Author / year	Kolcaba, Schirm, & Steiner (2006)	Modified by the researcher
Statements / Items	1. There are those I can depend on when I need[4] 2. I don't want to exercise[1] 3. My condition gets me down[2] 4. I feel confident[2] 5. I feel my life is worthwhile right now[2] 6. I am inspired by knowing that I am loved[2] 7. The sounds keep me from resting [3] 8. No one understands me [2] 9. My pain is difficult to endure[1] 10. I am unhappy when I am alone [4] 11. I do not like it here [3] 12. I am constipated right now [1] 13. I do not feel healthy right now [1] 14. My room makes me feel scared[3] 15. I am afraid of what is next[2] 16. I am very tired[1] 17. I am content[2] 18. This chair (bed) makes me hurt [3] 19. The views are soothing [3] 20. My personal belongings are not here[4] 21. I feel out of place here[3] 22. My friends remember me with their cards and phone calls[4] 23. I need to be better informed about my health[2] 24. I don't have many choices[2] 25. This room smells bad[3] 26. I feel peaceful[2] 27. I am depressed[2] 28. I have found meaning in my life [2]	<u>Physical comfort</u> 1. I have no difficulty with breathing** 2. My pain is difficult to endure* (9) 3. My mouth feel dry** 4. I am tired* (16) <u>Psychospiritual comfort</u> 5. I am afraid of what is next* (15) 6. I am anxious about my condition** 7. I feel strength with my spiritual belief** 8. I feel peaceful* (26) 9. My condition gets me down* (3) <u>Environmental comfort</u> 10. This bed makes me hurt* (18) 11. The sounds keep me from resting*(7) 12. This room makes me feel scared*(14) <u>Sociocultural comfort</u> 13. There are those I can depend on when I need* (1) 14. I am un happy when I am alone*(10) 15. Payer is an important part of my life** 16. I am not able to communicate my needs with the others**

	Note: [1] = item related to physical comfort [2] = item related to psychological comfort [3] = item related to environmental comfort [4] = item related to sociocultural comfort	*Note:* * = adopted from the shortened version of GCQ ( ) = question number from the shortened version of GCQ ** = added by the researcher
Instruction	Thank you VERY MUCH for helping me in our study of the concept COMFORT. Below are statements that may describe your comfort right now. Six numbers are provided for each question; please circle the number you think most closely matches your feeling. This is about your comfort at the moment you are answering the questions. Strongly Disagree ... Strongly Agree 1 2 3 4 5 6	Below are statements that may describe your comfort right now. Six numbers are provided for each question; please circle the number you think most closely matches your feeling. This is about your comfort at the moment you are answering the questions. Strongly disagree (1); Very disagree (2); Somewhat disagree (3); Somewhat agree (4); Very agree (5); Strongly agree (6)
Description of the instruments	SGCQ was adapted from the General Comfort Questionnaire (GCQ) (Kolcaba, 1992) for a study in geriatric patients	The shortened version GCQ by Kolcaba (2006) have modified by researcher into CQMVP due to the relevancy of the questionnaire with the selected population of this study and the consideration with the patients limitation due to their difficulties to communicate verbally
The Cronbach's alphas	The Cronbach's alphas for the study were 0.86, 0.83, and 0.82 at three points of measurement	The reliability of CQMVP showed the Cronbach's alphas were .81
Interpretation of the instruments	By sum up the items, with high score (168) indicate the high level of comfort and low score (28) indicates the low level of comfort	The total score of patients' comfort are obtained by sum up the items, with highest score (96) indicate the high level of comfort and lowest score (16) indicates the low level of comfort

Appendix E

Comfort Rating Scale

Date_____ Code #_____

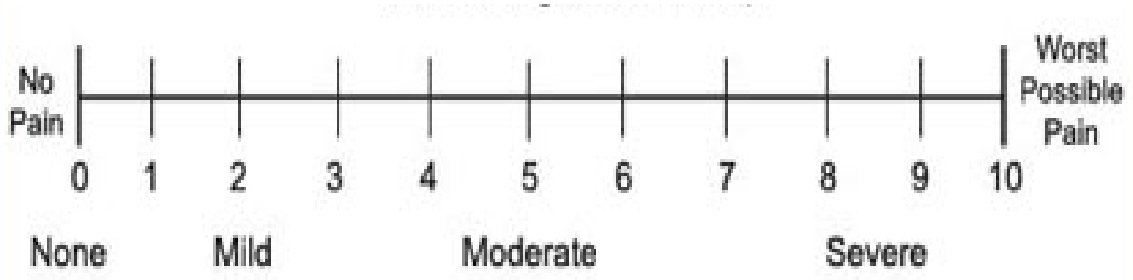
Please rate your Total Comfort from 0 to 10, using the scale below.

Place X in best box below		The amount of Total Comfort you are experiencing *right now :*
	10	Highest comfort possible
	9	Very high comfort
	8	Between fairly high and high comfort
	7	Fairly high comfort
	6	Between moderate and fairly high comfort
	5	Moderate comfort
	4	Between some and moderate comfort
	3	Some comfort
	2	Between a little bit and some comfort
	1	A little bit of comfort
	0	No comfort at all

Appendix F

Pain Rating Scale

Please rate your Pain Intensity from 0 to 10, using the scale below.



Appendix G

Patient's Assessment Form

Code #_____

Clinical Outcome		**Days of measurement**	
		Day 1	**Day 2**
Hear Rate (HR)	Beat/minute		
Respiratory Rate (RR)	Per minutes		
Blood Pressure (BP)	mmHg		
Body Temp (BT)	^{o}C		
Oxygen Saturation (SpO_2)	%		
Comfort Scale			
Pain Intensity			

Appendix H

Interventions Checklist Form

Date:---------- **Code #_____**

For each usual intervention please remark (√) "provided" or "not provide" to indicate if the usual interventions was completed by the nurses during the intervention period of the study. Use the "Notes" column to comment on the observation

Days	Interventions	Provided	Not provide	Notes
Day 1	Positioning			
	Mouth care			
	Suctioning			
	Administration of analgesic Name of drug:…….. Dose: ……			
	Administration of sedation Name of drug:…….. Dose: ……			
Day 2	Positioning			
	Mouth care			
	Suctioning			
	Administration of analgesic Name of drug:…….. Dose: ……			
	Administration of sedation Name of drug:…….. Dose: ……			

APPENDIX I

LIST OF EXPERTS

1. Dr. Charuwan Kritpracha, Ph.D., RN.

   Faculty of Nursing, Prince of Songkla University, Thailand

   Expert on adult nursing and quantitative study design

2. Dr. Emil Huriani, SKp, MNS

   Faculty of Nursing, Andalas University, Indonesia

   Expert on critical care nursing

3. Ns. Misfatria M Noer, M.Kep., Sp.KMB

   Specialist nurse, Achmad Mochtar Hospital, Indonesia

   Expert on critical care nursing

4. Yulius, M.Ag

   Islamic Faculty, M.Natsir University, Indonesia

   Expert on the study about the Holy Qur'an and *Tafsir*

Appendix J

Nursing Comfort Care Integrating with the Holy Qur'an Recitation Guidelines

Time	Session of intervention	Objectives	Method	Media	Duration	Content	Activity	
							Researcher	Participant
Day 1	Pre-intervention	To establish relationship and trust between researcher and participants To clarify the purpose of the study	Discussion Information giving	Form	10 minutes	• Introduction and informed consent • Demographic and clinical characteristic • Asses the CQMVP	• Establishing a trusting relationship by greeting, introduce the researcher • Explain the purpose, protocols, procedures, risks and benefits of the study • Ask the participant to sign the informed consent if they agree to participate • Record demographic and clinical characteristics from patient's medical record • RA asked the participant to answer the question of CQMVP	• Establishing a trusting relationship the researcher • Listening the information • Agree to participate in the study • Answer the question

	Standard comfort intervention	Assessment including measuring vital sign stability and identify pain intensity	Examination	Instrument tool	10 minutes	• Record vital signs • Assess comfort scale and pain intensity by using CRS and PRS	• Measure vital signs including HR, RR, BP, BT, and SpO2 • Ask the participant to answer the score of their comfort scale and pain in range 0-10	• Answer the question
	Coaching intervention	To advocate and reassure for family involvement in preparing the participants to prayer (*salat*)	Education and Discussion	Pen and paper Communication board	10 minutes	• Advocating the participants and family to communicate comfort need • Reassure the participants and family members	• Ask the participant to convey their comfort needs ➢ Could you tell me what are you need to make you comfortable during this treatment? • Reassure the participants and family that the researcher will pay attention for any verbal and nonverbal response of the participants during the intervention period	• Answer the questions related comfort needs • Listening the information

	Comfort food for soul	To help the participants to prayer (*salat*) and provide a session of listening the Holy Qur'an recitation	Performing and listening	Mp3 player Bottle spray	20 minutes	• Collaborating with the family in preparing the participants to prayer • Introduce the intervention of listening the Holy Qur'an recitation	• Ask the participants willingness to involve their family to help them to perform prayer (salat) ➢ Do you feel comfortable if your family help you to perform prayer (*salat*)? • Ask family participation to help the participants to ablution (*wudhu*) before perform prayer (*salat*) • Ask the participant about their experience recite or listening the Holy Qur'an recitation ➢ Do you always read or listening the Holy Qur'an? • Explain about the benefits of the intervention of listening the Holy Qur'an recitation	• Answer the question • Participants performing ablution (*wudhu*) by using bottle spray or not • Answer the question • Listen the information

							• Ask participant readiness to listen the holy Qur'an recitation ➢ Are you ready to listening to the Holy Qur'an recitation now? • Give positive reinforcement • Foster the privacy and quite environment by closing the curtain • Suggest participants to lie down and close their eyes • Instruct the participant to listen the Holy Qur'an recitation for 15 minutes	• State their readiness to listen the Holy Qur'an recitation • Lie down and close the eyes • Listen the Holy Qur'an recitation
	Evaluation of the intervention	Reassessment after intervention	Examination	Instrument tool	5 minutes	Reassess total comfort scale and pain intensity by using CRS and PRS	• Ask the participant to score their comfort scale and pain intensity in point 0-10	Answer the question

Day 2	Standard comfort intervention	Assess and measuring clinical outcome	Examination	Instrument tools	10 minutes	• Assess total comfort by using CRS • Assess pain intensity by using PRS • Record vital signs	• Ask the participant to answer the score of their comfort in range 0-10 • Ask the participant to answer the score of their pain in range 0-10 • Measure vital sign including HR, RR, BP, BT, and SpO2	• Answer the question
	Coaching intervention	To advocate and reassure for family involvement in preparing the participants to prayer (*salat*)	Education and Discussion	Pen and paper Communication board	10 minutes	• Advocating the participants and family to communicate comfort need • Reassure the participants and family members	• Ask the participant to convey their comfort needs ➢ Is there anything that you need at this time? ➢ Have you always communicate what you need to the nurses or your family? • Reassure the participants and family that the researcher will pay attention for any verbal and nonverbal response of the participants during the intervention period	• Answer the questions related comfort needs by using communication board or pen and paper • Listening the information

	Comfort food for soul	To help the participants to prayer (*salat*) and provide a session of listening the Holy Qur'an recitation	Performing and listening	Mp3 player Bottle spray	20 minutes	• Collaborating with the family in preparing the participants to prayer • Provide a session to listen the Holy Qur'an recitation	• Ask the participants willingness to involve their family to help them to perform prayer (salat) ➢ Do you feel comfortable if your family help you to perform prayer (*salat*)? • Ask family participation to help the participants to ablution (*wudhu*) before perform prayer (*salat*) • Ask participant readiness to listen the holy Qur'an recitation ➢ Are you ready to listening to the Holy Qur'an recitation now? • Give positive reinforcement • Foster the privacy and quite environment by closing the curtain	• Answer the question • Participants performing ablution (*wudhu*) by using bottle spray or not • State their readiness to listen the Holy Qur'an recitation

							• Suggest participants to lie down and close their eyes • Instruct the participant to listen the Holy Qur'an recitation for 15 minutes	• Lie down and close the eyes • Listen the Holy Qur'an recitation
	Evaluation of the intervention	Reassessment after intervention	Examination	Instrument tool	5 minutes	Reassess total comfort scale and pain intensity by using CRS and PRS	• Ask the participant to score their comfort scale and pain intensity in point 0-10	Answer the question
	Post intervention program	Terminate the program	Discussion and sharing		5 minutes	Assessment	• Inform the participant that is the last session of the intervention and express gratitude to the participants • RA collected posttest data by using CQMVP	

Appendix K

Informed Consent

My name is Junaidy Suparman Rustam. I am a master student at Faculty of Nursing, Prince of Songkla University, Thailand. I am conducting a research study entitled "The effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort of patients with mechanical ventilation". It is expected that the findings of this study will contribute to enhance comfort of Muslim patients with mechanical ventilation. The interventions offer in this study and all protocols are approved by the involved authorities, so your safety and other concerns are taken into high consideration. I asked you to participate in this study since you are received mechanical ventilation. Your information would be very useful for others who are like you. This study has been approved by Ethics Research Committee of Faculty of Nursing, Prince of Songkla University, Thailand.

Explanation on procedures

You will be assigned to either experimental group or the control group. If you are in the experimental group, you will be given the nursing comfort care integrating with a session to listen the Holy Qur'an recitation through headphone from the audio player with duration of 15 minutes for three days. If you are in the control group, you will not be given the nursing comfort care integrating with the Holy Qur'an recitation. You will continue to receive routine nursing care from the nurse. However, if you want to receive nursing comfort care integrating with the Holy Qur'an recitation, you will be provided after the end of the study period.

Evaluation and Forms

The researcher will read 16 items of the Comfort Questionnaire for Mechanically Ventilated Patients (CQMVP) for you, and then you will be asked to answer the question that related to your comfort experience the moment you answering the questions. This activity will take time around 8 to 10 minutes..

Risk, Comfort and Compensation

There is no known risk or harm for participating in this study. However, the researcher will check your condition prior to the intervention and observe during the intervention period to minimize the potential risk. In the case that something goes wrong or make you feel difficult to breathe or you feel fatigue during the intervention or answering the question, you should stop whatever you are doing, take a rest, and report to the researcher to help you directly because the researcher will stand by beside you during the intervention period. Moreover, there is neither cost nor payment to you for your participation in this study.

Confidentiality

All information and your response in this study will be kept confidential and anonymous, and will only be accessible to the researcher, and two research advisors of this study. Your name or any identifying information will not be used in the reports.

Benefit

The findings of this study will be beneficial in caring patients with mechanical ventilation, and can be used as a guideline for nursing to provide alternatives intervention to enhance comfort in Muslim patients with mechanical ventilation. This study may provide useful information for future research related to this area.

Participation and Withdraw from Participation

Your participation in this study is voluntary. Signing the informed consent or agreeing verbally to participate and returning the form given indicate that you understand what is involved and you consent to participate in this study project. You also have right to withdraw from participation in this study any time, and no penalty will be incurred if you decide to withdraw. Moreover, it will not influence on your receiving service or any medical treatment if you withdraw from the study.

Thank you for your coorperation

Junaidy Suparman Rustam

Informed Consent Form

Title: The effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort of Muslim patients with mechanical ventilation

Researcher: Mr. Junaidy Suparman Rustam (Master student, Faculty of Nursing, Prince of Songkla University Thailand).

Patient's Consent

I, …… , was informed the details of the research entitled "The effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort in Muslim patients with mechanical ventilation". It was guaranteed that no part of my personal information and research result shall be individually exposed to the public. If any concerns or issue come up, I would discuss them with the researcher. I have the right to withdraw from this study at any time without any effects on any nursing/medical services and treatment. I am willing to participate in this research study.

Sign by : ……. (Consenter) Date : ……

Researcher's note

I had given the detailed information of the research entitled "The effect of nursing comfort care integrating with the Holy Qur'an recitation on comfort in Muslim patients with mechanical ventilation." The signature and returning the form indicate that participants and their family understand what is involved and agree to participate in this study voluntarily. I provide the opportunity to the patients to ask any question and provide the require answer.

Signature : ……. (Researcher) Date : ……

APPENDIX L

TEST OF ASSUMPTIONS

Normality tests

The assumption of normality was examined by using the values of the skewness and kurtosis divided their standard error, and the *p* value of Kolmogorov-Smirnov and Shapiro-Wilk. The result from testing assumption showed that the data set of comfort scores in the experimental and control group were normally distributed, determined by the values skewness and kurtosis were in the range of ± 3, and the Kolmogorov-Smirnova and Shapiro-Wilk showed *p* value > .05

The Value of the Skewness and Kurtosis of Comfort Score in the Experimental Control Groups

Group			Statistic (a)	Standard. Error (b)	Z value (a / b)
Pre-test	Control group	Skewness	-.392	.441	-.888
		Kurtosis	-.305	.858	-.355
	Experimental group	Skewness	.174	.441	.395
		Kurtosis	-.445	.858	-.519
Post-test	Control group	Skewness	.398	.441	.902
		Kurtosis	.917	.858	1.069
	Experimental group	Skewness	-.769	.441	-1.744
		Kurtosis	.735	.858	.857

The Value of the Kolmogorov-Smirnova and Shapiro-Wilk of Comfort Score in the Experimental and Control Groups

	Group	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pretest	Control group	.094	28	.200*	.972	28	.640
	Experimental group	.074	28	.200*	.979	28	.827
Posttest	Control group	.109	28	.200*	.980	28	.852
	Experimental group	.127	28	.200*	.955	28	.267

Test of Homogeneity of Variance

The homogeneity of variance was examined by using the Levene's test of equality of error variance. The result from testing homogeneity of variance showed that the data set were not significant differences, determined by the p values > .05

The Value of the Levene's Test of Comfort Score in the Experimental and Control Groups

		Levene's Statistic	df1	df2	Sig.
Total comfort pretest	Based on Mean	1.115	1	54	.296
	Based on Median	1.155	1	54	.287
	Based on Median and with adjusted df	1.155	1	52.129	.287
	Based on trimmed mean	1.138	1	54	.291
Total comfort posttest	Based on Mean	2.412	1	54	.126
	Based on Median	1.894	1	54	.174
	Based on Median and with adjusted df	1.894	1	46.171	.175
	Based on trimmed mean	2.210	1	54	.143

APPENDIX M

CONTEXTS OF COMFORT

Contexts of comfort between-group effect (Independent t-test)

Variables	Experimental group		Control group		*t*	*p*
	M	SD	M	SD		
Pre-test						
Physical comfort	12.11	2.51	11.96	2.60	.21	.84
Psychospiritual comfort	14.96	3.04	15.54	2.60	.76	.45
Environmental comfort	9.11	2.32	8.61	2.53	.77	.44
Sociocultural comfort	13.64	2.54	13.50	2.13	.23	.82
Post-test						
Physical comfort	14.82	2.11	13.43	2.06	2.50	.01
Psychospiritual comfort	22.32	4.36	17.00	2.49	5.60	.00
Environmental comfort	12.11	2.73	9.50	2.47	3.75	.00
Sociocultural comfort	18.32	2.69	14.36	2.22	6.01	.00

Contexts of comfort within-group effect (Paired t-test)

Variables	Pre-test		Post-test		*t*	*p*
	M	SD	M	SD		
Experimental group						
Physical comfort	12.11	2.51	14.82	2.11	5.28	.00
Psychospiritual comfort	14.96	3.04	22.32	4.36	10.18	.00
Environmental comfort	9.1	2.32	12.11	2.73	5.66	.00
Sociocultural comfort	12.11	2.54	18.32	2.69	9.01	.00
Control group						
Physical comfort	11.96	2.60	13.43	2.06	3.08	.005
Psychospiritual comfort	15.54	2.60	17.00	2.49	2.84	.008
Environmental comfort	8.6	2.53	9.50	2.47	1.30	.205
Sociocultural comfort	13.50	2.13	14.36	2.22	1.78	.086

APPENDIX N

MONITORING DATA

The monitoring of vital signs, comfort scale, and pain intensity during two days of the in participants in the experimental group.

Variables	Day 1		Day 2	
	M	*SD*	*M*	*SD*
Vital signs				
Heart rate	105.61	15.30	102.93	11.42
Systolic blood pressure	125.71	7.19	125.50	6.23
Diastolic blood pressure	75.86	11.75	80.75	7.96
Respiratory rate	13.71	1.92	13.96	2.13
Body temperature	36.45	.60	36.35	.50
Oxygen saturation	99.21	.83	99.32	.72
Comfort scale	4.11	1.07	4.79	1.10
Pain intensity	6.29	1.12	5.14	.97

The monitoring of the provision of nursing intervention and the administration of medications during two days of the in participants in the experimental group

Variables	Day 1		Day 2	
	n	*%*	*n*	*%*
Nursing interventions				
Positioning				
Provided	27	96.4	26	92.9
Not provided	1	3.6	2	7.1
Suctioning				
Provided	27	96.4	28	100
Not provided	1	3.6	-	-
Mouth care				
Provided	21	75.0	25	89.3
Not provided	7	25.0	3	10.7
Medications				
No analgesic/sedatives	10	35.7	12	42.9
Analgesic	14	50.0	13	46.4
Analgesic + sedative drugs	4	14.3	3	10.7

APPENDIX O

THE RESEARCH LETTERS ARCHIVE

1. Ethic Committee Approval of Prince of Songkla University

FACULTY OF NURSING

PRINCE OF SONGKLA UNIVERSITY

P.O. BOX 9, KHOR HONG, HATYAI
SONGKHLA, THAILAND, 90112
FAX NO. 66-74-286421
TEL. NO. 66-74-286456,
66-74-286459

MOE 0521.1.05/ 3066

Ethics Committee Approval

December 14, 2016

To whom it may concern:

This letter is to confirm that the Nursing Faculty Ethics Committee approved the research study of Mr.Junaidy Suparman Rustam ID. 5810420005 entitled "The Effect of Nursing Comfort Care Integrating with the Holy Qur'an Recitation on Comfort in Muslim Patients with Mechanical Ventilation" on October 31, 2016. The study is a major part of Mr.Junaidy Suparman Rustam's Master Degree at the Faculty of Nursing, Prince of Songkla University, Thailand. The study ensures the rights, safety, confidentiality, and welfare of research participants and it was determined that the study would not be harmful to the participants in the future.

Sincerely,

Waraporn

Assistant Professor Dr.Waraporn Kongsuwan
Associate Dean for Research, Graduate Studies, and International Affairs
Prince of Songkla University,
Hat Yai, Songkhla, 90112, Thailand
Tel: 66-74-286404
Fax: 66-74- 286421

2. Ethical Clearance From Andalas University Indonesia

KOMITE ETIKA PENELITIAN
FAKULTAS KEDOKTERAN UNIVERSITAS ANDALAS
Jl.Perintis Kemerdekaan Padang 25127
Telepon: 0751 31746 Fax : 0751 32838 No. Reg : 036/KNEP/2008
e-mail: fk2unand@pdg.vision.net.id

No: 046/KEP/FK/2017

KETERANGAN LOLOS KAJI ETIK
ETHICAL CLEARANCE

Tim Komite Etika Penelitian Fakultas Kedokteran Universitas Andalas Padang, dalam upaya melindungi hak azazi dan kesejahteraan subjek penelitian kedokteran/kesehatan, telah mengkaji dengan teliti protokol penelitian dengan judul:
The Committee of the Research Ethics of the Faculty of Medicine, Andalas University, with regards of the protection of human rights and welfare in medical/health research, has carefully reviewed the research protocol entitled:

The Effect of nursing comport care integrating with the Holy Qur'an recitation on comfort in Muslim patients with mechanical ventilation

Nama Peneliti Utama : Ns. Junaidy Suparman Rustam, S.Kep
Name of the Investigator

Nama Institusi : Faculty of Nursing Prince of Songkla University Thailand
Name of Institution

dan telah menyetujui protokol penelitian tersebut diatas.
and recommended the above research protocol.

Padang, 10 Februari 2017

Dekan Fakultas Kedokteran Universitas Andalas
Dean of Faculty of Medicine Andalas University

Dr. dr.H. Masrul, MSc, Sp.GK
NIP. 1956 1226 1987 101 001

Ketua
Chairperson

Prof. Dr. dr. Eryati Darwin, PA(K)
NIP. 1953 1109 1982 112 001

3. Letter Of Permission For Data Collection In Yarsi Islamic Hospital

RUMAH SAKIT ISLAM
IBNU SINA
BUKITTINGGI
YARSI SUMBAR

SURAT KETERANGAN
NO. 465/E/ISBT/III/2017

Direktur Rumah Sakit Islam Ibnu Sina Bukittinggi, dengan ini menerangkan bahwa yang tersebut di bawah ini :

Nama	: Junaidy Suparman Rustam
ID	: 5810420005
Institusi	: Faculty of Nursing, Prince of Songkla University, Thailand

telah selesai melakukan penelitian di Rumah Sakit Islam Ibnu Sina Bukittinggi guna penyusunan Tesis dengan judul :

"THE EFFECT OF NURSING COMFORT CARE INTEGRATING WITH THE HOLY QUR'AN RECITATION ON COMFORT IN MUSLIM PATIENTS WITH MECHANICAL VENTILATION"
PADA BULAN JANUARI 2017 – MARET 2017 DI RUANGAN ICU
RUMAH SAKIT ISLAM IBNU SINA BUKITTINGGI

Demikianlah surat keterangan ini diberikan untuk dapat dipergunakan sebagaimana mestinya.

Bukittinggi, 25 Maret 2017
Direktur

RUMAH SAKIT ISLAM
IBNU SINA
BUKITTINGGI
YARSI SUMBAR

dr. Hj. Zulfa, MARS

Cc. Pertinggal

Jl. Batang Agam, Bukittinggi 26136 Telp. 0752-21185 (hunting) Fax. 0752-34009 e-mail : ibnusina_bkt@yahoo.co.id

4. Letter Of Permission For Data Collection In Ahmad Mocthar Hospital

PEMERINTAH PROVINSI SUMATERA BARAT
DINAS KESEHATAN
Jl. Perintis Kemerdekaan No. 65 A Telp./ Fax : 0751 – 26484 Padang

No : 544 / Yankes Rjk/II/2017
Lamp. :
Perihal : Penelitian kesehatan

Padang, 16 Februari 2017

Kepada Yth :
Sdr/i Direktur RS. Achmad Muchtar

Di – T e m p a t

Dengan hormat,

Sehubungan dengan surat dari Faculty of Nursing, Prince of Songkla University Thailand, tentang permohonan untuk memberikan ijin penelitian terhadap mahasiswa S2 Keperawatan atas nama Junaidy Suparman Rustam ID. 5810420005 dengan judul *"The Effect of Nursing Comfort Care Integrating with the Holy Qur'an Recitation on Comfort in Muslim Patients with Mechanical Ventilation"* di ICU RS.Achmad Muchtar Bukittinggi pada bulan Februari sampai April 2017.

Adapun permohonan ijin melakukan penelitian ini untuk dapat difasilitasi sesuai dengan kebutuhan dalam melakukan penelitian.

Demikianlah disampaikan atas perhatian dan kerjasamanya di ucapkan terima kasih.

Kepala Dinas Kesehatan
Provinsi Sumatera Barat

dr.Hj.Merry Yuliesday, MARS
NIP. 19600715 18803 2 005

5. Letter Of Permission For Data Collection In M.Djamil Hospital

KEMENTERIAN KESEHATAN RI
DIREKTORAT JENDERAL BINA UPAYA KESEHATAN
RSUP DR. M. DJAMIL PADANG
Jalan Perintis Kemerdekaan Padang - 25127
Telepon (0751) 32371, 810253, 810254 Faximile. (0751) 32371

SURAT KETERANGAN
No. DL.01.03.07.326

Yang bertanda tangan di bawah ini ;

Nama : Hj.Harmita, SKM.MM
NIP : 196404141985122001
Jabatan : Ka.Subag Diklit Non Medik

Dengan ini menerangkan bahwa ;

Nama : Ns.Junaidy Suparman Rustam, S.Kep
NPM : 5810420005
Mahasiswa : S2 Keperawatan Faculty Of Nursing Prince Of Songkla University Thailand

Telah selesai melakukan Penelitian di Instalasi Anestesiologi dan Terapi Intensif (ICU) RSUP Dr.M.Djamil Padang terhitung mulai tanggal 13 Februari 2017 s/d 29 Maret 2017, guna pembuatan karya tulis/Tesis/disertasi yang berjudul :

"The Effect Of Nursing Comfort Care Integrating With The Holly Qur'an Recitation on Comfort In Muslim Patients With Mechanical Ventilation"

Demikianlah surat keterangan ini dibuat untuk dapat digunakan seperlunya.

Padang, 30 Maret 2017
a.n Kabag. Pendidikan & Penelitian
Kasubag Diklit Non Medis

Hj.Harmita, SKM, MM
NIP.196404141985122001

VITAE

Name Mr. Junaidy Suparman Rustam

Student ID 5810420005

Educational Attainment

Degree	Name of Institution	Year of Graduation
Bachelor of Nursing	Alifah Health College West Sumatra Indonesia	2009
Professional Nurses	Alifah Health College West Sumatra Indonesia	2011

Scholarship Awards During Enrolment

Thailand's Educations Hub for The Southern Region of ASEAN countries (TEH-AC) Scholarship

Work-Position and Address

Work-Position Lecturer at Nursing Program of YARSI Health Science College, Indonesia.

Address Adi Negoro Street no.95 Bukittinggi City, West Sumatra Province, Indonesia

E-mail adhie.junaidy@gmail.com

List of Publication and Proceedings

Rustam J.,& Kongsuwan W. (In press). Communication in patients with ventilation support: An integrative review. *Songklanagarind Journal of Nursing*

Rustam J.,& Kongsuwan W. (2017, July). C*ommunication in patients with ventilation support: An integrative review*. Abstract paper presented at the 2017 International Nursing Conference on Ethics Esthetics, and Empirics in Nursing Driving Force for Better Health, Prince of Songkla University, Thailand.