Effects of Childbirth Preparation Nursing Intervention Integrating Islamic Praying Program on Labor Pain, Pain-Coping Behaviors, and Duration of Labor in Primiparous Muslim Women

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ABSTRACT

This experimental study design was conducted to test the effects of the Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP) program on labor pain, pain-coping behaviors, and duration of labor in primiparous Muslim women in Indonesia. The experimental group (n=41) received the program and usual care, while the control group (n=42) received only the usual care. The program based on Islamic Philosophy, Holistic Nursing Theory, and Labor Support Concept started at 32 weeks of pregnancy by providing childbirth education regarding positioning, breathing, stroking, and Islamic prayer which was then practiced at home every day until the first 3 hours of the active phase of labor. A Visual Analogue Scale (VAS) and Pain Behavior Observation Scale (PBOS) were used to measure labor pain and pain-coping behaviors, respectively, at pre-test and at the 1st, 2nd, and 3rd hour from 3-4 cm of cervical dilation. Duration of labor was measured in minutes from cervical dilation of 3-4 cm to full cervical dilation of 10 cm. Testing the assumption showed that the data sets of outcomes were normally distributed and similar in both groups. Repeated measures of ANOVA indicated that after receiving the intervention program, the women in the experimental group reported significant reduction in labor pain compared to the control group [F (1, 81) = 113, P = 0.00, η^2 (effect size) = .58], there

were significantly statistical differences of over four points in labor pain, [$F(2, 182) = 82.84$, $P = 0.00$, partial η^2 (effect size) = .50], and increased pain-coping behaviors in the experimental group compared to the control group [$F(1, 81) = 147$, $P = 0.00$, $\eta^2 = 0.64$], there were significantly statistical differences of over four points in pain-coping behaviors, [$F(2, 182) = 165.55$, $P = 0.00$, partial η^2 (effect size) = 0.67]. Post Hoc Test Multiple Comparisons of One Way ANOVA was conducted to analyze a comparison of mean differences of labor pain and pain-coping behaviors 3 times after the CPNsIIIP program was finished within the experimental group suggesting that labor pain was significantly reduced at pre-test and 1st hour, at pre-test and 2nd hour, and at pre-test and 3rd hour, while the labor pain at the 1st and 2nd hour, at the 1st and 3rd hour, at the 2nd and 3rd hour were not significantly lower. However, the pain-coping behavior significantly increased over time after receiving the program. The independent *t*-test was used to report the effects of the intervention program between the groups. The findings showed that the experimental group had significantly decreased pain, increased pain-coping behaviors at each posttest ($P < 0.05$), and a shorter duration of the active phase of labor ($t = 7.51$; $P = 0.00$) than the control group. It is thus recommended to implement the program into maternity nursing practice because the program culturally fits Muslim women and showed evidence of its effectiveness in reducing labor pain, increasing pain-coping behaviors, and shorter duration of the active phase of labor.

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CHAPTER 1

INTRODUCTION

Background and Significance of the Study

Labor pain is a subjective experience and is defined as a feeling of hurting from uterine contractions, cervical dilation, and stretching of the vagina and perineum (Smith, 2015). Labor pain has become the first priority issue of concern for women and their families, particularly in primiparous women who have no previous experience with labor (Shrestha, Pradhan, & Sharma, 2013). Most primiparous women (75%) reported that their pain during child birth was severe or intolerable (Allameh, Tehrani, & Ghasemi, 2015). In addition, a study reported that the percentage of labor pain at a severe level was higher in primiparous women (37%) than in multiparous women (20.7%) (Shrestha, Pradhan, & Sharma, 2013). This is because of little progression in cervical dilation before effacement and low fetal station in primiparous women which cause stronger stimulation of pelvic and cervical nociceptors by the fetal head and greater pain compared with multiparous women (Capogna, Camorcia, Stirparo, Valentini, Garassino, & Farcomeni, 2010; Hall, Stoll, Hutton, & Brown, 2012)

When labor pain occurs, women express various behaviors in responding and coping with the pain such as crying, screaming, pulling hair out, praying, walking or protective movements (Abushaikha, 2007). Pain-coping behaviors depend on the intensity and frequency of pain (Ebirim, Buowari, & Ghosh, 2012). It was noted that if the women had severe labor pain, they tended to have uncontrolled or inappropriate behaviors, such as restlessness, crying out, sobbing, uncontrolled breathing, grimacing,

wincing, showing desperation, and often asking for help (Hsieh, Tripp, & Ji, 2011). In the group of low to moderate labor pain, the behaviors were more controlled, such as guarding, holding, grunting, moaning, sighing, irregularly breathing but trying to control breathing, tensing, and some complaints of pain or sometimes asking for help from other people or God (Babgi, 2010).

A severe or high level of pain and inappropriate pain-coping behaviors have adverse effects on the mother and fetus. Pain disturbs the maternal autonomic functions and causes the release of catecholamines resulting in abnormal labor and fetal distress (El-Wahab & Robinson, 2014; Yuel, Kaur, & Kaur, 2008). Catecholamines (i.e. dopamine, epinephrine/adrenalin, and norepinephrine) are hormones secreted by the adrenal glands that lead to inhibition of uterine activity, abnormal uterine contractions, prolonged labor, and increased risk of intra-partum problems (Rakers, et al., 2015; Rooks, 2012). Uterine contractions that do not work effectively are the important cause of prolonged labor and acidosis in infants (Adams, Eberhard-Gran, & Eskild, 2012; Li, Zhang, Ling, & Jin, 2011). Prolonged labor in the first stage of labor is the primary reason for the higher number of forceps extractions and an increased number of cesarean sections (Cheng, Shaffer, Bryant, & Caughey, 2010; 2012; Caughey, Cahill, Guise, & Rouse, 2014). However, in Islam, caesarian section is not recommended if there is no emergency reason for the safety of the baby and mother (QS ʻAbasa: 18-20; Al-Mursalat: 20-23).

Severe pain and an uncontrolled of pain-coping behaviors are commonly experienced by primiparous women in natural labor and are associated with belief in

spiritual factors and physiological, psychological, environmental, and cultural factors (Mander, 2011). Physiological factors that effect labor pain include age and the balance of body weight and height. For instance, severe labor pain was found in younger women (Strestha, Pradnan, & Sharma, 2013), and overweight women had a significantly higher level of labor pain than women with a balanced weight and height (Allameh, Tehrani, & Ghasemi, 2015). Psychological factors that influence pain are fear and anxiety (Sercekus & Okumus, 2010; Toohill, Fenwick, Gamble, & Creedy, 2014). When primiparous women experience physiological pain caused by contraction of the uterus, their minds expand the fear and anxiety which tense the body and in turn cause more fear and pain. It is a continuous cycle commonly known as the fear-tension-pain syndrome (Dick-Read, 1984). Stressors from environmental factors such as crowding, unfamiliarity with invasive medical care or personnel during labor and the restriction of movement or mobility influence the pain (Manizheh & Leila, 2009). In addition, cultural factors also play a significant role in attitudes toward childbirth pain, while spirituality and beliefs are the main aspects that shape the culture and environment. The neglect of spiritual and cultural factors makes a woman feel that she is in an unfamiliar environment which exacerbates the fear and pain (Callister & Khalaf, 2010; Crowther, 2014; Farry & Crowther, 2014). These factors can exacerbate labor pain in primiparous women to become severe pain.

Regarding Islam, vaginal delivery is very valuable and highly glorified for Muslims because behind all the hardship of pregnancy, normal childbirth and breastfeeding, Allah (God) will give wisdom and promises great rewards for mothers

who struggle against pain and discomfort in childbirth (Muyassaro, 2012; Samieizadeh Toosi, Sereshti, Dashipur, Mohammadinia, & Arzani, 2011; Say, Robson, & Thomson, 2011). In the teachings of Islam, Muslims believe that health, illness or pain, birth, life and death all come from Allah. Thus, Muslim women do not perceive labor pain as a form of punishment but rather as a way of atonement for one's sins and giving birth is a glorious *(jihad)* experience. However, Muslim women are encouraged to seek care (natural treatment), be patience and pray to ask for help from Allah during the pain (QS Al-A'raf 7: 128; HR. Tirmidzi no. 3874; Hoseini, Alhani, Panah, & Behjatpour, 2013), because according to a study by Almeida, Medeiros, and Souza (2012), besides the spiritual belief factor, natural childbirth pain is also recognized culturally.

From a literature review, studies in some countries surveyed the natural or non-pharmacological pain management methods to reduce labor pain and increase appropriate pain-coping behaviors. It was found that the natural methods were influenced by the health care culture in that country. For example, in western countries, homeopathy therapy, that included red onion, arnica, and mountain herb, was frequently recommended in Germany, and massage therapy (54%) was practiced in England (Hall, McKenna, & Griffiths, 2012). Acupuncture was performed in Sweden followed by hydrotherapy, acupressure, music, massage, guided imagery, and breathing techniques (Molter, 2010). A woman's companion or doula support (97.3%), followed by warm showers (91.5%), breathing and change of positions (87.8%), and manual massage (55.9%) were used in Brazil and in the United States of America (Gayeski, Bruggemann, Monticelli, & Santos, 2015). Nevertheless, in Saudi Arabia, especially in

Mecca and Madinah, where the population is one hundred percent Muslim and religious belief in Islam shapes the culture, almost one hundred percent of the women used prayer and felt effectiveness in the relief of pain (Aldossary, While, & Barriball, 2008).

In Indonesia where most women are also Muslim, there is no relevant study on natural or non-pharmacological labor pain management found in this literature review. However, the researcher together with the head of the labor room at Bhinneka Bhakti Husada (BBH) Hospital did a pilot survey in the year 2014 by interviewing 10 primiparous Muslim women who gave birth in the BBH Hospital and found that only two mothers used the recommended praying. The recommended praying called *dhikr* (remembers God by saying the name of Allah) was independently used by the two mothers without guidance from nurses or their family. The rest did not pray during labor because of forgetting and no one to guide them to do the recommended prayer. This made them feel uncomfortable during labor and it also showed that the women had a negative perception of labor pain as the most painful pain. In addition, the researcher interviewed one nurse and a head nurse of the delivery room of this hospital regarding labor pain management. The two nurses informed the researcher that there was no standard operational procedure or any care guideline that included praying. The nurses only suggested that the mothers take deep breaths to reduce labor pain, increase pain-coping behaviors, and shorten the duration of labor (D. Darmayanti & Maemunah, personal communication, June 20, 2014). Hence, these personal communications provided the understanding that nursing care to reduce labor pain and enhance coping with labor pain still needs to be improved.

Pain is a holistic experience and labor pain is influenced by many factors including physical, psychological, environmental, cultural, and spiritual factors. Therefore, holistic care intervention congruent with Islamic ways should be considered in natural labor pain management for primiparous Muslim women in Indonesia. This is supported by the theoretical perspectives in the Theory of Holistic Nursing (Dossey, 2013) which state that professional nurses must give Holistic Nursing practice that not only physical care of the body, but also obligated to care for the mind such as the psychological, emotional, cultural, and also spiritual (spirit) uniqueness of each person to decrease discomfort and pain.

Some supporting evidence also reported that a nurse's concern for cultural, traditional practices, beliefs, and spiritual importance during pregnancy can bring harmony and can increase pain-coping behaviors for pregnant women in order to prepare for the birth more easily (Farnes, Beckstrand, & Callister, 2011; Yılmaz, Kisa, Zeyneloglu, & Guner, 2013). Cultural aspects, religious beliefs, myths, and a woman's knowledge about pregnancy and childbirth are known to influence the perception and interpretation of pain and can play a vital role in a woman's effort to cope with fear and pain in natural birth (Ebirim, Buowari, & Ghosh, 2012; Toohill, Fenwick, Gamble, Creedy, Buist, & Ryding, 2014). Congruently, several studies provided childbirth educational programs regarding non-pharmacologic pain management techniques based on the spiritual and cultural background to increase knowledge, confidence, skills for active coping, ability to give birth, building social support networks, and overcome fear, anxiety, and labor pain (Levett, 2015; Stout, Garret, & Stamilio, 2016).

As a pioneer in the natural birth approach, Dick-Read (1984) mentioned that childbirth education programs with the goals to reduce fear, anxiety, tension, and pain were the successful approaches for a natural birth. Related to that, the Lamaze method, which is a childbirth education model, always consists of relaxation, breathing techniques, and labor support from family (Michael, 2010; Walker, Visger, & Rossie, 2009), along with pain management, warning signs, and physical exercises such as positioning by force gravity (Malkawi, 2016). Moreover, prioritizing on providing childbirth education for primiparous women and their families before childbirth can create positive expectations of giving birth (Handorf, 2017). The culture of having the family present while giving birth can minimize fear, reduce pain, and enhance pain-coping behaviors of women in labor which are becoming part of the culture dimension that cannot be separated from the spiritual dimension (Mullersdorf, Zander, & Erikson, 2011; Sercekus & Baskali, 2016).

The spiritual dimension of the patient is very important in reducing pain and suffering because it can assist women in labor to find strength, a comfortable feeling, and relief from the pain (Callister & Khalaf, 2010; Schultz, Baddarni, & Bar-Sela, 2011). Religion is a spiritual dimension that can give very beneficial assistance during labor (Beiranvand, Noaparast, Eslamizade, & Saeedikia, 2014). Regarding Islamic religion, it has the holistic view in all of life's aspects and serves as a spiritual approach which can be used in a variety of nursing practices (Mardiyono, Songwathana, & Petpichetchian, 2011).

Existing studies reported that the spiritual approach of Islamic praying (*dhikr)* therapy was used in adults and in mental health areas as in chronic heart failure patients (Naghi, Philip, Phan, Cleenewerck, & Schwarz, 2012), insomnia (Purwanto & Zulaikah, 2007), and post-operative abdominal surgery (Sitepu, 2009; Solimeh & Mohamed, 2013). In the delivery room, patients are passive when they listen to the holy Quran as a general practice (Bayrami & Ebrahimipour, 2014; Forouhari, Honarvaran, Masoomi, Robati, Zadeh, Setayesh, 2011; Hasto, 2014; Mirbagher & Ranjbar, 2010; Mohammaditabar, Rahnama, Kiani, & Heidari, 2012; Sharifi**,** Alipour, & Baharloei, 2013). However, there are still many kinds of recommended prayers in Islam, for instance *sholawat, asmaul husna,* and *ruqyah* (Al Kahel, 2012). So far there is no *ruqyah* in active prayer (praying by reciting the Qur'anic verses by themselves that fit the state of the patient while stroking the sick area) as an intervention which makes the patient active in the maternity area. Thus, this study aimed to help the patient have a good birth by using a non-pharmacological technique, focus on active praying, with support from family.

Labor support from family fitted with socio-culture of Muslim women. Role of family in labor support such as help to set positions (physical), stroking (psychological), praying together (spiritual), thus labor support from family is needed by nurse to provide holistic care for women. The researcher developed a Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP) program which consists of nursing interventions (stroking, breathing, and positioning) and integrating with Islamic praying (active prayer/*ruqyah* and surrendering oneself to

Allah). The researcher gave childbirth education on these interventions during the antenatal period and then implemented the intervention program during childbirth with labor support from family to reduce labor pain, increase pain-coping behaviors, and shorten the duration of the active phase of labor.

This program promoted normal birth because having a natural birth for the first pregnancy could prevent the feeling of fear in the next pregnancy and childbirth. It is also safe for the mother and fetus and it is a low cost, effective, efficient, simple, and easy to use method that is appropriate for the culture and spiritual aspects.

Objectives of the study

1. To compare labor pain and pain-coping behaviors of primiparous Muslim women before and after receiving the program at first 3 hours of active phase of labor.

2. To compare labor pain and pain-coping behaviors between primiparous Muslim women participating in the experimental and the control group.

3. To compare duration of active phase of labor pain between primiparous Muslim women participating in the experimental and the control group.

Research Questions

1. Are the labor pain at the first hour, second hour, and third hour from cervical dilation 3-4 cm of primiparous Muslim women in the experimental group lower and pain-coping behaviors higher after receiving the program than before receiving the program?

2. Are the mean scores of labor pain lower and pain-coping behaviors

higher at the first hour, second hour, and third hour from cervical dilation 3-4 cm of primiparous Muslim women in the experimental group than those in the control group?

3. Are the mean scores of duration of active phase of labor shorter of primiparous Muslim women in the experimental group than those in the control group?

Conceptual Framework

The framework for developing the intervention for this study was underpinned by the perspectives and concepts of (1) Islamic Philosophy, (2) Holistic Nursing Theory, (3) Labor Support, and (4) Gate Control Theory (GCT), (5) Concept of Endorphin Release, (6) Gravity/force guide the mechanism of the interventions program.

Islamic Philosophy

As a monotheistic religion, Muslims believe that Allah (God) created heaven and earth and everything in between. Islam involves the relationship with Allah and human beings and everything in the earth. There are five fundamental pillars in Islam that include 1) *Shahadah*, I bear witness, there is no God but Allah, and Muhammad is Allah's messenger, 2) *Sholat*, five daily prayers as obligated prayer and still many prayers as recommended prayers, 3) Fasting, abstinence from food, drink, and sexual intercourse during the daytime throughout the ninth month (*Ramadhan*) for one month, 4) *Zakat*, tithing, almsgiving, charity, and 5) *Hajj*, the pilgrimage to Mecca once in one's lifetime by those who are financially and physically able. True faith in Islam means, 1) Faith to Allah, 2) Faith in Angels, 3) Faith in Prophets (Adam up to Muhammad [25 persons]), 4) Faith in the Scriptures (Qur'an, Ingil, Zabur, Torah), 5)

Faith in the day of judgment (here after, rise of humanity), and 6) Faith in the divine predestination attributed to the occurrence of pleasure and suffering to the will of Allah.

Faith in the Scriptures (Qur'an) is one of the true faiths and praying (recommended prayer) from the five pillars in Islamic Philosophy underpins Islamic prayer intervention to reduce labor pain and enhance appropriate pain-coping behaviors among primiparous Muslim women in this current study. Allah says “Allah sends down (stage by stage) the Qur’an which is a healing and a mercy to those who believe...". (QS.al Isra’, 17: 82). Islam has rules and guidelines that are comprehensive or holistic, harmonious, perfect, clear, and logical which govern all aspects of life (QS Al-Maidah 5: 3; Jati, 2015). Islamic Philosophy is not only beneficial for spiritual and cultural reasons, but also for physical and psychological health. Truly, if someone has faith in Allah, it will make her/his feel at calm, and when the feeling is calm, it can affect the body to be healthy as well, therefore ask both of these things to Allah (healthy spiritual and physical) (H. R Ahmad).

Islamic Philosophy always suggests that human beings have good relationships and respect the culture and beliefs of other people in giving or doing something (QS Al-Hujurat: 13; Ar-Rum: 22). According to Crowther (2014), in addition to physio-psychological and sociocultural factors, a fuller understanding of spirituality is quite needed during pregnancy and childbirth. A spiritual understanding gives a sense of purpose and meaning to life (Farry & Crowther, 2014). Nurses are able to expand their nursing practice through prayer and people are taught to pray to Allah for the love of Allah (Dossey, 2011, 2013; Friedl, 2008).

The Islamic prayer that was taught and used in this current study was the *ruqyah* prayer techniques by oneself by using 14 verses of the Qur'an related to pregnancy and childbirth. All of these verses talk about the concept of the grandeur and majesty of the creation of man by Allah. “Do not you think of Allah's substance or Allah's matter, but please think of Allah's creation” (HR Ahmad & Thabrani). “Verily, only in the remembrance of Allah (think of Allah's creation) do hearts find satisfaction and tranquility” (QS Arra'du 13: 28). If the soul is calm, by ignoring all disturbances including pain, then the physical becomes healthy, harmonious, and happy in the social life. Special things of the recommended praying by using 14 verses from Quran is not only integrated with spiritual dimension, but also integrated with other dimensions of holistic care. If women contemplated the contents of the 14 verses, the women were not fearful (psychological dimension) and surrendered themselves to Allah (spiritual dimension) which created calmness and they accepted the pain. Moreover, active prayer in a low voice can increase cortical activity and higher beta frequencies and the release of endorphins ‘closes the gate’ (physical dimension). Also, praying together with the family is an application of the socio-cultural dimension.

Holistic Nursing Theory

The Holistic Nursing Theory was introduced by Dossey (2013) and as cofounder of the American Holistic Nurses Association said “Holistic Nursing always sees patients as social, emotional, physical, cultural, and spiritual beings”. From the perspective of the theory, there were four components of Holistic Nursing care, which are: (1) physical dimension (knowledge, affective, psychomotor skills, anatomical

physiological); (2) psychological dimension (intellectual and emotional), anxiety, pain, fear, comfort; (3) socio-cultural dimension (family support, financial, social, and traditional backgrounds, cultural, values); and (4) spiritual dimension (faith, moral, hope, religious, and belief system). In addition, there were two concepts from the Theory of Holistic Nursing: (1) Holistic Nursing Care makes the whole person as the centre of care and (2) the whole person is manifested by a harmonious relationship between the body, mind, and spirit (Dossey, 2013). The interconnectedness of body, mind, sociocultural, and spiritual aspects has become a core component of health promotion, prevention of disease, and the promotion of healing or natural birth in this study (Dossey, 2013). The use of Holistic Nursing brings about harmony of the body, mind, and spirit (Dossey, 2013). The goal of holistic care is to facilitate individuals in gaining a higher degree of harmony within their mind, body, and soul.

This goal was pursued through a holistic nursing care guided childbirth preparation with nursing interventions (breathing, stroking, positioning) by integrating praying and labor support from family. All of these processes provided guidelines for patient-family centered nursing care (Baier, 2012). Holistic Nursing is also integrated with religion or belief systems (Mardiyono, Songwathana, & Petpichetchian, 2011), and Holistic Nursing can also enrich and expand understanding with support from the family and environment (Dossey, 2013; Drick, 2014). Furthermore, teaching childbirth education by the Lamaze method, such as breathing techniques, positioning, and stroking (as physical and psychological factors) and Islamic praying, also labor support from family (as the spiritual and cultural factors) will help expand the mother's

knowledge, increase confidence, reduce fear, improve the pain coping strategy, shorten the duration of labor and also create harmony between the body, mind, and spirit (Firouzbakht, Nikpour, Salmalian, Ledari, & Khafri, 2014; Walker, Visger, & Rossie, 2009). Special things of Holistic Nursing by Dossey (2013) are also integrated with culture and belief systems (not only physical treatment) and praying is a good method for healing pain (Dossey, 2011)

Labor Support Concept

Labor support as a social support, can be from the labor nurse, nurses or midwives, family members, friends, and doula with guidance from the nurses and midwives (Hoddnet, 2007; Najafi, Roudsari & Ebrahimipour, 2017). Labor support aims to meet the physical, psychological, informational, socio-cultural, spiritual and emotional needs of women during childbirth (Najafi, Roudsari & Ebrahimipour, 2017). Therefore, labor support can help nurses and midwives in providing holistic care for women in labor (Baier, 2012). Labor support should be from someone who can emotionally empathize with the mother, giving education, providing support to the family and the mothers according to their spiritual culture, and offer technical measures to decrease labor pain (Hoddnet, 2013). In this study, the focus on labor support from the family members with the nurse's guidance in advance can have benefits for the mother and baby (Najafi, Roudsari & Ebrahimipour, 2017).

Gate Control Theory (GCT)

The GCT was proposed by Melzack and Wall in 1965. The GCT emphasizes the opening or closing of a gate at the level of the spinal cord as the

preeminent mechanism controlling the ultimate perception of pain which inhibits or facilitates transmission from the body to the brain (Melzack, 1993). The mechanism of each method of non-pharmacological pain management (stroking, breathing, and Islamic prayer) was guided by GCT to reach the outcomes of this research. Based on the GCT (Melzack, 1993, 1999), stroking can stimulate the large nerve endings and 'close the gate' so that nociceptive firings are not sent to the brain. Also, breathing can inhibit the nociceptor afferents to the spinal cord and the brain. Islamic prayer by using 14 verses of the Qur'an can 1) distract the brain to directly 'close the gate' and 2) inhibit the nociceptor afferents to the brain which then relieves labor pain (Faradisi, 2012; Field, 2008; Jones, Othman, Dowswell, Alfirevic, Gates, Newburn, Jordan, Lavender, & Neilson, 2012; Mander, 2011).

Concept of Endorphin Release

The fourth concept is endorphin release. Endogenous opioids (i.e. endorphins, encephalin, and dynorphins) are released by mu, kappa or delta receptors that are located in the peripheral nervous system, spinal cord, and brain. The hypothalamus releases corticotroponin-releasing hormone (CRH) in response to physiologic stressors such as pain. The pituitary gland synthesizes protein proopiomelanocortin, beta-endorphin, alpha-melanocyte stimulating hormone (MSH), adrenocorticotropin (ACTH), enkephalin, dynorphin, and others in response to a signal from the hypothalamus (Dishman & O'Conno, 2009). Beta-endorphins function through various mechanisms in both the CNS and peripheral nervous system (PNS) to relieve pain when bound to mu-opioid receptors: In the peripheral nervous system (PNS), beta-

endorphins produce analgesia by binding to mu-opioid receptors at both pre- and post-synaptic nerve terminals, primarily presynaptic binding (present throughout peripheral nerves: central terminals of primary afferent neurons, peripheral sensory nerve fibers and dorsal root ganglia). The interactions, when bound, result in inhibition of the release of tachykinins or P substances (key proteins involved in the transmission of pain). In the CNS, beta-endorphins also bind to mu-opioid receptors at the presynaptic nerve terminals (in the descending pain control circuits such as the amygdale and gray matter). However, endorphins inhibit the release of GABA (neurotransmitter) resulting in the production of dopamine (pleasure), thus relieving the level of pain (Sprouse-Blum, Smith, Sugai, & Parsa, 2010).

The breathing can increase blood flow, oxygenation, and blood plasma melatonin, can inhibit the release of tachykinins or P substances in the PNS as a key protein involved in the transmission of pain which results in a decreased awareness of pain. Stroking can be a distraction by focusing on the uterine fundus which helps with relaxation and stimulate the increase in endorphins in the CNS that block the release of GABA, thereby producing dopamine which causes pleasure and decreases pain (Sprouse-Blum, Smith, Sugai, & Parsa, 2010). Islamic praying by focusing and concentration on one point (*Allah*) can produce changes in neural regulation in pituitary hormone secretion by enhancing endorphin hypothalamic and inhibit GABA in the CNS which can increase serotonin to increase production of the neuro-hormone melatonin (Faradisi, 2012; Liou, Hsieh. Hsieh, Chen, Wang, Chen, & Lee, 2010). Melatonin has been shown to depress the CNS, modulate autonomic, metabolic, endocrine, and

immune functions and thus mediate global regulatory changes in various behavioral states that include producing a state of calm in order to reduce labor pain and increase pain-coping behaviors.

Gravity/Force

The last concept used in this study is gravity/force. Gravity is the constant upward motion of the earth's surface that is constantly moving upward due to the gradual expansion of mass, space and time. A simple upward force and motion at the surface of every atom is what we feel as gravity (Capozziello & De-Laurentis, 2011). Gravity positioning and mobilization increased the natural levels of oxytocin to circulate in the blood resulting in uterine contractions that work effectively with less painful and shorten the delivery time (Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014; Gupta, Hofmeyr & Shehmar, 2012).

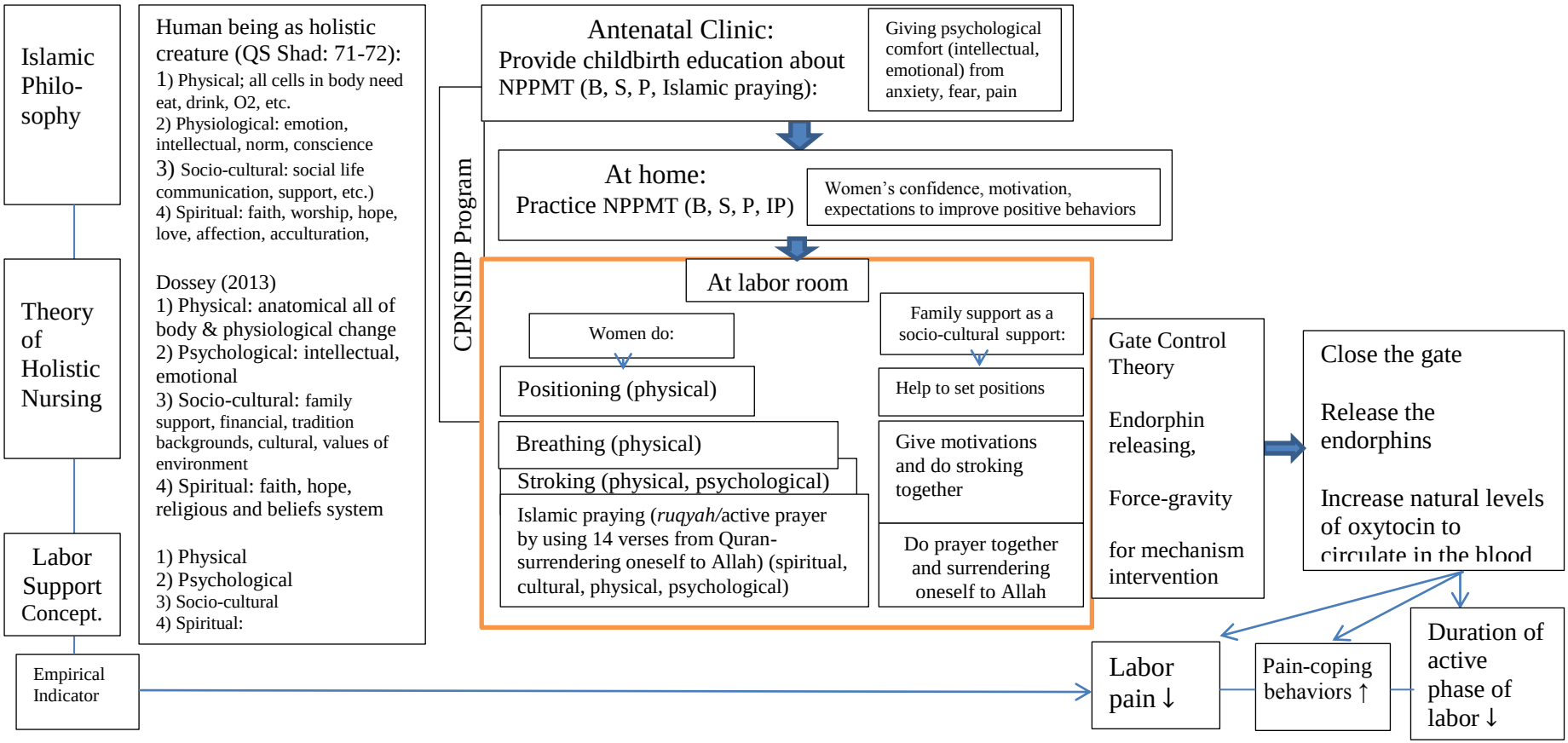
In the current study, when a primiparous woman is in the upright position there is less risk of compressing her aorta which results in a better oxygen supply to the baby (Gupta, Sood, Hofmeyr, & Vogel, 2017). Force and gravity helps the uterus to contract more strongly and efficiently and causes the fetus to get in a better position to pass through the pelvis. The descent of the fetus makes uterine contractions stronger and more efficient in effacing and dilating the cervix which then results in a shortened duration of the active phase of labor and brings the baby down and out (Lawrence. Lewis. Hofmeyr, & Styles, 2013; Vargens, Silva, & Progianti, 2013).

Furthermore, Holistic Nursing can also integrate labor support from family and non-pharmacological techniques into practice as a guide for individuals and

families to choose a convenient therapy (Lowdermilk, Perry, & Cashion, 2010; Mariano, 2013). The framework of this study includes labor support from family. From the literature review, it was found that labor support from family serves as social support for women when coping with labor pain (Mullersdorf, Zander, & Eriksson, 2011). The more that people join in praying for someone, the sooner their requests are granted by God (Muyassaro, 2012; Qomariyah, 2013). It indicates the importance of the role of the family and religion in providing care. Culture is also very important in the provision of caring. The less individualistic nature of the family members is consistent with the increased use of prayer together in the family (Almutairi & McCarthy, 2012; Gillum & Griffith, 2009). Holistic Nursing is congruent with Islamic Philosophy when one feels a bond with another (Favero, Pangliuca, & Lacerda, 2013).

The conceptual framework and details of each concept for the CPNSIIIP program in this study is shown in Figure 1 as follows:

Conceptual Framework of CPNsIIIP



Note: 1) NPPMT=Non Pharmacological Pain Management Technique (breathing, stroking, position, family support, Islamic praying/ruqyah-surrender to God)
2) Harmony (body, mind, spirit) as outcomes of holistic care. Mind*=head/cognitive/knowledge,* Body*=physical,* Spirit*=hearth, emotion, soul, affective, moral*

Figure 1. **The conceptual framework of the study**

Hypotheses

The specific hypotheses are as follows:

1. The labor pain at the first hour, second hour, and third hour from cervical dilation of 3-4 cm of primiparous Muslim women in experimental group is lower after receiving the program than based line (before receiving program).

2. The labor pain at the first hour, second hour, and third hour from cervical dilation of 3-4 cm of primiparous Muslim women in the experimental group is lower than those in the control group.

3. The pain-coping behaviors at the first hour, second hour, and third hour from cervical dilation of 3-4 cm of primiparous Muslim women in experimental group is higher after receiving the program than based line (before receiving program)

4. The pain-coping behaviors at the first, second, and third hour from cervical dilation of 3-4 cm of primiparous Muslim women in the experimental group is higher than the control group.

5. The duration of the active phase of labor in the experimental group is shorter than the control group.

Definition of Terms

CPNsIIIP Program.

The Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP) program refers to a new program developed by the researcher for pregnant Muslim women and childbirth based on Islamic Philosophy (*tauhid* concept from the Qur'an and Hadith, true faith in Islam, five pillars of Islam, and the principle of *ruqyah* prayer in Islam), Holistic Nursing Theory, and Labor Support from family.

The program consisted of four phases.

The four phases included: 1) preparation or health teaching phase where the researcher gave childbirth education to pregnant women and families using the CPNsIIIP program (breathing, stroking, positioning, and Islamic praying) from the third trimester of pregnancy (32 weeks); 2) refresher/reminding phase wherein the mother practiced stroking, positioning, and Islamic praying at home every day until she entered the hospital for delivery. The researcher monitored the participants every day by phone and needed to meet them more than once to check again whether they did the interventions correctly (at checkup time or home visit); 3) working phase, wherein stroking, breathing, positioning were applied and praying three times during delivery at 1 hour, 2 hours, and 3 hours after cervical dilation of 3-4 cm. According to Association of *Ruqyah Syar'iyyah* Indonesia (Fillah, 2015) and Malaysia *Ruqyah* Therapy (Al-Idrus, 2011), brief overview of the step in working phase was follow (1) set position, breathing, *ruqyah* with praying by herself (oneself), (2) do stroking by touching sick area while surrendering oneself to Allah by saying "*Laa haula walaa quwwata illa billah"*, (3) evaluation the sick area. In this study, the researcher measured pain and pain-coping behaviors at same time after interventions each hour. Fourth phase is 4) termination phase. In this phase, the researcher is encouraging the patient to express her feelings and emotions after birth, the mother and family said 'Thank you' to Allah (*Alhamdulillah*).

Labor pain.

Labor pain refers to feeling of hurt from uterine contractions and cervical dilation that occurred during the active phase of labor. Labor pain was

measured four times by using the Visual Analogue Scale (VAS). The VAS consisted of horizontal line, each 100 millimeters in length. The higher the score of the VAS, the more labor pain was thus indicated.

Pain-coping behaviors.

Pain-coping behavior refers to how pregnant women expressed labor pain (verbal and non-verbal) during the active phase of labor. Non-verbal responds such as, neck arching, restlessness, protective movement, breathing control, grimacing, narrowing of the eyelids, cheek raising, nose wrinkling, upper lip raising. Verbal responds like crying, sobbing, moaning, grunting, or sighing, desperate or some complaints of pain, always or sometime asking for help to God or other (e.g. ‘‘O God, help me please’’). The researcher used the Pain Behavioral Observation Scale (PBOS) from observation checklist of laboring women's behavior by Baosoung (1983), by Chuntharapat (2008), and Arayajaru (2012) to observe the pain-coping behaviors of the pregnant women during active phase of labor.

Duration of Labor

The duration of labor in primipaorus Muslim women is length of active phase of labor from at 3 -4 cm of cervical dilatation until fully cervical dilation (10 cm of cervical dilation). The duration is measured in minutes.

Significance of the Study

One of the basic principles of modern nurse-midwifery understands the problems of primiparous Muslim women and how they cope during labor. This study resulted in a new and independent intervention for maternity nurses to provide care for the mother, her baby, and her family during pregnancy and labor in order to

prevent abnormal labor, fetal distress, and anxiety of the family. The CPNsIIIP program was proven to help overcome pain during labor, increased pain-coping behaviors and resulted in a reduced period of labor which was underpinned by the Islamic Philosophy, the Theory of Holistic Nursing, and Labor Support. In addition, the results of the study provided empirical evidence to promote natural birth, prevent complications for the mother and baby such as prolonged labor, and decrease the number of cesarean sections. In addition, this study also provided significant information for future research associated with holistic care.

CHAPTER 2

LITERATURE REVIEW

The outline of the review to support the study encompasses the following aspects:

1. Labor Pain
    - 1.1 Overview of labor pain
    - 1.2 Theories in labor pain
    - 1.3 Impacts of labor pain
    - 1.4 Factors relating to labor pain
    - 1.5 Measurements of labor pain
2. Pain-Coping Behaviors
    - 2.1. Overview of pain-coping behaviors
    - 2.2. Factors relating to pain-coping behaviors
    - 2.3. Measurements of pain-coping behaviors
3. Duration of Labor
    - 3.1. Phases and duration of labor
    - 3.2. Factors relating to duration of labor
    - 3.3. Gravity force and its relationship to the duration of labor
    - 3.4. Relation of labor pain, pain-coping behaviors, and duration of labor
4. Selected Factors of Labor Pain, Pain-Coping Behaviors, and Duration of Labor
5. Islamic Philosophy
    - 5.1. Islamic Philosophy
    - 5.2. Islamic praying
    - 5.3. The use Islamic Philosophy in the research study

6. Holistic Nursing Theory

    6.1. Horizon the Holistic Nursing Theory

    6.2. The use of Holistic Nursing Theory in the research study

    6.3. Relation of Holistic Nursing Theory with Islamic Philosophy

7. Labor Support Concept

    7.1. Concept of Labor Support

    7.2. The use of Labor Support in the research study

8. Non-pharmacological Labor Pain Management

    8.1. General non pharmacological techniques of pain management

    8.2. Existing program about non-pharmacological methods for lowering pain, increase Pain-coping behaviors and shortening duration of labor

9. Holistic Nursing-Childbirth Preaparation (CPNsIIIP) Program

    9.1. Definition of Childbirth Preparation and CPNsIIIP Program

    9.2. Components and Process of CPNsIIIP program

    9.3. Mechanism of CPNsIIIP program

Labor Pain

This section of labor pain includes the contents about overview of labor pain, theories in labor pain, impacts of labor pain, factors relating to labor pain, and measurements of labor pain

Overview of Labor Pain

Merskey (1996), describes pain in general that pain is an expression of unpleasantness that interferes with the integrity of an organism, and is a reaction to dissatisfaction with something from the body and outside the body. The phenomenon of pain rises from noxious causes and non-noxious causes that is influenced by the

absolute magnitude of a stimulus and time (Cervero & Merskey, 1996). Pain is a subjective experience and multifaceted with physiological, psychological, cultural, social and spiritual factors (Bourke, 2013).

Labor pain has been rated as painful compared to back pain, cancer, phantom limb pain, toothache, and arthritis (Hadjistavropoulos & Craig, 2012). Labor pain physiologically is caused by stretching of the cervix during dilation, ischemia of the muscle wall of the uterus, uterine contractions, cervical dilatation, stretching of the vagina and perineum, influenced by physiology, psychology, culture, environmental and spiritual factors (Ebirim, Buowari, & Ghosh, 2012; Smith, 2015).

Labor pain consists of sensory, affective/distress, cognitive, and evaluative dimensions (Melzack & Casey, 1968; Melzack & Wall, 1996). The sensation of labor pain can be described as the unpleasant feeling of hurt in the uterine that relates to uterine contractions and cervical dilation (Merskey, 1996). Distress (affective) pain is defined as the emotional distress related to the sensation of labor pain, such as, exhausting and tiring (Capogna, et al, 2010: Melzack & Casey, 1968). The definition of cognitive pain is a restriction of pain descriptors that may be influenced by obstetric variables, such as, parity and progress of labor (Capogna, et al, 2010). Pain evaluation include quality (e.g., deep, superficial), intensity/severity, location, radiation pattern, duration, timing (fluctuation and frequency), and exacerbating and relieving factors (Markman & Narasimhan, 2014).

Labor pain is explained by physical mechanism that contractions move in a wave-like motion from the top of the uterus to the bottom. Gap junctions between the cells of the myometrium and an increase of oxytocin receptors in the myometrium could increase the activity of the myometrium contractions (frequency and intensity

of contractions), because it is believed to work by increasing the concentration of intracellular free Ca 2+ (a process that generates the activity of myosin light chain kinase, myosin phosphorylation, and then the interaction of phosphorylated myosin and actin) (Lestari, 2008). Labor pain is carried by the visceral afferent fibers of T10-11 from the uterus, cervix, and upper vagina from the cervical plexus and enters the spinal cord at the T10-11 levels. The visceral afferent fibers also enter the sympathetic chain at L2 and L3 levels (Ebirim, Buowari, & Ghosh, 2012).

In the first stage of labor, mediated by T10 to L1 spinal segments, pain is located in the lower portion of the abdomen and radiates to the lumbar area, increasing with the intensity of uterine contractions (Labor & Maguire, 2008). During the active phase of labor, pain is carried by T12 to L1, and S2 to S4 spinal segments, the pain is located mainly in the lumbar and suprapubic regions (Gallo et al., 2013; Labor & Maguire, 2008). However in this study, the researcher only measures the levels of sensation of the active phase labor pain for primiparous Muslim women.

Theories in Labor Pain

The well-known theories related to pain comprises of Gate Control Theory, and Endorphin Releasing Theory. These theories provide conceptual frame work to explain about pain mechanism during labor and mechanism of interventions in reducing labor pain in the study.

Gate Control Theory (GCT).

The GCT was proposed by Melzack and Wall in the year 1965. This theory has five assumptions: 1) the passage from afferent fibers to spinal cord transmission cells and then to local reflex circuits and the brain is modulated by a spinal gate mechanism in the dorsal horn which facilitates or inhibits the passage of

the impulse, 2) the spinal gate mechanism is influenced by the relative amount of activity in large diameter (low threshold myelinated afferent) fibers and small diameter (high threshold myelinated A-delta and unmyelinated C fibers: activity in large fibers leads to inhibit transmission (close the gate) and small-fiber activity for example tissue injury leads to facilitate transmission (opens the gate), 3) the spinal cord gate mechanism, operates in the lamina 2 of the substantia gelatinosa (SG) of the dorsal horn which is influenced by nerve impulses decreasing from the brain, 4) the specific system of large diameter, conducting fibers quickly (the central control trigger) activates selective cognitive processes that then affect, the descending fibers, and the modulating features of the spinal gate mechanism, 5) if output of the spinal cord transmission cell surpasses a critical level, it activates neural areas in the action system (behaviors and experience) (Melzack & Wall, 1996).

The GCT involves three systems including: 1) the gate system (spinal cord level), that modulates the synaptic transmission of nerve impulses from peripheral fiber to central cell by SG acting as a gate control system. Non pharmacological pain management can distract are thought to work by closing down a hypothetic gate in the spinal cord, thus preventing pain signal from reaching the brain, 2) the central control system (thalamus), which is represented by a line running from the large fiber to the central control which can either inhibit or facilitate the T-cell, thereby intensifying or decreasing its response to pain. Central control influences are mediated through the gate control system, and 3) the action system triggered by the T-cell that marks the beginning of the sequence of activities that occur when the body sustains damage. The T-cell determines which impulse will continue down the spinal cord and then to other parts of the body (Mander, 2011). The GCT emphasizes the

opening or closing of a gate at the level of the spinal cord as the preeminent mechanism controlling the ultimate perception of pain with inhibits or facilitates transmission from the body to the brain (Melzack, 1993; Mendell, 2014). Non pharmacological pain management can inhibit the ascending of nociceptor to the spinal cord and the brain.

The perception of pain includes three interactive cerebral processes: 1) sensory discriminative (somatosensory components): gate system, 2) motivational-affective (limbic system components); cultural learning, past experience, personality variables, 3) cognitive-evaluation dimensions (thalamocortical component); attention, anxiety, and expectation (Melzack, 1999). When painful stimuli are transmitted to the brain stem and thalamus, it will active the multiple cortical areas and appear several responses as follows: 1) reticular system: autonomic and motor response to pain and for warning the individual to do something, 2) somatosensory cortex: interpretation of sensation and perception (intensity, type, location, memory, cognitive activities), 3) limbic system: emotional and behavioral response such as attention, mood, motivation, past experience (Mander, 2011).

The GCT suggests that pain is a multidimensional experience. The best way to measure the magnitude of acute pain during labor is yet to be established. Any therapy that promotes relaxation and distraction can diminish the pain response (Molter, 2010), stimulation of large fibers can close the gate, while stimulation of small fibers tends to open the gate (Melzack & Wall, 1996).

Endorphin Releasing Theory.

An endorphin is a large polypeptide which is part of the endogenous opioid. There are two opioids: 1) exogenous opiates, such as, heroin and morphine, 2)

endogenous opioids (endorphins, encephalin, and dynorphins) which are peptides that have biochemical properties similar to exogenous opioids. Endogenous opioids are released by Mu, kappa or delta receptors (the peripheral nervous system, spinal cord and brain). Opioid receptors are also found in the brain frontal cortex and limbic regions, such as, the amygdala and hippocampus and are involved with mood and pain. Enkephalin and leu-enkephalin are also stored in the adrenal medulla and can be released with catecholamines into the gastrointestinal tract, heart, and blood circulation during stress. Endogenous opioids have various effects involving: pain regulation, cardiovascular regulation, respiration, appetite and thirst, gastrointestinal activity, renal function, temperature regulation, metabolism, hormonal secretion, reproduction, immunity, learning, and memory (Dishman & O'Conno, 2009). The hypothalamus releases corticotroponin-releasing hormone (CRH) in response to physiologic stressors such as pain. The pituitary gland synthesizes protein proopiomelanocortin (beta-endorphin, alpha-melanocyte stimulating hormone (MSH), adrenocorticotropin (ACTH), enkepalin, dynorphi and others) in response to a signal from the hypothalamus (Dishman & O'Conno, 2009).

Assumptions of beta-endorphins function through various mechanisms in both the central (CNS) and peripheral nervous system (PNS) to relieve pain when bound to mu-opioid receptors: 1) in the PNS, beta-endorphins produce analgesia by binding to mu-opioid receptors at both pre- and post- synaptic nerve terminals, primarily presynaptic binding (present throughout peripheral nerves: central terminals of primary afferent neurons, peripheral sensory nerve fibers and dorsal root ganglia). An interactions when bound, results in inhibition of the release of tachykinins or P substance (a key protein involved in the transmission of pain), 2) in the central

nervous system (CNS), beta-endorphins also bind mu-opioid receptors at presynaptic nerve terminals (in descending pain control circuits; amygdala, gray matter etc.). However, endorphin inhibited the release of GABA (neurotransmitter) resulting production of dopamine (pleasure), thus relieve pain level (Sprouse-Blum, Smith, Sugai, & Parsa, 2010). Nonpharmacological pain management can distract from pain which acts on the brain to project directly to close the gate and inhibition of P substance in the PNS and inhibit nociceptor afferents to the spinal cord and neuromatrix output involves modulation in all brain function and the stress regulations system from the body can release endogenous opioids (endorphin, encephalin, etc.), thus produce a state of calm in order to reduce labor pain

Impacts of Labor Pain

From reviewing of the literature, some studies explored the impacts of labor pain which can be summarized in the following.

Adverse effect on uterine blood flow.

Severe labor pain can increase carbon dioxide in blood, cause peripheral vascular resistance, and increase oxygen consumption (Ebirim, Buowari, & Ghosh, 2012). Severe labor pain can increase levels of maternal catecholamine that reduce the effectiveness of contractions, decrease blood flow to uterine as cause fetal distress and post-traumatic stress disorder after the birth (Rooks, 2012).

Poor pain-coping behaviors.

Intensity of pain has effect to the pain-coping behaviors (Ebirim, Buowari, & Ghosh, 2012). If the women had severe labor pain, they tended to have inappropriate or non-adaptive behaviors, such as restlessness, crying out, sobbing, uncontrolled breathing, grimacing, wincing, showing desperation, and often asking

for help (Hsieh, Tripp, & Ji, 2011), because Severe labor pain cause maternal exhaustion, therefore the mother to use poor coping strategies (Rooks, 2012).

Increase the duration of labor (dystocia).

Severe labor can increase catecholamine that make uterine contractions do not work effectively are the important cause of prolonged labor (dystocia) (Rooks, 2012). Pain disturbs the maternal autonomic functions and release catecholamine (hormones that inhibit uterine activity) resulting in abnormal labor and fetal distress (Adams, Eberhard-Gran, & Eskild, 2012).

Factors Relating to Labor Pain

Women experience the pain of labor differently, there are many factors contributing to labor and to the overall perception of a mother's pain. Labor pain is influenced by physiology, psychology, environmental, culture and spiritual factors (Smith, 2015). Detail of the factors described below:

Physical factors.

From the literature review, there are many factors that are related to labor pain as described below:

Parity. Primiparous women experience more pain than multiparous women in the first stage of labor because there is little progress in cervical dilation before effacement is well advanced and low fetal station, but for multiparous women, cervical dilation and effacement could occur at the same time (Hall, Stoll, Hutton, & Brown, 2012). Low fetal stations make stronger stimulation of the pelvic and cervical nociceptors by the fetal head cause greater pain in primiparous women (Capogna, Camorcia, Stirparo, Valentini, Garassino, & Farcomeni, 2010**;** Hall, Stoll, Hutton, & Brown, 2012).

Painful menstruation. Women who have history of menstrual difficulties and more painful menstrual periods have significantly more labor pain. It may be that both menstrual cramps and labor contraction produce the same higher levels of prostaglandin (Melzack, 1993). Women who have primary dysmenorrhea are associated with an increase in labor pain (Saifudin, 2008).

Age of the mother. Labor pain was found to be more severe in younger women (20-34 years) compared to older (> 35 years) (Strestha, Pradnan, & Sharma, 2013). Mother who has age less than 20 years old, the means of reproduction not mature yet, often resulting complications of childbirth and related to the pain (Cunninghum et al., 2010).

Fetus's weight. The more the fetus weighs, the more pregnant women tend to have more pain (Melzack, 1993). Women with more fetal weight, tend to experience more labor pain (Saifudin, 2008).

Mother's weight/height ratio. Pregnant women who weigh more per unit of height have more pain, and women with balanced weight and height have significantly lower average scores of labor pain than overweight women (Allameh, Tehrani, & Ghasemi, 2015: Melzack, 1993).

Time of birth. Women who give birth at night have less pain and stress than during daylight hours, presumably due to the opportunity to develop coping strategies (Melzack, 1993). There are significant lower labor pain if women gave birth in the morning than in the afternoon, evening and night time (Aya, Vialles, Mangin, Robert, Ferrer, Ripart, & de La Coussaye, 2004).

Rupture of the membranes. Pregnant women with spontaneous membrane rupture is thought to release hormones that stimulate contractions and have

rapid cervical dilation, hence increased labor pain and shorten the duration of labor (Smyth, Markham, & Dowswell, 2013).

Prenatal sleep deprivation and fatigue. The reductions total sleep time during third trimester of pregnancy which is caused by fetal movement, heartburn, voiding at night etc. made the primiparous women experienced higher levels of labor pain (Hall, Stoll, Hutton, & Brown, 2012) and more fatigue during labor (Hall, Stoll, Hutton, & Brown, 2012; Melzack, 1993).

Position. The mother's position during labor in first stage of labor: uterine contractility in the upright position can shorten duration of labor, however lying on the side remains the most widely requested position by labor women because lying on side position led to reduce labor pain than upright position (Fridh, Kopare, Gaston-Johansson, & Norvell, 2007; Gupta, Sood, Hofmeyr, & Vogel, 2017; Mamede, Almeida, Souza, & Mamede, 2007).

Psychological factor.

Among the psychological factors that contributed to labor pain such as stress, anxiety, fear, information, communication, and suffering as described below:

Stress, anxiety, fear. When primiparous women experience physiological pain caused by contraction of the uterus, their minds expand the fear, stress and anxiety which tense the body and in turn cause more fear and pain. It is a continuous cycle commonly known as the fear-tension-pain syndrome (Dick-Read, 1984**).** Fear and anxiety in primiparous adolescent mothers can increase pain if no precautions are taken such as providing education (Arayajaru, Serisathien. Yusamran. & Phahuwatanakorn, 2012).

Information and communication (childbirth preparation). The

pregnant women who get information and communication regarding childbirth preparation have positive women's interpretation of the labor pain, can determinant choice and control to reduce pain (Dahlen, Barclay, & Homer, 2010). Education given significantly reduce fear and pain (Kizilirmark & Baser, 2016).

Suffering. Painful event in a woman's life can contribute to the women's perceptions of labor pain. More suffering in the life they have, the higher pain will be (Yual, Kaur, & Kaur, 2008).

Environmental factor.

Environmental factors that related to the labor pain described below:

Crowding and unfamiliar environment. Noisy labor room make the women be inconvenience and can contribute more labor pain (Manizheh & Leila, 2009)**.** Unfamiliarity with invasive medical care such as vaginal examination, and unfamiliar personnel during labor such as unknown with birth attendant, and restriction of movement or mobility in that place influence the pain (Manizheh & Leila, 2009)

Setting environment. The primiparous women who gave birth at home have more positive birth experiences compare with at hospital (Dahlen, Barclay, & Homer, 2010).

Cultural factor.

Cultural factor is also influenced by race, ethnic and support as present in the following:

Race and ethnic. Research founded that more pain and limitation pain control in non-Hispanic white patients, compared with Hispanic, black patients (Anderson, Green, & Payne, 2009). Batak ethnic are less tolerant of pain than

Javanese (Desmawati & Christe, 2009).

Support. Women who get less support from family, environment-culture, and birth attendance will have sense of loss of control and sense of abandonment (Shavers, Bakos, & Sheppard, 2010; Yual, Kaur, & Kaur, 2008). The quality of nurse caring and family's presence can contribute to positive experiences of birth (Dahlen, Barclay, & Homer, 2010) and expectations of labor (Yual, Kaur, & Kaur, 2008).

Spiritual factor.

The most important source from spiritual factors that influence pain including beliefs-faith and religious as described below;

Beliefs and faith. Beliefs on God play a significant role in attitudes toward childbirth pain more than who does not believe on God (Shavers, Bakos, & Sheppard, 2010). Patient's belief and faith in God (obeying Islamic tenets), can make good pain-coping behaviors (Babgi, 2010).

Religious. Religious ritual is very important during childbirth because childbirth is a meaningful time for women in their life, properly, nurses facilitate women to practice religious ritual during give birth (Crowther & Hall, 2015). African Americans and Hispanics with religious are more likely for using prayer and other religious coping strategies to cope their pain than non-Hispanic whites (Anderson, Green, & Payne, 2009).

Measurements of labor pain

There are several instruments of pain including Numeric Rating Scale visual analogue, verbal rating scales, McGill Pain Questionnaire, pain drawing, etc. The traditional paper-and-pencil Visual Analogue Scale (VAS) had been selected to

assess clinical pain in labor in many studies (Field, 2008; Martenson & Bergh, 2011). The VAS is based solely on the patient's perception and can be influenced by culture, age, and situational factors like labor pain (Field, 2008; Martenson & Bergh, 2011). Easy to use, if it is printed in big form, pregnant women can see the scale easily (Martenson & Bergh, 2011). The scale also easy to score and analyze due to labor pain is measured by self-report on a horizontal 100 mm Visual Analog of Pain Scale: If the women have a lot of pain, they make mark close to the right end, if the women do not have much pain, they make mark closer to the left end, and if the women have a moderate of pain, they make mark in the middle of the line. A higher score implies a higher level of pain (Chuntharapat, Petpichetchian, & Hatthakit, 2008).

Pain-Coping Behaviors

This section presents about overview pain-coping behaviors and relation of pain-coping behaviors and labor pain.

Overview of Pain-Coping Behaviors

Pain coping behavior is how pain is expressed by a person (Hsieh, Tripp, & Ji, 2011; Merskey, 1996). It is important to consider because everyone responds differently to pain. Sullivan (2012) reported the responses of pain-coping behaviors comprise: 1) facial expressions, such as, relaxing, tensing, grimacing or wincing, 2) vocalization (para-verbal pain expressions), such as, grunts, normal talking, sighs, crying and moans, 3) and bodily movements, such as, guarding, relaxing or protective movement, holding, restlessness, touching or rubbing. Neuro-regulatory systems (reflexive and purposive) govern the pain expression. The responses of pain behaviors include: 1) nonverbal (nose wrinkling, breathing control, neck arching, upper lip raising, closing of the eyelids), 2) communications

vocalization (e.g. ‘‘Oh God, help me please’’, no complaints of pain, grunting or sighing), communications non-vocalization like guarding (stiff fingers, keeping one position), and 3) behavior (wiping, sweeping, caressing) (Craig, Versloot, Goubert, Vervoort, & Crombez, 2010; Hsieh, Tripp, & Ji, 2011).

According to Babgi’s study (2010), pain-coping behaviors could be active or passive. Active (adaptive) pain-coping behaviors included: religious practices (praying, listening or reciting the Holy Qur'an), and cognitive methods (thinking that one is more stronger than the pain, thinking that one is still in satisfactory health despite the pain, distracting oneself from pain, visualization of pleasant scenes, thinking about pleasant things).

Factors Relating to Pain-Coping Behaviors

Pain-coping behaviors is also influenced by physiology, psychology, environmental, culture and spiritual factors (Smith, 2015). Factors relating to pain-coping behaviors are described as follow.

Physical factors.

Among the physical factors that contributed to pain-coping behaviors such as age and frequency of occurrence of pain. Detail of the factors described below

Age. Related with labor pain, the pain-coping behavior was found to be more uncontrolled in younger women (20-34 years) compared to older (> 35 years) (Strestha, Pradnan, & Sharma, 2013). Lower of pain-coping behaviors in the adolescent mother due to an increase fear and have no experience about childbirth (Arayajaru, Serisathien, Yusamran, & Phahuwatanakorn, 2012).

Intensity and frequency of occurrence of pain. Pain-coping behaviors depend on the frequency and intensity of pain (Ebirim, Buowari, & Ghosh, 2012). If

intensity and frequent occurrence of pain more, thus more severe labor pain, and they tended to have uncontrolled or inappropriate behaviors, such as restlessness, crying out, sobbing, uncontrolled breathing (Hsieh, Tripp, & Ji, 2011).

Psychological factors.

The most common source related with psychological factors that influence pain-coping behaviors including emotional distress and thinking style as described below;

Emotional distress.

Women's distressed, anxiety, fear of pain, and feelings of helplessness more likely make lower pain-coping behaviors score (. High levels of concern for self and the baby, such as, high anxiety and fear of possible loss of the baby (many complications), can tended to have uncontrolled or inappropriate or non-adaptive behaviors, such as restlessness, showing desperation or low of pain behavior observation score (Levett, 2015; Perry, Hockenberry, Lowdermilk, & Wilson, 2010). However, emotions during labor influenced by hormonal changes can effect to woman's behaviors to face pain (Dixon, Skinner, & Foureur, 2013).

Thinking style, positive thinking is potential to alter habitual behavior by forming new associations (Levett, 2015; Perry, Hockenberry, Lowdermilk, & Wilson, 2010). Mothers who think scary things about childbirth such as fearing a baby and herself disability or dying are associated with lower pain-behaviors observation scores (Arayajaru, Serisathien, Yusamran, & Phahuwatanakorn, 2012).

Cultural and environmental factors.

There are several factors from cultural and environment that was associated with pain-coping behaviors. These include family support (marital status,

living with family) ethnic, information, and good program as described below:

Family support. Marital status like married and living with family are one of the factors that have a significant in determining mother's health status during pregnancy and labor (Levett, 2015). Husband and family support (living together in the one house) make the women are confidence and using positive coping to face childbirth pain. It would be better to live together in one house to provide support every time (Keumalahayati, 2008; Perry, Hockenberry, Lowdermilk, & Wilson, 2010).

Ethnic. Same with pain, uncontrolled pain-coping behaviors in non-Hispanic white patients, compared with Hispanic, black patients (Anderson, Green, & Payne, 2009). In Indonesia, Batak people are less tolerant of pain than Javanese, however need to future research to know why the Bataknese are less tolerant of pain than Javanese (Desmawati & Christe, 2009).

Information received. Information about childbirth from family and birth attendance, or antenatal education, in preparatory childbirth, pregnant women are assisted in developing their own personal coping strategies, and a broadening of the range of coping strategies (Levett, 2015; Perry, Hockenberry, Lowdermilk, & Wilson, 2010). In antenatal education taught things usually: 1) easier to learned, 2) less dependent on practice, 3) can easily be prompted in labor by nurse-midwifery, 4) Enough time in antenatal classes to practice, 5) helping staff and family to become knowledgeable and confident to encourage women to use coping strategies in labor, 6) intention. The importance of implementation intentions in antenatal period is very beneficial to apply intervention during birth (Escott, Slade, & Spiby, 2009).

Coordinated and directed program. Pregnant women who get a good

program could show active pain-coping behaviors (Hsieh, Tripp, & Ji, 2011). Provided childbirth educational programs that are coordinated and directed overcome fear, anxiety, and labor pain (Stout, Garret, & Stamilio, 2016).

Spiritual factors.

Spiritual factors contributing to create appropriate of pain-coping behaviors. Babgi (2010) described the adaptive of pain-coping behaviors mostly come from:

Belief and faith. Patient's belief and faith in God (obeying Islamic tenets), can make good pain-coping behaviors (Babgi, 2010). In Islam, if someone has faith in Allah, it will make her/his feel at calm and good behave. When the feeling is calm, it can affect the body to be healthy as well (H. R Ahmad).

Informational support about spirituality by the nurses. Pregnant women with adequate information from the nurses could show active pain-coping behaviors (Hsieh, Tripp, & Ji, 2011). A nurse's concern for giving support about spiritual factors importance during pregnancy can bring harmony for the birth smoothly (Yılmaz, Kısa, Zeyneloğlu, & Güner, 2013).

Relying on their spiritual and cultural background. Cultural and spiritual play an important role during pregnancy and giving birth (Yılmaz, Kısa, Zeyneloğlu, & Güner, 2013). In fact, everything we do in life in the world always relying on the spiritual and cultural background. In Islam, in doing everything always praying and surrendering one-self to Allah after make maximal effort and work due to Allah that master the heaven, earth and everything in between (QS Ali Imran: 190, 191; Al A'raaf : 54; Al An'am: 11, 73, 101; AL-Anbiyaa: 30; At Taubah: 36). Our success is only by Allah, no strength, no power, but Allah (QS Albaqarah: 255; Al-

KAhfi: 39; HR Abu Hurairah). If someone has do regularly and consistency like that, thus whatever happens on his/her self, she/he will remain calm and happy every time and wherever she/he is due to there is always God (Allah) with him (HR Abu Hurairah).

Measurements of Pain-Coping Behaviors

The Pain Behavior Observation Score (PBOS) was used to observe the pain-coping behaviors of the women during labor. This observation form derived from Sterock Labour Coping Scale (1972). This instrument was translated, composed, and developed from the observation checklist of laboring women's behavior by Baosoung (1983) and modified some wording by Supradith (2003), and also modified some score by Chuntarapat (2008). Simple instrument was also used by Arayajaru (2012). This instrument was used to record the parturient behaviors during uterine contractions. It consisted of five behaviors of women during uterine contraction and relaxation: vocalization, body movement, breathing control, facial expression, and communication. The kinds of behaviors that included score 1, 2, and 3 (Likert Scale) (detail in chapter 3).

Duration of Labor

This section presents about overview duration, phase of labor, factors relation of duration and labor pain.

Duration and Phases of Labor

Duration of labor is length of time of childbirth process. There are four stages of labor, namely the first, second, third, and fourth stage of labor (Murray & Mc Kinney, 2014; Ricci& Kyle, 2009). The first stage of labor begins with the onset of regular contractions and ends with complete cervical dilation. The second stage of

labor is from full cervical dilation to the delivery of the baby. The third stage is from the delivery of the baby until the delivery of the placenta. Finally, the fourth stage is from the delivery of the placenta until two hours post-partum (Ebirim, Buowari, & Ghosh, 2012; Perry et al, 2014), or the first one to four hours after birth (Murray & Mc Kinney, 2014; Ricci & Kyle, 2009).

In this research, the researcher studied the first stage of labor, because active phase is part from first stage of labor. This stage of labor can be classified in two phases or three phases. The three phases classification consists of: 1) latent phase (when cervical dilation is from 0 to 3 cm, for primiparous women a duration of approximately 6-8 hours), 2) active phase (begins when the cervix is 3-4 cm dilated until 8 cm, approximately 6 hours for primiparous women), and 3) transition phase (cervical dilation from 8 to 10 cm, lasting up to 1 hour for primiparous women) (Hatfield, 2014; Neal, Lowe, Patrick, Cabbage, & Corwin, 2010; Perry, Hockenberry, Lowdermilk, & Wilson, 2014; Ricci, 2009). Whereas the two phases classification has only: 1) latent phase (for primiparous women this lasts up to 6-8 hours, from cervical dilation 0 to 3 cm), and 2) active phase (from cervical dilation 3 cm to 10 cm, for primiparous women which may last from 4.4 until 4.9 hours). The upper "normal" limit is considered to be 11.7 hours (mean + 2 SD). The median time is usually 3. 7 hours with the mean of dilation averages at 1.2 cm/hour for primiparous women (King, Brucker, Kriebs, Fahey, Gegor, & Varney, 2015; Mc Kinney, James, Murray, Nelson, & Ashwill, 2018).

The mean length of the active phase of labor was 6 hours for primiparous women (Pilliteri, 2010, 2014; Pilliteri, 2014; Ricci & Kyle 2009), and the maximum was 18 hours (Murray & McKinney, 2014). The standard deviation of the

active phase of labor was 3.4 hours (Cunningham et al., 2010). However, the researcher only focus on the active phase of labor from cervical dilation 3 or 4 cm to 10 cm, because besides severe labor pain over time, the cervical dilation in the active phase serves as the basis to assess labor progress, to made admission decisions in spontaneous labor, and to determine the need of interventions.

Factors Relating to Duration of Labor

From literature review, there are many factors are related to duration of labor as present in the following:

Age of mother. Mother who has age more than 35 years old was associated with several cases, like endometrium problems that related to the progress of labor (Sumira, Nirwana, & Mato, 2013). Duration of active phase of labor faster at mother age 30-40 years old compared with mother age 20-30 years old in both nulliparous and multiparous women (Zaki, Hibbard, & Kominiarek, 2013).

Uterine contractions. The contraction will affect thinning and dilation of the cervix, if the effective contraction will accelerate delivery (Sumira, Nirwana, & Mato, 2013). The contraction effectively work can shorten the duration of labor (Cheng, 2010).

The size of the pelvis. Fetus will be long in the birth canal if the pelvic is small and relatively rigid (Sumira, Nirwana, & Mato, 2013). Small size of pelvic one of the factors causing prolonged labor (Saifudin, 2008).

The size and magnitude of the fetus in the uterus. The size of the largest baby born vaginally ensure the length time of birth process (Varney, 2008). Cephalic presentation (occiput posterior) can shorten in natural labor (Saifudin, 2008).

Twins gestation. Women with twins gestations more length of active

phase of labor about 2-3 hours (Leftwich, Zaki, Wilkin,, & Hibbard, 2013), and need long time in all of stage of labor (Saifudin, 2008).

Duration of sleep during pregnancy (trimester 3 of pregnancy). Women who slept less than 6 hours at night had longer labors and were 4.5 times more likely to have cesarean section. Higher levels of pro-inflammatory serum cytokines, make a higher of preterm delivery, fatigue, long duration and postpartum depression. Women with severely disrupted sleep had longer labors and were 5.2 times more likely to have cesarean deliveries (Davidson, London, Ladewig, 2008; Hall, Stoll, Hutton, & Brown, 2012).

Family support. Primiparous women who were accompanied by their husbands or family were in better condition (Keumalahayati, 2008; Hastuti, 2009), and positive effect to shorter delivery time (Gayeski, Bruggemann, Monticelli. & Santos, 2015).

Knowledge about birth process. Mothers who are not prepared with non-pharmacological methods like relaxation and breathing techniques to cope with the contractions will cry, lost control, long delivery time and increase cesarean rates (Afshar, Wang, Mei, Esakoff, Pisarska, Gregory, 2017). Childbirth preparation is benefit to reduce fear, anxiety, reduce pain and shortern the duration of labor (Toohill, Fenwick, Gamble, Creedy, Buist, & Ryding, 2014).

Immobilizations and positions. Immobilization and supine position will lower natural levels of oxytocin to circulate in blood, uterine contractions worse, more painful, inhibit gravity and extend the delivery time (Gupta, Hofmeyr & Shemar, 2012; Gupta, Sood, Hofmeyr, & Vogel, 2017). Upright positions make uterine contractions stronger and then results in a shortened duration of labor

(Lawrence. Lewis. Hofmeyr, & Styles, 2013; Vargens, Silva, & Progianti, 2013).

Gravity Force and Its Relationship to the Duration of Labor

Gravity is constant upward motion of earth's surface is constantly moving upward due to the gradual expansion of mass, space and time. A simple upward force and motion at the surface of every atom is what we feel as gravity (Capozziello, & De-Laurentis, 2011). Using gravity positioning (upright positions) and mobilization increased natural levels of oxytocin to circulate in blood, uterine contractions work effectively, less painful, and shorten the delivery time (Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014; Gupta, Hofmeyr & Shehmar, 2012). Because by force and gravity helps the uterus contract more strongly and efficiently and make the fetal get in a better position to pass through the pelvis and bringing the baby down and out and then shorten the duration of labor (Gizzo et al., 2014). Mechanically, walking, standing, squatting positions help expel the fetus, because the upright positions maximize weight downwards through gravity and minimize muscular effort and oxygen consumption, therefore facilitating relaxation of the perineum and shorten the duration of labor.

Relation of Labor Pain, Pain-coping behaviors and Duration of Labor.

When the women had severe labor pain, they tended to have uncontrolled or inappropriate behaviors, such as restlessness, crying out, sobbing, uncontrolled breathing, grimacing, wincing, showing desperation, and often asking for help (Hsieh, Tripp, & Ji, 2011). A severe or high level of pain and inappropriate pain-coping behaviors disturbs the maternal autonomic functions and causes the release of catecholamines that lead to inhibition of uterine activity. If uterine contraction does not work effectively, it can cause of prolonged labor or length of

duration of labor (Adams, Eberhard-Gran, & Eskild, 2012).

Selected Factors of Pain, Pain-Coping Behaviors, and Duration to Be Controlled

The factors which controlled in this study including 1) parity, just primiparous Muslim women participated in this study, 2) Mother's weight/height ratio, the women who with overweight and very thin were exclude in this study, 3) immobilization and position, all women in the experimental group received the upright positions, 4) information and knowledge about birth process, childbirth preparation reduce anxiety-fear, the women in the experimental group received the childbirth education that can reduce the fear and anxiety feeling in primiparous Muslim women, 5) family support, all women in the experimental group accompanied by family, 6) beliefs and faith, all participants in both group faith to 6 true of faith, 7) *Relying on their spiritual and cultural background.* All women in the experimental group were guided to surrendering on self to Allah, 8) Size of the pelvis, all women in both group had the normal of size of the pelvis, 9) Magnitude of the fetus in the uterus, all the fetal was cephalic presentation (occiput posterior), 10) twins gestation, just single pregnancy participated in this study, and 11) not complications both of mother and fetal.

Islamic Philosophy

This section presents about overview ontology, epistemology, and methodology of Islamic Philosophy, Islamic praying, and the use of the Islamic Philosophy in the study.

Ontology, Epistemology, and Methodology

Ontology.

Islam is a monotheistic religion. Islam involves the relationship with Allah (creator the heaven and earth and everything in between), and the relationship

with human beings and everything are created by Allah (QS Ali Imran: 190, 191; Al A'raaf: 54; Al An'am: 11, 73, 101; AL-Anbiyaa: 30; At Taubah: 36).

Epistemology.

There are two phenomena in nature, namely 1) the phenomenon of thought by human beings (by logic= philosophical way) and 2) could not be achieved by the human mind, only in a prophetic way (humans as created by Allah, are obliged to obey to the will of Allah). Linked to that, came Islamic *Sufism,* that teaches if someone had worked and prayed to the maximum but she/he was unsuccessful, hence surrender oneself to Allah (no strength, no power, but Allah) (QS AlKahfi: 39; QS Albaqarah: 255).

Methodology.

There are two methodology in Islam consists of five fundamental pillars and six of true faith. The purpose of humans in the world is to worship and follow the Qur'an (words of Allah). In the Qur'an the five fundamental pillars of Islam that include, (1) *Shahadah,* bearing witness that there is no one who deserves to be worshipped, save Allah and Muhammad (pbuh/peace be upon him=*s.a.w*) is the messenger of Allah (I bear witness, there is no God but Allah, and Muhammad, Allah's messenger), (2) *Sholat*, five daily prayers as obligated prayer. Still many prayers as recommended prayer, (3) Fasting, abstinence from food, drink, and sexual intercourse during daytime throughout the ninth month (*Ramadhan*), for one month, 4) Tithing (*zakat fitrah*) and almsgiving (*sadaqah- infak-zakat mal*). Tithe (*zakat fitrah)* is obligation for everyone to pay it (2.268 kg of rice) before Islamic day (Ied Fitr Mubarak). Almsgiving is Muslim are obligated to give at least 2.5% of their income to the Mosque which is used for the welfare of Muslims and outreach to the

poor. 5) *Hajj*, pilgrimage to Mecca once in lifetime by those who are financially and physically able (HR Muslim, Al-Iman, chap 1, no 1; HR Abu Hurairah by Al-Bukhari, Al-Iman, chap 37, no 1).

True faith in Islam means, 1) Faith to Allah. Do not think about Allah's substance or Allah's matter, but please think of Allah's creation (HR Ahmad & At-Thabrani). Just because you cannot see the air, does not mean you stop breathing. Just because you cannot see Allah, does not mean you stop believing, 2) Faith in Angels, 3) Faith in Prophets (Adam up to Muhammad [25 person]), 4) Faith in Scriptures (Qur'an, Ingil, Zabur, Torah); Qur'an for Muhammad, Ingil for Isa, Zabur for Daud, and Torah for Musa, 5) Faith in the day of judgment (here after, rise of humanity), and 6) Faith in the divine predestination, attribute the occurrence of pleasure and suffering to the will of Allah (HR Muslim, Al-Iman, chap 1, no 1; HR Abu Hurairah by Al-Bukhari, Al-Iman, chap 37, no 1).

This study underpinned by Islamic philosophy is faith in Scriptures (Qur'an) of six faith true and recommended prayer of five fundamental pillars. In Islam, human life on earth is based on the holy Qur'an and the Hadith (Prophet Muhammad life's way) which are used as guidance in daily life. Qur'an is not same with other books, because Qur'an is Allah words. The function of Qur'an is way of life for all mankind in the world, not only for Muslim, but for non-Muslim as well (QS Al-Qalam 68: 52; Asy-Syu'ara' 26: 192; Ali 'Imran 3: 138; Al-Jatsiyah 45: 20; Al-Baqorah 2: 185; Al-Anbiya' 21: 107; Saba' 34: 28; etc.). In the Qur'an, Islam set: 1) all activities of human life (*Sharia* = rules to act), 2) Beliefs (*Aqeedah*) & behavior (*Akhlak*), 3) all of worship (HR Muslim & Bukhari). The researchers selected it due to in all activities of Muslims there is prayer or supplication (*du'aa*) that come from the

Quran which is part of Islam practice (Henry, 2013; Peter, 2007).

In current study, researcher examined the Qur'an with regard to *Syifa* (healer of pain). In the holy Qur'an Allah (God) says: 1) "And Allah send down (stage by stage) of the Qur'an that which is a healing and a mercy to those who believes...". (QS.al Isra', 17: 82), 2) "O mankind, there hath come to you an admonition from your Lord and a healing for the diseases in your heart and for those who believe, a Guidance and a Mercy" (QS Yunus, 10: 57), 3) "Al Qur'an is a guide and a healing (*ruqyah*) to those who believe (QS Fusshilat, 41: 44), in the Quran there is a healing and a mercy for the believers (QS Al Isra': 82; Ahmad et al, 2014). In this study, Islamic praying by using verses of Qur'an relating pregnancy and childbirth are thought to work as healer (*syifa/ruqyah*) for women in labor.

Islamic Praying

Praying in Islam is divided into two categories: obligatory (*sholat* 5 times per 24 hours) and non-obligatory or recommended such as supplication *or du'aa ruqyah syariah* by listening or reciting Quran to ask Allah for forgiveness and strength, *tasbih-tahmid-tahlil* to extol and glorify Allah and *wirid* with the time and amount which determined, *dhikr* to remembrance of Allah by reciting Quran as well or chanting; *asma'ul husna* to remembrance name of Allah, and contemplating about Allah's creations, *sholawat* which is done to send greetings and salvation to the prophet Muhammad pbuh, *tafakur-tadabbur-tadzakur-tawakkal* which is done to surrender oneself to Allah, etc. (Henry, 2013; Yucel, 2010). In this study, researcher conducted *ruqyah* which is combined with think about Allah's greatness in creating human being and *tawakkal* as one of the recommended prayers. Two forms of *ruqyah*:

1. *Ruqyah Shirkiyah*: *Ruqyah* is commonly known in English as

“incantation” the same as magic/witchcraft is using by witches and shaman (Deuraseh, 2009).

2. *Ruqyah Syariah*: *Ruqyah* in Islam by using or recitation Qur’an verses. *Ruqyah Syariah* is important because it was taught by the prophet Muhammad to his followers, for seeking refuge, remembrance and supplications that are used as a means of treating sicknesses, pain and other problems. In *Ruqyah Syariah* there are three conditions: 1. It must be with the speech of Allah (Qur'an) or Allah or attributes of Allah, 2. It should be in the Arabic language or what it is known to mean in other languages, 3. To believe that *ruqyah* has no benefit by itself, but the benefits are from Allah (Mission Islam, 2015).

Ruqyah Syariah is the Arabic words which mean specific prayer that is interpreted by the energy and strength from Allah *Subhanallohu Wa Ta’ala* (*SWT)* (The Sacred and The Mighty). The energy of *Ruqyah Syariah* or a blessing and a miracle comes from reading verses of the Qur'an and praying as Prophet Muhammad taught in accordance with a particular disease. *Ruqyah Syariah* is the art of healing all kinds of diseases, disorders or physical and psychological discomfort which was passed down by the Prophet Muhammad. In addition, *Ruqyah Syariah* is also an art of resistance, self-protection and fortification from all kinds of physical distress and psychological for Muslims and non-Muslims (York, 2011).

According to the narrators of *hadith (*Al-Bukhari), *Ruqyah Syariah* is divided two kinds:

1. *Ruqyah* with the Qur’an.

This is a kind of *ruqyah* by listening the verses of the Qur'an (based on the standard). This *ruqyah* makes pregnant women passive because they only listen.

The systematic standard is based on the verses of Qur'an. There are 30 *Juz*, 114 *Surah*, and 6236 verses in the Qur'an. Example:

a. Treating snakebite and scorpion stings with *ruqyah* (*ruqyah al-hayyah wa al-uqrab)*

b. A woman is not allowed to treat a man with *ruqyah*, and otherwise, a man is not allowed to treat a woman, except *muhrim* (consanguinity/cognation) (*al-mar'ah tarqa al-rajl*)

c. Illness, pain (*Surah An-Nas* and *Surah Al-Falaq*) and then blow his breath over his body, make rub his body with his own hand, blow on his hands and then passed them over his face. Many verses of the Qur'an are known to be therapeutic (Deuraseh, 2004, 2009): *'ayat al-shifa*' (for recovery from diseases), etc.

2. *Ruqyah* with *do`a* (prayer).

The kind of *ruqyah* by reciting the verses of the Qur'an with *do`a* (prayer) is a concept which is purely spiritual because it makes pregnant women active, especially prayer words for sick people (in general) and related with every problem, for example: The Prophet Muhammad (*s.a.w*) recited *do`a* for a sick person, he was touching and putting his hands on the face, eyes, belly and other parts of sick body and recited: "*Allahumma rabb al-nas adhhab al-ba`s washfihi wa anta al-shafi la shifa`a illa shifa`ka shafi` la yughadiru saqama"* or "*a'uzubillahi waqudrotihi min syarrima ajidu wa uhaaziru*" (O Allah, the Lord of the people! Remove the trouble and heal the patient, for You/Allah are the Healer. No healing is of any avail but Yours; healing that will leave behind no ailment). This *ruqyah* can added with do'a (prayer) from Prophet Muhammad (*s.a.w*.) *Lahaula wala quwwata illah billahil a'liyul adziim* (no strength, no power, but Allah) (Deuraseh, 2009; Tohar, Deuraseh,

Rahman, & Muhammad, 2011).

The Use of Islamic Philosophy in the Study

Based on existing studies that have conducted was the listening 78 verses of QS Ar-Rahman (Bayrami & Ebrahimipour, 2014), just listening 98 verses of QS Maryam (Forouhari, Honaryaran, Maasoumi, Robati, Zadeh, & Setayesh, 2011), reciting Quran from third trimester of pregnancy at least 30 times until labor (Mohammaditabar, Rahnama, Kiani, & Heidari, 2012), thus in this study, the researcher conducted *ruqyah* with prayer (recite 14 verses of Quran about how the human being created by Allah). The researcher selected 14 verses of prayer (*do'a*) from Quran relating to pregnant women and childbirth which are spread in different *juz* and *surah* in the Qur'an. The concepts of 14 verses of prayer from Qur'an for pregnant women and childbirth based on the holy Qur'an Allah (God) says: "Human who remember Allah, standing, sitting, and lying down on their sides, and contemplate the (wonders of) creation in the heavens, the earth, and everything in between both of them (with the saying): ''Our Lord! Not for naught Hast Thou created (all) this! Glory to Thee! Give us salvations from the Chastisement of the Fire" (QS Al-Imran 3: 191; Ministry of Religion Republic Indonesia, 2010).

According to QS Al-Imran, 3: 191 above, human is one of everything in between the heavens and the earth. Allah creates every existence including the human (QS Al-Hajj 22:5; QS Abasa' 50:18-22; QS Al-Fathir 35:11; QS Al-Mukminun 23:12-17). Mankind is Islam's first priority (QS Al-Isra' 17:70; QS Al-Imran 3: 110). Allah creates human being body, mind, and soul (QS Al-Hijr 15: 28-30; QS As-Sajdah 32: 7-9).

Fourteenth of verses of *ruqyah* prayer from the Qur'an used in this

study tells about concept the grandeur/majesty of creation of man by Allah. For details as follow:

1. Allah created man from an extract of clay (because of the food comes from the ground) (QS Al-Mukminun 23: 12).

2. Allah placed him/fetus as a (drop of) sperm in a place of rest, firmly fixed (QS Al-Mukminun 23:13).

3. Allah made the sperm into a clot of congealed blood, then of that clot Allah made a fetus lump: then Allah made out of that lump bones and clothed the bones with flesh: then Allah developed out of it another creation. So blessed be Allah, the Best of creators (QS Al-Mukminun 23: 14).

4. When Allah have fashioned fetus (in due proportion) and breathed into him (fetus) of Allah spirit (QS Al-Hijr 15: 28-29; QS As-Sajdah 32: 7-9; QS Shad 38: 71-72).

5. It is He (Allah) who forms you in the wombs as He pleases. And Allah made two sexes, male and/or female (QS Al-Imran 3: 6; QS Qiyamah 75: 39).

6. And Allah created you from dust, then from a sperm-drop; then He (Allah) made you in pairs. And no female pregnant and childbirth, except with Allah's knowledge (QS Al-Fathir, 35: 11).

7. Allah doth knows what was conceived by every woman, what is less than perfect and what is growing in the womb (QS Ar-Ra'd 13; 8)

8. Then has Allah established relationships of lineage and marriage (QS Al-Furqan 25: 54).

9. He (Allah) creates you in the wombs of your mothers, creation after creation, within three darkness's/stages (three trimester) (QS Az-Zumar 39: 6).

10. And Allah was most knowing of what is in the uterine and what is born by pregnant women (QS Al-Luqman 31:34; QS Al-Imran 3: 36).

11. Our Lord Allah, grant us from among our wives and offspring comfort to our eyes and make us an example for the righteous (QS Al-Furqan 25: 74).

12. O Allah, make me an establisher of prayer, and (many) from my descendants. O Allah, and accept my supplication/prayer! (QS Ibrahim 14: 40).

13. Then He (Allah) eased the way for infant birth, (Then Allah make ease during childbirth) (QS ‘Abasa 80: 20).

14. And Allah has extracted you from the wombs of your mothers not knowing a thing, and He (Allah) made for you hearing and vision and intellect that perhaps you would be grateful (QS An-Nahl 16: 78).

Islam honors and cherishes the women who give birth. Islam believes that pregnancy and childbirth is a sign of the Lord's creation and majesty. Pregnancy is a natural condition ordained by Allah. The philosophy of the "natural pregnancy and childbirth" movement is that trusting your body's instincts and prayer will allow you to proceed with minimal fear and pain, and will create the best situation for you and your unborn child (TorkZahrani, 2008). By remembering how Allah created everything, including humans, in which the same thing cannot be done by humans, can make people surrendering oneself to Allah. In the current study, pregnant women were taught how to do *ruqyah* with prayer (14 verses of Quran) from 32 weeks of pregnancy, and applied it during the first three hours of the active phase of labor. *Ruqyah* with prayer in this study is integrated with breathing, stroking, positioning and with involvement of the family (the CPNsIIIP program).

Holistic Nursing Theory (HNT)

This section presents regarding horizon of HNT, contents of HNT, and why using HNT in this study.

Horizon of the Holistic Nursing Theory

As a pioneer of HNT, Barbara Dossey, PhD. RN in year 1975 and a founding member of American Holistic Nurses Association (AHNA) in 1981, mentioned that Holistic Nursing in nursing is planned to meet the needs of the whole person to improve health and increase the healing of the whole person; physical, psychological, socio-cultural, and spiritual. The details are as below:

Physical dimension.

The physical dimension relates to the anatomical and physiological changes (Dossey, 2013).

Psychological dimension.

The psychological dimension relates with the mind. The mind (psyche) refers to the intellect (how to understand a condition) and emotions (feelings and affection). Psychological dimension refers to intellectual and emotional, anxiety, pain, fear, and comfort (Dossey, 2013).

Socio-cultural dimension.

The socio-cultural component refers to both social and cultural issues and comprises: 1) family support, 2) financial or economic, 3) social tradition backgrounds, 4) cultural beliefs, 5) values, enriched understanding with support from their environment (Dossey, 2013).

Spiritual dimension.

The spiritual dimension connects with the existence of conscience.

Spiritual dimension refers to faith, moral, hope, religious, and belief system (Dossey, 2013).

The Use of Holistic Nursing in the Study

The HNT is composed of two assumptions, namely: 1) HN care as the central of whole person health care, 2) the whole person being unitary due to the interconnectedness of the body, mind, socio-cultural, and spiritual aspect (Dossey, 2013).

Physical care of pregnant women refers to the nursing interventions to meet the needs of body of the pregnant women and during childbirth, and involves: 1) physical condition of the whole pregnant women which involves the implementation of nursing knowledge, 2) psychomotor skills based on the assessment by nurse, and 3) connection of the affective (attitudes nurse during the assessment and implementation nursing knowledge) (Potter & Perry, 2011). The nursing interventions in this study are breathing, stroking, positioning.

There are two assessments of psychological which involve: 1) cognitive function, 2) emotional status of pregnant women (Neke, 2008). Childbirth education in this study can develop knowledge and cognitive of women about labor pain, thus reduce fear, anxiety, tension, pain.

Related to the socio-cultural dimension, the woman is viewed as part of the family who should get support from her family (Drick, 2014; Neke, 2008). From a physiological perspective, human presence can decrease anxiety, pain, and fear and can contribute to a shorter labor (Safarzadeh et al., 2012). Family involvement in this study can make women confidence, reduce fear and anxiety, feeling calm, thus relieve pain, increase pain-coping behaviors, and shorten duration of labor.

Spirituality is rarely explained in antenatal education, whereas it is part of childbirth, because the moment of birth is unique, full with spiritually meaningful and cultural art. Necessarily, the obstetrician or midwife's instructions are followed with an understanding of and relationship with God. It includes: 1) faith, 2) hope, 3) moral and values, 4) religion, 5) the belief system (Neke, 2008). The use Holistic nursing perspective in this study places emphasis on the importance of the spiritual dimension during pregnancy. If the spiritual element is explored, it can help reduce fear, anxiety, pain, safety, and protection from intervention (Crowther, 2014).

There is few existing study that used Holistic Nursing Theory to reduce labor pain in the antenatal care and labor room. It just used interventions such as walking, massage, relaxation, comforting, encouraging, reassuring, without praying and accompanied by their families (Firouzbakht, Nikpour, Salmalian, Ledari, & Khafri, 2014). Beside, just massage and position were used to decrease labor pain and shorten duration of active phase of labor (Gallo et al., 2013). These study not holistic care yet. However, the labor pain is holistic, nursing is holistic, and therefore nurses should to provide holistic nursing care based on Holistic Nursing Theory, because the pregnancy and childbirth involves the body, the mind, emotions, and the deep connection between pregnant women and others. These physical, emotional, psychological, and spiritual transitions cannot be ignored (Hodnett, Gates, Hofmeyr, & Sakala, 2007, 2013; Roman, 2014; Schlitz & Valentina, 2013).

Relation of Holistic Nursing Theory with Islamic Philosophy.

Globally, the Holistic Nursing Theory is in line with the Islamic Philosophy. Islamic teachings as contained in Quran and Hadith involves: 1) all activities of human life (*Sharia* = rules to act), 2) beliefs or faith (*Aqidah*) and

behaviors or moral conduct (*Akhlaq*), 3) all of worship/ultimate devotion and love for Allah (*ibadah*); obligatory and recommended prayer. The recommended prayer such as listening or reciting Quran, supplications or *du'aa, dhikr*, *sholawat*, etc. which is part of Islamic praying/practice (Hamjah & Akhir, 2014; Henry, 2013; Peter, 2007). Islam regulates human life in all aspects (holistic) based on the interrelationships of the body (*qalb*) is the King of the human self that plays a leading role, the mind *(akal*) as a minister which always deliberate with *qalb*, the spirit *(ruh*) as advisor, and *nafsu* as a people (Al-Ghazali, 1059-1111 M). The Holistic Nursing Theory provides the frame work for holistic nursing practice. This theory focuses on caring for people as holistic persons who influence the environment in social, cultural, and spiritual domains (Dossey, 2013). IP and HN show that HN also insists on the participation of the spirit in the human whole include pregnant women and childbirth. HN is not located only in the head (brain=mind), but also it is distributed throughout the body. They underpin the holistic paradigm and its insistence on the interconnectedness of body, mind, and spirit (Saniotis, 2015). Relation between Holistic Nursing Theory with Islamic philosophy in this study was shown in figure 2 as follows:

Need	Islamic Philosophy	Holistic Nursing Theory
	Human being as holistic creature from *materi* and *ruh* (QS Shad: 71-72) in details below:	Holistic Nursing Theory by Dossey (2013) always seeing human being from:
Physical	Physical is all cells in the body of human being and physiologic functions include hearth and blood vessel, example; eat, drink, oxygenation, body protection such as clothing, home, sleep, sexual , and generation need.	Anatomical all of body system and physiological changes. Example; respiration system, cardiovascular system, musculoskeletal system, etc.
Psychological	Emotion, curiosity and understanding a condition (intellectual), norm, ideals and conscience (personality) ; for example human being need recreation , relaxation, learn, etc.	Psychological dimension refers to intellectual and emotional, anxiety, pain, fear, and comfort
Socio-cultural	Humane, social life, tradition culture, communication each other, support from other	Family support, financial or economic, social tradition backgrounds, cultural beliefs, values, enriched understanding with support from their environment
Spiritual	Religious needs: faith, worships, hope, acculturation (realizing the sublime potential of human being), instinct of affection and love for all beings.	Spiritual dimension refers to faith, moral, hope, religious, and belief system

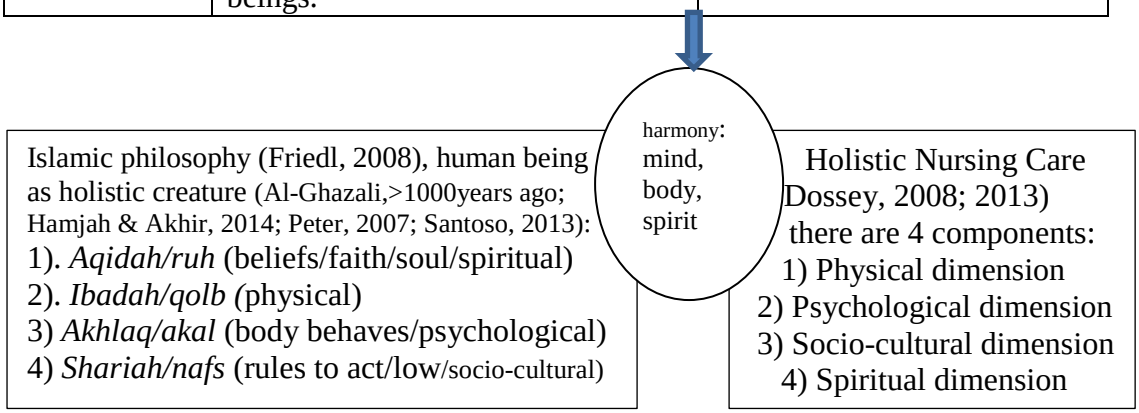


Figure 2. *Holistic Nursing Theory fit with IslamicPhilosophy).*

Even though Holistic Nursing Theory is congruent with almost all of the tenets of Islam, however, nursing education and practice that is derived from the Western nursing perspective, is not always congruent with the cultural and religious

beliefs of Muslim nurses or their patients. There are some similarities between Western holism and holism in Islam. For instance, based on holism in Islam, the Qur'an and *hadith* (way of life of the Prophet Mohammad *pbuh*) give direction for maintaining balance, spiritual, physical and psychological aspects and living life in preparation for the Day of Judgment. Spiritual wellness is a pre-requisite for balancing of health, body and mind (Peter, 2007; Sadat Hoseini et al., 2013; Santoso, 2013). Likewise, the American Holistic Nurses' Association defines holism as the harmonious balance of body, mind and spirit in an ever changing environment. However, spirituality is not the central aspect of balance, spiritual well-being does not have priority over well-being of the body and mind (all components have the same level, and do not dominate each other) (AHNA, 2009; Dossey, 2013).

The Islamic philosophy and Holistic Nursing by Dossey hold the similar concept, the same belief that the spiritual dimension includes Holistic Nursing, that health in terms of harmony and balance in life, has a relationship with God (although a different God), however there are theological differences in the concepts and practices of health *(shariah* and *akhlaq*) (Lovering, 2008, 2012). Although nursing theory (Holistic Nursing) has universal aspects, the differences in philosophy and culture that are unique to each country need to be considered, namely *hikmah* (shared wisdom) which is the ability of a holistic nurse to understand the secrets of religious laws of their patients. Thus, a need to create something new in nursing which is congruent to the culture of the patient exists.

Labor Support

Concept of Labor Support

Labor support is derived from Kahn's Theory and first introduced by

Bryanton in 1994 which divided the concept into affirmation (respecting the rights of the mother), aid (provision of technical assistance, such as relaxation techniques, breathing), and as expressions of admiration, respect, and love.

Labor support is a social support that is provided to women during labor and birth (Payant, Davies, Graham, Peterson, & Clinch, 2008) to meet the needs during labor such as physical, psychological, informational, socio-cultural, spiritual, and emotional needs (Najafi, Roudsari & Ebrahimipour, 2017; Sosa, Crozier, & Robinson, 2012). Therefore, labor support can help nurses and midwives in providing holistic care for women in labor (Baier, 2012).

Labor support can be from a nurse, midwife, labor nurse, family members, friends, and doula with the guidance of the previous nurse or midwife. Indeed labor support was better when provided by a nurse (Hoddnet, 2007). However, many factors are related to providing labor support from a labor nurse such as 1) Intentions, attitudes and beliefs. The attitudes and beliefs of the nurses were significantly and independently correlated with their intentions to provide labor support (Payant, Davies, Graham, Peterson, & Clinch, 2008), 2) Age and experience. Older and more experienced nurses provided more labor support (Barret & Stark, 2010), 3) Institutional policy of place of birth. The labor room that does not support natural birth is likely to have higher rates of epidural analgesia use and cesarean surgery and tends not to use labor support. Therefore, the birth environment may influence the care that nurses give during labor ((Barret & Stark, 2010).

Therefore, labor support appeared to be more affective when it was provided by women who were not part of the hospital staff since the mother can converse more freely with the family than with the hospital staff (Ricci, 2009).

Hodnett et al. (2011) described labor support as an important role during labor as: 1) emotional support (continuous presence, giving encouragement, motivation and praise), 2) information about labor progress and suggestions on coping techniques to relieve pain or increase appropriate behaviors, 3) comforting methods (touch, stroking, massage, warm baths/showers, adequate fluid intake and not holding urine or output), 4) advocacy (helping the woman articulate her wishes to others or facilitate her wishes to other people or her God). Labor support can anticipate the unexpected behaviors of a woman in labor, such as tiredness, anxiety, crying, and screaming (inappropriate behaviors) and the woman's feelings of not being able to overcome (Bruggemann, Parpinelli, Osis, Cecatti, Carvalhinho-Neto, 2007). Labor support from the family during labor and birth involves emotional support, physical care, and comfort measures, and provision of advice and information (Hodnett, Gates, Hofmeyr, & Sakala, 2013). Presence of family members (e.g., husband and mother) helps the mother be more comfortable (Lowdermilk, Perry, & Cashion, 2010).

The priority support from the family in the delivery room should focus on decreasing the fear in primiparous women, increasing their confidence to give birth, listening their wishes, respecting and facilitating their spiritual needs, emotional and physical care, and providing clear information as the basis for decision making (Sosa, Crozier, & Robinson, 2012). The role of the family members is to provide physical and emotional support by using soft, reassuring words, touching, stroking, hugging, and providing relaxation in order to reduce labor pain. Walking with the mother helps her to change positions to shorten the duration of labor (Lowdermilk, Perry, & Cashion, 2010), Also hand-holding and helping the mother communicate her wishes to the staff can provide a continuous presence with hands-on comfort and

encouragement (Ricci & Kyle, 2009). Labor support from grandparents may also help the mother with pain relief based on their previous experience (Lowdermilk, Perry, & Cashion, 2010).

The use of Labor Support in the research study

Nowadays, family-centered birthing is more appropriate to promote the high-touch approach requested by many women who want to have a normal labor (Ricci & Kyle, 2009). This is similar with the Baier study (2012) that reported that patient-family centered nursing care was appropriate for giving holistic care.

Another study reported that the women who have labor support from the family early in labor (latent and active phase of labor) were more likely to have a natural labor without pain medication and had slightly shorter labors and satisfaction with their birth experience (Bhargella et al., 2008; Hodnett, Gates, Hofmeyr, & Sakala, 2007., Ricci, 2009). Even nurses and midwives have educated pregnant women and their husbands or family on the value of labor support from pregnancy and how to attain it during labor (Barret & Stark, 2010). Jordanian women who had been afforded labor support from the family had positive experiences such as increased sense of security, provision of physical help, communicating the woman's needs/wishes, and emotional support (encouragement) (Kresheh & Barclay, 2010). Labor support from the family in this study started from pregnancy by involving the family in the childbirth education at 32 weeks of pregnancy. The role of family support in the labor room included help in sitting positions (physical), stroking (psychological-physical), motivating women to breathe (physical), and praying together (spiritual). Therefore, family support is needed from the nurses to provide holistic care for women in labor (detail in chapter 3 at data collection).

Non-Pharmacological Labor Pain Management

In managing pain, non-pharmacological pain management is significant as a Holistic Nursing to deal and ease the pain. This section focuses on existing of general non-pharmacological techniques of pain management.

General Non-pharmacological Techniques of Pain Management

From the literature review, there are several non-pharmacological techniques of pain management that commonly used in maternity area. The techniques are stroking-massage, music, acupuncture, acupressure, breathing, meditation, prayer, and position as described in the following:

Stroking-Massage.

Stroking and massage therapy provides physical contact with the laboring women promote physical comfort, potentially reducing cortisol and norepinephrine levels, increases serotonin and stimulation of endorphin release, then pain relief (Adams, 2012; Field, 2008; Klaikham, Yusamran, Thananowan, & Phahuwatanakorn, 2013). The stroking of the abdomen in rhythm with breathing during contractions can make the belly relax and decrease labor pain, because the nerve impulses generated by massage compete for the same cerebral receptors as pain impulses (Klaikham, Yusamran, Thananowan, & Phahuwatanakorn, 2013). If done by a family member, it can increase Pain-coping behaviors, also showering or swiping on the belly using warm water can reduce labor pain (Gallo et al., 2013; Perry, Hockenberry, Lowdermilk, & Wilson, 2010).

Music.

The mechanism of music in relation to the Gate Control theory is that music can inhibit stimulus from pain or reduce pain by decreasing the signal transfer

(T-cell) to the thalamus (the central control system) and reticular activating system (autonomic and motor response to pain) (Melzack & Wall, 1996). Music can promote relaxation, distract the patient from pain and decrease muscle tension, by decreasing sympathetic stimulation of the hypothalamus, increasing the release of endogenous opiates (endorphins, etc.), increasing peripheral blood flow, which elevates finger temperature/FT (as significant indicator of physical relaxation through sympathetic response) (Good, Albert, Anderson, Wotman, Lane, & Ahn, 2010; Liu, Chang, and Chen, 2010).

Listening to the music for 30 minutes will enter the ear in the form of sound (audio), vibrate the ear drum (tympanic membrane), shake and vibrate the fluid in the ear hair cells in the cochlea through the cochlear nerve to the brain and the imagination creates beauty in the right brain and the left brain (mood change) (Faradisi, 2012). From the limbic cortex, the auditory pathway will continue toward the hippocampus, and forward the signals to the amygdala which is the area of consciousness behavior that works on a subconscious level. This signal is then forwarded to the hypothalamus (Faradisi, 2012). Auditory pathways are forwarded to the formation reticularis as channeling impulses towards autonomic fibers. The nerve fibers (sympathetic and parasympathetic) can affect the contraction and relaxation of the organs (Faradisi, 2012). Relaxation can stimulate an increased release of endogenous opiates, and therefore cause tranquility (Sharifi, Alipour, Baharloei, 2013).

Acupuncture.

Acupuncture is an ancient treatment for pain management by insertion of very fine needles (C-type needles) in the body surface at sites called acupuncture

points as a way of accelerating body functions by stimulating energy channels (meridians) beneath the skin's surface and rebalancing the body's energy (Qi) (Behmanesh, Pasha, & Zeinalzadeh, 2009; Molter, 2010). Needles are manually inserted at point LI 4 (45 degree or perpendicularly) with a depth that depends on the thickness of the subcutaneous fat until the de chi sensation (sensation of warmth, numbness, tingling, heaviness) occurs (Hantoushzadeh, Alhusseini, & Lebaschi, 2007). Acupuncture not only stimulates the release of neurochemicals (beta-endorphin, encephalin, and serotonin), but also stimulates myelin (A nerve large fibers) in muscle, which send impulses to the spinal cord to activate the spinal cord, brain, and hypothalamus–pituitary and close the gate to the pain message, therefore, the women had less pain and a shortened duration of active phase of labor (Hantoushzadeh, Alhusseini, & Lebaschi, 2007; Tournaire & Theau-Yonneau, 2007).

Acupressure.

Acupressure is a non-invasive technique by stimulating acupoints by means of pressure, usually using the hands, fingers or thumbs (Hjelmstedt, Shenoy, Victorin, Lekander, Bhat, Balakumaran, & Waldenstrom, 2010; Mafetoni, & Shimo, 2016). Several acupoints frequently used in induction of labor are BL67, SP6, LV3, LI4, BL31, BL32, GB21, and SP9. These acupoints (especially L14 same with SP6) can stimulate the release of oxytocin from the pituitary gland, which stimulate uterine contractions to make the duration of the labor shorter and might have stimulated a release of endogenous opioids to reduce labor pain (Hamidzadeh, Shahpourian, Jamshidi, Montazeri, & Khosravi, 2012)

Breathing.

Breathing technique begins with inhaling and ends with a deep breath

exhaled to "blow the contraction away" (Lothian, 2011). The inhaling-exhaling slowly through pursed lips and grunting with exhalation is encouraged because it keeps the glottis open, and also can improve the oxygenation of tissue, and thus can reduce labor pain and make the body relax (Lothian, 2011). In the first stage of labor, breathing is used to increase abdominal pressure and thereby assist in expelling the fetus, and to relax the pudendal muscles to prevent precipitate expulsion of the fetal head, therefore resulting in shorter labor (Vargens, Silva, & Progianti, 2013)..

Meditation.

Meditation techniques focusing on the moment, helps relaxation, produce changes in neural regulation in pituitary hormone secretion by enhancing endorphins hypothalamic and inhibit glutamat-aminobutyric acid (GABA) which can increase serotonin to increase production of the neuro hormone melatonin. Melatonin has been shown to depress the central nervous system, modulate autonomic, metabolic, endocrine, and immune functions and thus mediate global regulatory changes in various behavioral states including reduce pain sensitivity. Blood plasma melatonin has been found to increase sharply during meditation, which may contribute to the feelings of calmness and decreased awareness of pain (Demir, 2012; Liou, Hsieh, Hsieh, Chen, Wang, Chen, & Lee, 2010; Nagendra, Maruthai, & Kutty, 2012; Newberg, 2014). Meditation is included into mind-body therapies (Lindquist, Snyder, & Tracy, 2013; Nagendra, Maruthai, & Kutty, 2012). Meditation by focusing on one point can release endorphins and melatonin (Field, 2008; Mander, 2011).

Prayer.

Prayer is high communication to God (Naghi, Philip, Phan, Cleenewerck, & Schwarz, 2012). Islamic prayer can distract one from pain and focus

on God can make the A-neurons (myelin) reach the brain more rapidly than pain messages, and close the gate to the pain message, whereas the pain signal is carried more slowly by neuron C fiber (unmyelin) (Jones et al., 2012; Mander, 2011; Newberg, 2014). On the other hand, concentration by focusing on Allah by reciting Quran at least 30 times during pregnancy until labor, can release endogenous opioids (endorphin, encephalin, etc.) and inhibit GABA in CNS which can increase serotonin to increase production of the neuro hormone melatonin. Melatonin has been shown to depress the central nervous system, modulate autonomic, metabolic, endocrine, and immune functions and thus mediate global regulatory changes in various behavioral states including produce a state of calm in order to reduce labor pain and increase pain-coping behaviors (Bayrami & Ebrahimipour, 2014; Field, 2008; Mohammaditabar, Rahnama, Kiani, & Heidari, 2012).

Position.

Position and movement during the first stage of labor related to force/gravity can shorten the progress of labor (Vargen, Silva, & Progianti, 2013). In upright positions, uterine contractions are then generally stronger and more efficient in effacing and dilating the cervix, therefore resulting in shorter labor in the first stage of labor (Perry, Hockenberry, Lowdermilk, & Wilson, 2010). Lying on the side remains the most widely requested position by labor women than upright position (Lawrence, Lewis, Hofmeyr, & Styles, 2013). In addition, non-invasive care technologies, like using massage with essential oils, controlled breathing and position or movement, benefit pain relief and reduce the duration of labor during the active phase of labor (Vargens, Silva, & Progianti, 2013).

In conclusion, the non-pharmacological pain management is to assist

the nurse to fulfill holistic need of patient. Thus, the use nonpharmacological technique to reduce labor pain (as a physiological pain) can assist a woman to survive with pain in labor.

Existing Programs about Non-pharmacological Methods for Lowering Labor Pain, Increasing Pain-coping behaviors and Shortening Duration of Labor.

Currently, based on the literature review, antenatal classes focus on teaching four main behavioral strategies such as: 1) controlled breathing (e.g., sighing out slowly), 2) relaxation (for example, progressive muscular relaxation), 3) employing upright and forward postures/positions, and 4) massage and tactile stimuli. Massage, breathing, relaxation and position were used in their research as nursing intervention (Chailet et al., 2014; Kizilirmark & Baser, 2015; Vargens, Alexandra, & Progianti, 2012). There were adding with spiritual methods and family participation during labor (Bonapace, Chaillet, Gaumond, Paul-Savoie, & Marchand, 2013; Firouzbakht, Nikpour, Salmalian, Ledari, & Khafri, 2014). However this is limited, because many women, employ a range of self-initiated strategies during childbirth (which are cognitive in nature and based on cultural-spiritual beliefs) (Escott, Slade, & Spiby, 2009). In addition to the four strategies above, many kinds of distractions based on cultural, social, and spiritual needs are worth considering (Sharareh, 2013; Vargens, Silva, & Progianti, 2013), like spiritual understandings are needed during childbirth gives a sense of purpose and meaning of life (Crowther, 2014; Farry & Crowther, 2014). The spiritual understandings can be in the form of prayer and guide patient to pray in order to stay full of God's love and to get God's help (Friedl, 2008).

Based on the existing program, for the most part the researcher had to

conduct the listening to the Qur'an (passive prayer) based on standard like *Surah Ar-Rahman* (78 verses/words) (Bayrami & Ebrahimipour, 2014), *Surah Al-Maryam* (98 verses/words) (Forouhari, Honarvaran, Masoomi, Robati, Zadeh, & Setayesh, 2011) during the active phase of labor only (not from the start from pregnancy). Other research covers reciting the Qu'ran (all *of surah* in the Qur'an) during pregnancy only (not in labor) (Mohammaditabar, Rahnama, Kiani, & Heidari, 2012), and in Indonesia, just listening to the Qur'an for women after a caesarean section (Hasto, 2014). The objectives of their program (passive prayer/listening Qur'an) were to measure labor pain, shorten the duration of the first stage delivery, and help mothers actively control childbirth (increase positive coping) during childbirth (Mirbagher & Ranjbar, 2010; Bayrami & Ebrahimipour, 2014; Forouhari, Honarvaran, Masoomi, Robati, Zadeh, & Setayesh, 2011; Hasto, 2014; Mohammaditabar, Rahnama, Kiani, & Heidari, 2012). Prayer/hope is most frequently used coping in labor pain during labor stages I and II (Kulesza-Brończyk, Dobrzycka, Glinska & Terlikowski, 2013). At this time there is no research on active prayer (*ruqyah* with prayer) on women in labor.

CPNsIIIP Program

This section presents about the horizon of childbirth preparation and use CPNsIIIP program in this study.

Childbirth Preparation

Antenatal education consists of several activities and intervention procedures, needs to be adapted to the needs primer care of women aimed at improving pregnant women's well-being (Artieta-Pinedo, Paz-Pascual, Grandes, Espinosa, 2017). The World Health Organization (WHO) recommends four goals, one of them is childbirth education (birth preparedness and complications readiness)

(Nyamtema, Jong, Urassa, Hagen, & Roosmalen, 2012). Holistic nursing to meet the physical, psychological, socio-cultural, and spiritual needs of pregnant women and family, nurses-midwifery should be provided childbirth education. Every pregnant woman should be treated with dignity and respect, and honesty (Neke, 2008).

Based on Dick-Read (1984), the natural birth approach makes use of non-pharmacological techniques and continuous family support. During pregnancy, a nurse must build trust with the mother to prepare her for normal labor, support and encourage her without using pharmacological pain relief (Leap, Sandall, Buckland, & Huber, 2010). Childbirth education classes are very important in order to provide information to pregnant women and their families as part of preparation for birth (Hardie, Horsburgh, & Key, 2014), because the pregnant women that prepared by giving childbirth education will have feelings of preparedness to childbirth (Holloway & Kurniawan, 2010), and by informing about things that would be done during pregnancy and childbirth, make mother self-confidence and self-belief. Childbirth education will develop mother knowledge during pregnancy and childbirth, decrease fear and anxiety, created positive expectations of giving birth, eliminate medication during labor, improve coping strategy and maternal comfort during childbirth, and providing skills to cope labor pain that aims at facilitating the process of natural childbirth (Firouzbakht, Nikpour, Salmalian, Ledari, & Khafri, 2013; Handorf, 2017).

For preparation of the management of acute pain during labor, antenatal classes focus on teaching behavioral strategies, such as, controlled breathing, relaxation, positions, stroking/massage, and distraction in which women are helped to develop their own personal repertoire of coping strategies (Escott, Slade, & Spiby, 2009; Vargens, Silva, & Progianti, 2013). Childbirth preparation (CP)

allows the woman and her family to identify techniques of coping resources in decreasing pain, stress, fear, anxiety, and shorten the duration of labor. Therefore, fuller understanding Holistic Nursing (physical, psychological, spiritual, and socio-cultural needs) during childbirth and how to implement it should occur in the prenatal period namely as CP (Crowther, 2014), because, if women receive formal training in coping strategies for labor, for example pain management in the antenatal class, they make use of those coping strategies in labor. However, when women do not receive formal training in coping strategies for labor, they nevertheless use a wide range of coping strategies during labor (Escott, Slade, & Spiby, 2009; Malkawi, 2016).

Nurse should explore and design the childbirth preparation that relevant with is needed by women and benefit them. Example, expanding educational scope about labor based on cultural and beliefs system to get optimal pregnancy outcomes (Martin & Robb, 2013). Thus, pregnant women can make choice that is filtered through belief systems. Therefore, pregnant women who seek out information about childbirth preparation are often more confident, have good coping strategies and ready to cope problems during intra-natal (Martin, 2012). Coping strategies can assist in the pain management process during labor and confidence in one's ability to cope problems during labor accounted for approximately one-third of labor pain levels and duration of labor (Gau, Chang, Tian & Lin, 2011).

Based on cultural, it appears that male participation is satisfactory in psychological, physical, cultural and spiritual aspects (Olayemi, Bello, Aimakhu, Obajimi, & Adekunle, 2009), as social support to enhance self-support of women in labor (Bruggemann et al., 2007), increasing confidence, decrease fear, and anxiety, which results in a sedative effect that decreases pain, and increases Pain-coping

behaviors if stroking on the pregnant women's belly is done by her family (Perry et al, 2010; Sarfarzadeh et al, 2012) also, it reduces the time of labor (Safarzadeh et al., 2012), which is congruent with Holistic Nursing when one feels a bond with another (Favero, 2013). In this study, researcher used nursing interventions (breathing, stroking, positioning) that integrate with Islamic praying and the family participated in the program from pregnancy until delivery. It called by CPNsIIIP program.

Definition, Components and Process of CPNsIIIP program

The CPNsIIIP program is one of program that used non-pharmacological pain managements (breathing, stroking, positions method and Islamic praying), and each component or method was guided by the Gate Control Theory, involving endorphin releasing, and the force and gravity to increase uterine contractions. Stronger gravity shortens the duration of labor. There were four phases in the CPNsIIIP: 1). Preparation phase, giving education in the first 32 weeks of pregnancy, 2).Refresher/remind phase, this phase commenced when the mother have got childbirth education, practice it at home every day that controlled by researcher via phone until entered hospital to give birth, 3). Working phase, consisting of set positions, took-breathing during uterine contractions, *ruqyah* with active prayer by herself during uterine relaxation, stroking, and surrendering oneself to Allah, 3 times in the first 3 hours of the active phase of labor, 4) Termination or closing phase, involving expressed of positive feelings.

Mechanism of CPNsIIIP program

Islamic prayer (*ruqyah* by active prayer).

A theory of pain, according to Wall and Melzack is that the transmission of pain from the peripheral nerve through the spinal cord was subject to

modulation by both intrinsic neurons and controls emanating from the brain. The perception of pain intensity and physiological responses take place when pain impulses ascend from the spinal cord towards the brain stem and the hypothalamus. The autonomic nervous system inflames, and the stimulation of the sympathetic branch of the autonomic system results in increased respiratory rates, and heart rates (Mander, 2011). When laboring women practice Islamic praying (*ruqyah* with prayer and surrendering oneself to Allah *SWT*), distract from pain with focus on Allah, which acts on the brain to project directly to close the gate, the autonomic nervous system is less stimulated, and this in turn decreases pain and physiological responses (Faradisi, 2012; Mander, 2011). The more biological explanation is that cells in the dorsal horn of the spinal cord act like a switch between the nerve impulses from the different fibers. Pain signals are carried more slowly by neuron C fibers (unmyelinated) (Field, 2008; Jones et al., 2012). Islamic praying also inhibited the ascending of nociceptor to the spinal cord and brain (Faradisi, 2012; Jones et al., 2012; Mander 2011).

On the other hand, concentration by focusing on God (Allah), triggers the brain to produce large quantities of the pleasure-causing neuro-chemicals, like endorphins (as measured by EEG brainwave biofeedback machines) which relieve pain, reduce stress, and give pleasure and a feeling of well-being and calm (Newberg, 2014). Endorphins released in the hypothalamus can increase serotonin and production of the neuro-hormone melatonin which may contribute to reduce pain (Field, 2008; Jones et al., 2012). Thus, the *ruqyah* with prayer, surrendering oneself to Allah *SWT,* and focus on Allah distracted one from pain by making the large fibers reach the brain and directly close the gate, and also inhibited the ascending of the nociceptor to the spinal cord and brain. While endorphin release, caused by

concentrating on Allah, and released endogenous opioids which can relieve pain.

Breathing.

Mechanism of breathing based on the Gate Control theory: Breathing can reduce pain for women by activating descending inhibitory neurons that block afferent nociceptive nerves that originate in the substantia gelatinosa. This activity of closing the gate of spinal level then the brain will not interpret the impulse as painful (Lothian, 2011; Melzack & Wall, 1996). Besides, breathing also relieves pain by improving blood flow and oxygenation of tissue (Jones et al., 2012). The breathing decreased pain by assisting not only relaxation, inhibiting sensory transmission in the pain pathways, but also by improving blood flow and oxygenation of tissue.

Stroking.

Stroking can release oxytocin into the circulation and brain that influences the vagal nerve, and then releases several hormones that have beneficial clinical effects for the body (Gallo et al., 2013; Perry, Hockenberry, Lowdermilk, & Wilson, 2010). The substances evoked by stimuli of massage, stroking, rubbing or touching are regulated in the spinal cord by nerve cells inhibiting the further incoming pain signals to the brain (Gallo et al., 2013; Hajiamini, Masoud, Ebadi, Mahboubh, & Matin, 2012; Melzack, 1999). Stroking potentially increase serotonin levels, the stimulation of endorphin release and the circulation with a consequent increased oxygen supply for the tissues. Stroking stimulated the central nervous system pathway that block pain signals by increasing the input of large fibers.

Positioning.

The positions that can shorten the duration of labor are the upright positions (walking, sitting, kneeling, and squatting) and these offer a number of

advantages, because gravity can promote the descent of the fetus. In the upright positions, uterine contractions are then generally stronger and more efficient in effacing and dilating the cervix, therefore resulting in shorter labor in first stage of labor (Perry, Hockenberry, Lowdermilk, & Wilson, 2010; Vargen, Alexandra, & Progianti, 2013). Sitting or walking during early labor but later semi recumbent or side-lying positions with pillow support as labor progresses can shorten the duration of labor (Gupta, Hofmeyr, & Shehmar; 2012).

However lying on the side remains the most widely requested position by laboring women because that position reduces labor pain more than the upright position (Fridh, Kopare, Gaston-Johansson, & Norvell, 2007; Melzack, 1993). Upright positions during early labor (the first three hours at active phase of labor) but later semi recumbent or side-lying positions with pillow support decreased labor pain and shorten the duration of labor in this study.

Labor support from family.

The relation between a pregnant woman and her family (the presence of a companion) can make the woman feel more confident, and decrease anxiety and fear (Safarzadeh et al., 2012). Stroking or touching a pregnant woman's belly can increase Pain-coping behaviors when done by family (Gatewood, 2009; Perry, Hockenberry, Lowdermilk, & Wilson, 2010). Health education involving all interventions, given to pregnant women from the third trimester of pregnancy with simple, interesting explanations, relevant to the needs of pregnant women, and using the right media, can improve cognitive change through the learning process (Crowther, 2014). In this research, there were two periods namely: 1) antenatal period (especially at 32 weeks of pregnancy), and 2) during the active phase of labor. The

program was explained to expecting mothers during ante-natal care about stroking, breathing, positioning, and Islamic praying (*ruqyah* and surrendering oneself to Allah), and then implemented during childbirth with the involvement of her family.

Ideally, labor preparation for all pregnant women should occur in the prenatal/antenatal period, allowing the woman to identify coping resources for decreasing stress, anxiety, fear and pain, such as, praying-meditation, exercises or therapy and essentially allowing her the opportunity to repeat positive inputs (Kizilirmark & Baser, 2015), As in this research, the nurse explained the CPNsIIIP program to the participants from their third trimester of pregnancy (32 weeks). There were six weeks during which they practiced by themselves (at least, pregnant women should practice the program once per day for 30 minutes) and the researcher revised it if they were wrong when they checked their pregnancy.

In conclusion, the CPNsIIIP program was needed by mothers to assist them in providing a positive coping strategy to reduce labor pain. Lowered labor pain will make a shorter duration of labor and facilitate safer deliveries. By using the CPNsIIIP, nurses help mothers and their families in a new intervention to enhance Pain-coping behaviors, and have shorter and safer deliveries. In addition, maternity nurses also help the family members involved to be satisfied with their roles.

Summary

In summary, the literature review in this study provided the development of a holistic program to reduce labor pain, improve pain coping-behavior, and shorten duration of labor to prevent maternal and fetal mortality. The CPNsIIIP program benefits for mothers during pregnancy and laboring, particularly during the active phase of labor. The mother was stroked, and given guidance on

breathing, positioning, and be accompanied by her family. The mother prayed by herself and surrendered to Allah (essentially allowed her the opportunity of repetitive positive inputs like saying "*La haula wala quwwata illah billah hil 'aliyyil adziim*", sincerity, patience) which inhibited impulse transmissions sufficiently at the level of the spinal cord, and then resulted in the perception of pain being blocked.

To gauge the success of the CPNsIIIP program, the researcher needed to control several factors, i.e. labor pain, pain-coping behaviors, and duration of labor such as parity (only primiparous Muslim women participated in this study), positions (sitting in the upright position for all women), and not overweight. Fear, anxiety, information, and communication were controlled by providing childbirth education for pregnant women in the antenatal clinic setting for all women in the hospital or CHC with support from the family members. All women believed and had faith in Allah, Angels, the 25 Prophets, Scriptures (Qur'an, Ingil, Zabur, Torah), day of judgement, and the divine predestination attributed to the occurrence of pleasure and suffering according to the will of Allah. Also the size of the pelvis of the women was normal with cephalic presentations, single pregnancy, and no complications in either the mother or fetus. To our knowledge, the CPNsIIIP (with active prayer/*ruqyah*) has never been used in Indonesia. The literature reviews revealed that just listening to the Qur'an or passive prayer/*ruqyah* (not holistic care and not both of provided childbirth education in antenatal clinic and implemented it during labor) was effective in decreasing pain in post-caesarean section and cancer patients. Therefore, it was important to conduct a study by active prayer, holistic care, and implementing the program during pregnancy and at the time of labor which was developed in the program. It was necessary to examine the effectiveness of the CPNsIIIP program.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter presents the research methodology involving the research design, setting, population, sample, instrumentation, intervention, ethical considerations, data collection procedure, and data analysis.

Research Design

An experimental design was conducted to examine the effects of the Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP) program on labor pain, pain-coping behaviors, and the duration of the active phase of labor for primiparous Muslim women. The primiparous Muslim women, who attended the prenatal class for their regular check-up, were randomly assigned into two groups: the experimental group and control group. The experimental group participated in the CPNsIIIP program by controlling confounding factors. Labor pain and pain-coping behaviors were measured at 1st, 2nd, and 3rd hour from a cervical dilation of 3-4 cm which was in an active phase of the first stage of labor, as shown in the flowchart of the study below:

Group	**Antenatal Period (week)**			**Enter hospi-tal for birth**	**Intra-partum period (active phase of first stage of labor)**							
	32	**34**	**36**	**38-42**	Pre-test	1st hr		2nd hr		3rd hr		CD 10 cm
Experimental	R, CE	√	√	√	**O1**	**X1**	**O2**	**X2**	**O3**	**X3**	**O4**	
Control	R	→	→	→	**O1**	→	**O2**	→	**O3**	→	**O4**	

Figure 3. Research design of the CPNsIIIP program

Note:
R =Randomization of pregnant women at antenatal clinic
CE =Childbirth Education
√ =Researcher met the participant to refresh the non-pharmacological labor pain management after provided childbirth education
O1-4 =Measure of labor pain and pain-coping behaviors
X1-3 =Implementation the stroking, breathing, positioning, and Islamic praying
CD =Cervical dilation
hr. =Hour
⟷ =Measure the duration of active phase of first stage of labor for both groups

Variables

The study variables involved independent and dependent variables. The independent variable of the study was the CPNsIIIP program. The dependent variables were labor pain, pain-coping behaviors, and duration of active phase of labor (3-4 cm to 10 cm of cervical dilation)

Research Setting

The study took place in an antenatal clinic and labor unit, at the Bhinneka Bhakti Husada (BBH) hospital and Community Health Center (CHC) Pamulang, according to Indonesian government policy related Social Security Agency

of Health Service for pregnant women and childbirth in Pamulang, Banten.

Currently, the Indonesian government is applying Social Security Agency of Health Service [namely *Badan Penyelenggara Jaminan Sosial*] which is known as Social Agency of Health Service. Antenatal care and childbirth are free of charge as groove. All pregnant women should register in the CHC for main service and take all administrative correspondence. After that, the pregnant women are refered to get Ultra Sonography (USG) service in the BBH hospital or Tangerang Selatan hospital because the CHC does not provide USG services. Most of Muslim women select the BBH hospital, because it is an Islamic hospital. After USG service, the pregnant women without complication are free to choose where to give birth, whether in the BBH hospital or in to CHC Pamulang.

BBH hospital and CHC Pamulang provide similar standardized care and same services. Nurse-midwives handle normal labor in these places. BBH hospital has cooperation with several clinics of nurse-midwives where the doctor works as medical specialist. These places also have same services with BBH hospital and CHC Pamulang.

Population and Sample

The population of this study consisted of primiparous Muslim women who were in 32 weeks of their pregnancy. The sample of this study involved who attended the antenatal clinic and labor room of the target settings and met the inclusion criteria from June 2016 to January 2017.

The participants in the study were selected based on the inclusion criteria in the antenatal clinic and delivery room.

Inclusion and Exclusion Criteria

The following inclusion criteria were used to select the participant in the ante-natal care. They were: 1) singleton pregnancy (2) receiving antenatal care since 32 weeks of pregnancy until labor, and (3) willing to be contacted by phone to control exercise at home every day.

Whereas the inclusion criteria in the labor room (for mother and fetal) included (1) normal gestation for birth (2) normal fetal heart rate (120-160 beats per minute), assessed by using a Doppler stethoscope, (3) latent phase no more than 12 hours, (4) cephalic presentation (occiput posterior), (5) not arrive to labor room at > 4 cm of cervical dilation, (6) progress of labor and delivery is not less than 3 hours, (7) without any health complications (mother or fetus), and (8) accompanied by family.

The exclusion criteria were the development of any adverse medical disease, psychological depression, pregnancy complications such as preeclampsia, heart, renal, thyroid disease, placental abruption, asthma, placenta previa, twin pregnancy, and any possibility of fetal anomaly like fetal distress, hydrocephalus, came late to the labor room (more than 4 cm of cervical dilation), and not complete the program.

Sample Size

The researcher used a previous study for sample size calculation which was relevant to massage-stroking in according with the rhythm of the woman's body and mind, and positioning on labor pain and duration of active phase of labor by randomized controlled trial design (Gallo et al., 2013). Based on the independent *t*-test reported means of labor pain (mean=52, *SD*=20) and means of duration of labor (mean=7, *SD*=1.6) in the experimental group and means of labor pain (mean=72, *SD*=

15) and means of duration of labor (mean=6, *SD*=1.5) in the control group. Thus, the effect size (d) of labor pain was 1.13 = 11 women per group, and the effect size (d) of duration of labor was 0.64 = 31 women per group.

However, related to high mobility of pregnant women who go back to their village due to Pamulang's resident come from various province in Indonesia, like Jakarta as Capital City, therefore in the practice to prevent attrition, the researcher added more participants 30% from 82 (107 pregnant women), because of other study reported females are 20 percent more likely to move outside of district than males, thus failure to track these migrates would have increased attrition from 16 to 30 % (Baird, Hamory, & Miguel, 2008; Sohanpal, Hooper, Hames, Priebe, & Taylor, 2012). In the practice, the researcher added the participants become even number 110 pregnant women. During data collection process, there were 9 women who dropped out from the study; five women from the experimental group and 4 women from the control group. They withdrew due to some reasons; two women in the experimental group and 3 women in the control group used caesarean section with a variety of reasons, 2 women in the experimental group moved to their home town (East Java and West Java), 1 woman in the experimental group had rapid progress of labor and delivery (active phase of labor was less than 3 hours), and 1 woman in the control group came to delivery room at 7 cm of cervical dilation. Therefore, the attrition was 8.18% (9:110x100%) and the total attrition was 24.5% (27:110x100%) as shown in schema below:

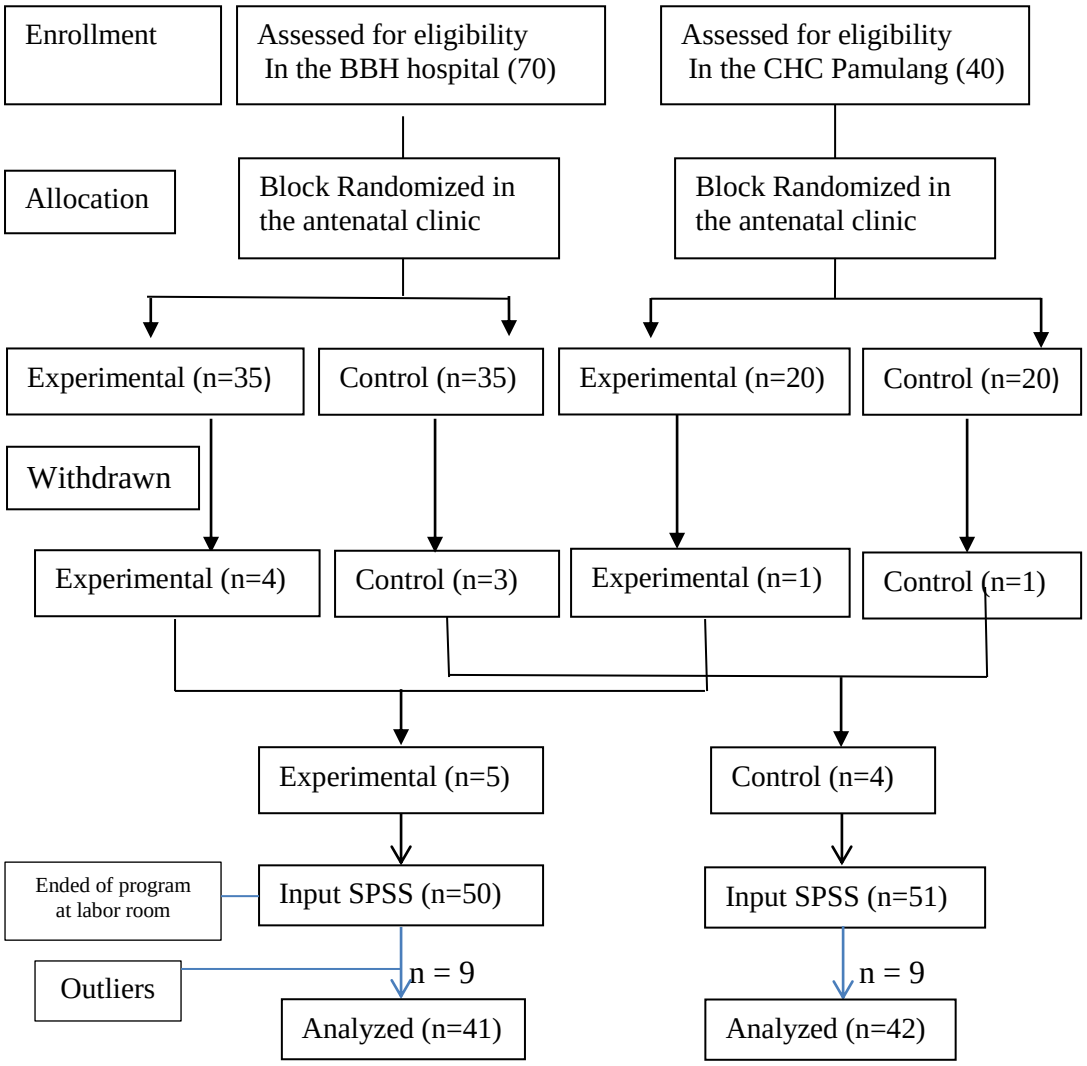


Figure 4. Flow diagram of participants during study

Recruitment Sampling and Group Assignment Procedure

In the beginning, purposive sampling was used to recruit participants. The researcher discussed the eligible participants with a maternity nurse who worked at the ante-natal clinics. The procedures in recruiting participants and assigning the group were in the following.

1. The maternity nurse approached the pregnant women

2. The researcher together with the maternity nurse assessed eligibility of the participants who met the inclusion criteria in the antenatal visit.

3. The researcher informed the study to them about objectives, steps of the CPNsIIIP program, benefits of the program, the right to participate, privacy, confidentiality issues, and the right to withdraw from the study at any times and without any consequences.

4. The researcher asked the eligible participants give their consent to participate in this study and asked pregnant women to write the informed consent (Appendix A) for those who verbally agreed to participate.

5. After the written informed consent had been obtained, the researcher assigned the pregnant women either into the experimental group or the control group by using the block randomization method (Kang, Ragan, & Park, 2008), and pregnant women filled in demographic data (Appendix B).

Randomization

Random assignment is important in experimental design, because it ensures every subject which has an equal chance of getting treatment, provides a basis for the statistical methods, and prevents selection bias (Suresh, 2011). The researcher used block randomization: given a block size of 4, there were 6 possible ways (EECC, CCEE, ECEC, CECE, ECCE, and CEEC) to equally assign participants to a block. Then by randomly selected one of the orderings, for example if elected EECC, assigned pregnant women according to the specified sequence: Experimental, Experimental, Control, Control, and so further (Efird, 2010).

The random assignment use block randomization and data collecting process for this study were described in figure 5.

Instrumentation

There were two instruments in this study. The first was instrument for intervention and the second was instrument for data collection. Independent variable (CPNsIIIP program) and all dependent variables (labor pain, pain-coping behaviors, duration of labor) were explained in detail including how they were developed, implemented and measured to ensure the construct validity of the study variables. The instruments were developed in the Indonesian language (Bahasa) and translated into the English language by using back translation technique, and translate to Bahasa again, and then tested for content validity and reliability.

1. Instrument for intervention.

The Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP) Program was developed by the researcher based on Islamic Philosophy and the Holistic Nursing Theory proposed by Dossey (2013) then consultation with two experts in Islamic, and five experts in maternity nursing. Protocol/guidelines of the program (Appendix C), CPNsIIIP booklet (Appendix D), health teaching were used as a reference to follow in order to ensure the stability of the CPNsIIIP program.

CPNsIIIP program.

There were four phases in the CPNsIIIP program included; preparation phase, reminder phase, working phase, and termination phase. The duration of the program was 6 to10 weeks per woman, because this program began from 32 weeks of pregnancy until gave birth. Brief overview of the phase was as follow (for details at data collection procedure):

1. Preparation phase, the researcher gave childbirth education

regarding non-pharmacological pain management (breathing, stroking, positioning, praying with involvement of her family) (as in the booklet in Appendix D) with educational activities at ante-natal clinic in the third trimester of pregnancy. Preparation phase held once, at 32 weeks of pregnancy and the providing education was approximately 45 minutes to 1 hour.

2. Remind phase or refresher phase; the researcher reminded the pregnant women by phone to practice positioning (walking, standing, sitting, squatting), *ruqyah* prayer, stroking and breathing at home at least once every day. Refresher was done when the pregnant women came to hospital or CHC to control their pregnancy by researcher and when the mother entered the hospital for birth (at least 2 times to meet them). This phase conducted for approximately 30 minutes.

3. Working phase was done by researcher or research assistants (RA) after cervical dilation of 3-4 cm in the delivery room with family involvement. The working phase comprises of three steps; positioning-breathing, praying, and stroking. The positioning-breathing, stroking, and Islamic prayer were performed three times (at 1st hour, 2nd hour, and 3rd hour after cervical dilation of 3-4 cm) by involving of the labor support from family that had to encourage the participants to do those and together in praying and stroking. Islamic praying was done when there was no contraction, and during contractions the mother was advised to take breath (details in data collection procedure). The working phase was conducted for approximately 30 until 45 minutes for once section, and in this study needed 3 sections/times (at 1st hour, 2nd hour, and 3rd hour after cervical dilation of 3-4 cm). Pain and pain-coping behaviors were measured at pre-test, 1st hour, 2nd hour, and 3rd hour post-test. The duration of active phase of labor was measured at 10 cm of cervical dilation in

minutes (details as in data collecting procedure).

4. Termination phase was done by researcher or RA after the interventions conducted to 10 cm of cervical dilation (until birth if needed), because it was not polite to leave the patients before baby born (details as in data collecting procedure). The termination phase took 15 to 30 minutes.

The Practice Record Form at home (Appendix E) was used to control pregnant women to do interventions at home which had been developed by the researcher.

Usual care.

Standard or usual care refers to routine care for pregnant women and childbirth in Indonesia. Antenatal examinations during pregnancy were as follow: 1). At least once in the first trimester of pregnancy (0-13 weeks), 2). At least once in the second trimester of pregnancy (14-28 weeks), 3). At least twice in the third trimester of pregnancy (29-36 weeks). Time visits were recommended: before 16 weeks of pregnancy, between 24-28 weeks of pregnancy, between 30-32 weeks of pregnancy, and between 36-38 weeks of pregnancy. The minimum standard of antenatal care services are called 7T in Indonesia namely: 1) weight and height (Weigh=*Timbang*) 2) measure (Pressure=*Tekanan)* blood, 3) measure (High=*Tinggi*) fundus, 4) immunization complete (TT=TT) 5) provision of minimum 90 iron tablets during pregnancy (Tablets=Tablet) 6) Testing for sexually transmitted diseases *(*Testing=*Tes)* 7) Rally speech *(Temu wicara)* and counseling in order to referral (Indonesian Health Ministry, 2013; Riadi, 2013).

Although education for pregnant women was provided, but the reality on the ground was that counseling for pregnant women was only conducted if they

were in the referral order and it showed a lack of awareness (visits 1 to 4 of check-up of pregnancy were incomplete) (Pramana, 2013). Standard care for childbirth included monitoring vital signs and vaginal examination to check the dilation of the cervix until 10 cm, decline in the head of the fetus, and the color of amniotic fluid during the first stage of labor and using the 58 steps of Normal Delivery Care which is 58 steps of Normal Childbirth Care [*Asuhan Persalinan Normal (APN)*] (Indonesian Health Ministry, 2013).

2. Instruments for data collection.

The instruments used for data collection were as follows: the Demographic Data Questionnaire (DDQ) and Obstetric Data Questionnaire (ODQ) which developed by researcher, the Visual Analogue of Scale (VAS), Pain Behavior Observation Scale (PBOS) and duration of labor was measured in minutes.

2.1. Demographic Data Questionnaire (DDQ).

The DDQ was used to collect the demographic data, such as age of woman, educational level, ethnicity or race, family monthly income (including couple's income), and occupation. Demographic data form was filled in by pregnant women after signing the informed consent form and before randomized assignment to groups (Appendix A, no 1-5).

2.2. Obstetric Data Questionnaire (ODQ).

The ODQ was used to collect obstetric data comprises gestational age at health teaching and birth, weight and height of pregnant women at birth, family support at health teaching and birth, health problems during this pregnancy, painful menstruation, number of time of receiving antenatal care, ruptured membrane, received artificial ruptured of membrane, spontaneous ruptured of membrane,

characteristic of amniotic fluid, type of analgesic drug that women received during labor, baby weight, APGAR (Appearance, Pulse, Grimace, Activity, Respiration) score at one and five minutes after birth, complications of women and fetus during and after study that was obtained from the mother's records and her infant's birth records by a research assistant in the delivery period (Appendix B).

2.3. Visual Analogue Scale (VAS).

The VAS was designed to measure any changes in the severity of pain. Metric calculation was used with ruler for VAS in millimeter. The scale was simple to administer and easy to score (Field, 2008; Martenson & Bergh, 2011). In this study, the VAS was used to measure pain at the start of the data collecting procedure (pre-test or baseline) and then every hour during the study for three hours of active phase of labor. The scale was from 0 to 100 mm (from no pain and worst imaginable pain) that developed by Maxwell (1978) if severe pain make mark over 60 mm on the VAS, moderate pain make mark from 40-60 mm, and mild pain make mark under 40 mm on the VAS. A higher score implies a higher level of pain. The pregnant women were told to make sure they place marks on the lines in this scales in order to prevent mistakes. However, the women were not permitted to look at the scales they had marked preceding in order to prevent response bias (Phumdoung & Good, 2003).

2.4. Pain Behavioral Observation Scale (PBOS).

The PBOS was used to observe the pain-coping behaviors of the women during uterine contractions. This observation form derived from Sterock Labour Coping Scale (1972), developed by Baosoung (1983), modified some score by Chuntarapat (2008), by Arayajaru (2012). The researcher used it under permission by Baosoung (1983) (Appendix F). This form consisted of five behaviors of women

during uterine contraction (vocalization, body movement, breathing control, facial expression, and communication) that used scores from 1 to 3. 1 = bad behavior, 2 = middle behavior, 3 = good behavior. The total score ranges from 5 to 15. A lower score indicated the women displayed poor pain-coping behaviors and vice versa. The researcher or research assistants recorded the behaviors expression at the same time as measuring the VAS.

Translation of Instruments and Intervention Guideline

The DDQ, the ODQ, the VAS, the PBOS, and interventions guideline of the CPNSIIIP program were translated by using the back translation method (Erkut, 2010; Sousa & Rojjanasrirat, 2011; WHO, 2006). This method consisted of three phases; 1) the original English version was translated into Indonesian (Bahasa) language by a bilingual translator and checked its conceptual, cultural and spiritual relevance with the local context, 2) the Indonesian version was back translated to English by a second translator who was a bilingual Indonesian. Both of bilingual translator worked independently for the translation into the target languages, 3) English expert evaluated both the original and back translated English version to ensure the equivalence of the two versions (for discrepancies). This means that the native translator clarified and identified the discrepancies several times between the original and translated English version and the researcher revised the discrepancies of the Indonesian version. The guideline of the intervention program and booklet were written by the researcher in English and then were translated to Indonesian. The researcher revised the Bahasa based on the experts' suggestions like need to use simple words to explain the program (Appendix G).

Validity and Reliability of the Instruments

Content validity of the instruments.

Content validity of the instruments was assessed by five experts, and added two experts only evaluated the validity of Islamic content (*ruqyah* prayer) to clarify and prove its adequacy in terms of construct validity and appropriateness. The five experts included one expert in antenatal clinics and one maternity in care with expertise in the area of obstetric care. They had experience in using these or relevant instruments in their research work. Three experts from the Department of Obstetrics and Gynecology, Faculty of Nursing, Prince of Songkla University, Thailand, and two experts from Indonesia (one expert from Department of Maternity Nursing Faculty of Nursing, University of Muhammadiyah Indonesia, and one experts from Faculty of Nursing, University of Islamic State, Jakarta, who was an expert on Islamic prayer as well.

The five experts validated the accuracy, language, conceptual, and cultural appropriateness of the PBOS, the CPNsIIIP practice record form, the DDQ, the ODQ, the intervention guideline of the CPNsIIIP program (teaching plan and protocol), and the booklet. Suggestions from the experts were incorporated in the final revision of the instruments, guidelines and booklet. The hand book (14 verses of Quran only) was evaluated by two experts who had experience in Islamic prayer. One expert was a professor from Faculty of Dakwah, state Islamic University, Jakarta and the last expert who was working at the Ministry of Religious Affairs, Jakarta Indonesia (Appendix G). The Content Validity Index (CVI) of the instrument was 0.83. The acceptable value of CVI was .80 (Polit & Beck, 2012, p.337).

In order to check the clarity and appropriateness, the instruments and

the program were tested with 10 pregnant women who were eligible the inclusion criterions in the pilot study. The researcher conducted a pilot study in the Community Health Center of Pamulang to ensure the feasibility of the CPNsIIIP program in a clinical setting.

Reliability of the instrument.

The reliability of the instruments used was already reported in previous studies: The VAS used the test-retest method at 3-4 cm of cervical dilation and when contractions were of 30-60 seconds in duration, the internal consistency of the VASPS was .74 (Chuntharapat, Petpichetchian, & Hatthakit, 2008). Concurrent validity between the VAS scales and a categorical question asked each hour was .73 to .95 (Phumdoung & Good, 2003). Concurrent validity between the VAS scales and a categorical question asked each hour was .73 to .95 (Phumdoung & Good, 2003). Good et al. (2001) reported 15-minutes test-retest reliability for the VAS in postoperative patients at .73, with convergent validity *r*= .90, construct validity *r*= .72, and discriminant validity *r*= .65. In comparison with the Mc Gill scale, for sensation of concurrent validity *r*=.44. VAS correlation with the sensation scale was from .89 (Good et al., 2001; Good et al., 2010). In this study, the VAS was tested for reliability by using the test-retest method. Test – retest reliability for the VAS in laboring women at 3-4 cm of cervical dilation and when contractions were of 30-60 seconds in duration had the internal consistency of the VAS was .69.

The interrater reliability of the PBOS was .80 (Chuntharapat, Petpichetchian, & Hatthakit, 2008). The study, PBOS internal consistency was tested by using the inter-raters observation and recorded of the women's behaviors of the same checklist. The agreement between the inter raters for reliability equivalence was

used the formula below (Polit & Beck, 2012):

$$\text{Reliability coefficient} = \frac{\text{number of agreements}}{\text{Number of agreements + number of disagreements}}$$

In this study, the researcher and 3 research assistants same test in the same way each time it's used under the same condition with the same subjects (on 10 primiparous women). The reliability of PBOS was 0.8

Pilot Study

The researcher was conducted a pilot study to ensure the feasibility of the CPNSIIIP program in a clinical setting, because the purpose of a small-scale version of the study was to test the feasibility of the study as preparation before conducting a large study (Polit & Beck, 2012, p.195). The pilot study was conducted with 10 primiparous women who met the inclusion criteria (who had the same criteria as in the big study to be carried out) at antenatal clinics then in the delivery room, Community Health Center Pamulang, Indonesia. This pilot study was conducted by the researcher to enhance the quality of the real study. At May, 2016, the researcher surveyed pregnant women data with 32 weeks of pregnancy in medical record of CHC Pamulang (the results more than 10 primiparaous pregnant women). The researcher started on research in the antenatal clinic every day accompanied with the head antenatal clinic persuaded to women with 32 weeks of pregnancy who check-up and will give birth in the CHC Pamulang. The approaches done by building trust and a good relationship with participants then the explanation was given about the study. Pregnant women who agreed to be correspondent of study needed to assign informed consent and researcher asked their mobile number. It had been done until got at least 10 participants. After that, the researcher randomized the pregnant women by using 6

ways of block randomize and the end Control Experimental Control Experimental (CECE) was elected. Then, the researcher drew the participants using lottery roll paper (envelope) with their name in it. The first name that came out became control group (C) and the next name into the treatment group (T) and so on.

The researcher then called women in intervention group to come to CHC on the next day to receive health teaching from the researcher about 45 minutes to 1 hour and the researcher delivered booklet and leaflet for them. The handbook and leaflet were used as guide for manual practice at home every day until the day of childbirth. The researcher continued regulator the women via phone to ask whether they already done practice or not for that day (minimum once a day). The researcher also reminded the women if there was signs and symptoms of labor, the women was suggested to inform the researcher and came to CHC Pamulang. It was aimed to prevent the women coming late to CHC Pamulang after cervical dilation 3-4 cm.

The researcher called the women in the control group to come to CHC Pamulang to receive explanation about the signs and symptoms of labor only and the researcher alerted them to inform the researcher whenever the signs and symptoms of labor occurred and to come as fast as possible to the CHC Pamulang. When in the labor room, the starting point of the study was when the cervical dilation was 3-4 cm. Women in experimental group was measured of pain and pain-coping behaviors at the starting point of labor at 3-4 cm cervical dilation before conducted interventions (pre-test), 1^{st}, 2^{nd}, and 3^{th} hour after interventions. Both participants in the experimental and control groups were asked to mark the VAS in the end of contractions (pre-test, 1^{st}, 2^{nd}, 3^{th} post-test), and the researcher observed the pain-coping behaviors of women at same time. Duration of active phase of labor was calculated in minutes at

fully cervical dilation (10 cm).

In summary, the CPNsIIIP program met the feasibility, acceptability and was applicable in the pilot study, because the program was beneficial for women and fetus who participated in the pilot study. The women reported that they were calm to face labor, because they have learned how to pray during inter uterine contractions and how to surrender oneself on Allah. They also learnt how to breath when uterine contractions, stroking, and upright positions by involving family. The program was simple, easy to do, very helpful and not harm for primiparous women and fetus.

However, the researcher founded a difficulty in term of finding appropriate time for pregnant women to come at the same time for receiving health teaching, therefore the researcher gave childbirth education (for experimental group) by adjust it with their time. As the consequence, the researcher gave education almost every day and most of education was provided per individual or per 2 to 3 persons accompanied by their families.

Modifications from the pilot study.

Modifications of instruments, data collection, and administration were made based on the problems and responses of women and family during the pilot study. There were women asked the researcher to write verses of *ruqyah* of Islamic praying in 1 page paper in Latin and Indonesian language only (not 4 languages: Latin, Indonesian, Arab, and English language) and easy to bring it anywhere. The women who were not able to mark of VAS of labor pain scores because of severe pain, women were first asked to point with their finger on the line in the VAS of labor pain like pain perceived, and the researcher would mark on the line exactly as indicated.

Data Collection Procedure

1. Preparation Period.

This period comprised proposing permission to the Director of BBH Hospital. While the researcher was waiting for decision from the BBH hospital, the researcher attended *ruqyah syariah* training 3 times at the *Ruqyah Syari'ah* Club, Tangerang, Bekasi, and Depok. Indonesia, preparing the materials and instruments include informed consents.

After obtaining permission from Director of BBH hospital, and the head of health department (already confirmed when pilot study), the researcher recruited 3 research assistants. Criteria of research assistances were at least a Bachelor of Nursing-Midwifery who helped or had experience in both the antenatal and the delivery periods at least one year.

The researcher held a technical meeting with research assistants to:

1. Explain about the aims of the study, the benefits of the study, and their role and responsibility.

2. Explain the guidelines of the program (especially the protocol in delivery room), such as how to breathe during uterine contractions, praying-surrendering oneself on Allah during inter uterine contractions, stroking, and positioning with involve family. In this study only the researcher who gave the health teaching to participants at antenatal clinic to create same content and material among women.

3. Train how to collect data during data collection, how to fill out the instruments; The VAS and PBOS start at 3-4 cm cervical dilation, 1 hour, 2 hour, and 3 hour after cervical dilation of 3-4 cm, duration of active phase of labor

and duration of second stage of labor (in minutes), as well as discuss any problems (in all aspects of data collecting).

The reason for using research assistants in collecting data in the labor room was to minimize the threat of experimental biasness. The researcher gave the subject's phone number to the research assistants in order to remind the participants to come as soon to the labor room if there were one of signs and symptom of labor (heartburn, mucous bloody show, rupture of membrane, uterine contractions). This was done to anticipate the participants not came late after 3-4 cm of cervical dilation. The researcher also reminded of the importance of research assistants participation as data collectors in this study, because of labor could not be exactly predicted (whether morning, evening or night shift), therefore the research assistant were given incentives IDR. 20.000 - 50.000, - per case.

2. Implementation period.

The researcher conducted intervention as follows:

2.1. The researcher contacted the Director of BBH hospital, the head of department of health and the head of CHC Pamulang. They introduce the researcher to the responsible person of the maternity room in the BBH hospital and in the CHC Pamulang.

2. 2. The researcher met both of mentors, and they introduced the researcher to the head of antenatal clinic and labor room. They asked the researcher to present a research proposal.

2. 3. The researcher discussed the eligible participants with the head of antenatal clinic and together accessed potential participants through the registration lists at antenatal clinic and approached the pregnant women who met the inclusion

criteria in the antenatal visit.

2. 4. The researcher informed the eligible participants about this study: objectives, steps of the CPNsIIIP program, benefits of the program, the right to participate, privacy, confidentiality issues, and the right to withdraw from the study at any time and without any consequences.

2. 5. The researcher asked the eligible participants to give their consent to participate in this study and asked pregnant women to sign the informed consent (Appendix A) for those who verbally agreed to participate. The researcher asked their phone number and asked them to fill out DDQ instrument (age, ethnic, education, occupation, and family's income per month).

2. 6. After the written informed consent had been obtained and received their phone number, the researcher assigned the participants either into the experimental group or the control group by using the block randomization method.

2. 7. The researcher then contacted the participants in the experimental group to come at next day to attend the health teaching regarding childbirth preparation; non-pharmacological pain management such as breathing, stroking, positioning, Islamic praying with involve family, signs and symptoms of labor, and how to mark the VAS instrument. The researcher also called the participants in the control group to come at same day (different time) or different day with experimental group to receive explanation the signs and symptoms of labor and how to fill out the instrument of VAS (Appendix B)

The Experimental Group.

Step 1. Preparation and teaching phase (32 weeks of pregnancy).

The researcher explained the health teaching for the intervention group

from 32 weeks of pregnancy, or later. In order to maintain the stability of the content of the material presented to all participants, only the researcher who gave the health teaching to participants at antenatal clinic. The researcher also gave them handbook and leaflet to guide manual practice at home. The meeting conducted approximately 45 minutes to 1 hour. Labor support from family was prepared from the 32 weeks of pregnancy by involving the family in childbirth education.

Step 2. Remind phase (refresher phase).

The pregnant women did practice (positioning, breathing, Islamic praying, surrendering oneself on Allah, stroking) at home every day until entered the hospital for birth. The researcher could monitor participants every day by phone and need to meet them more than once to check again whether they did interventions correctly (when checkup at antenatal clinic or home visit). When the participants entered the delivery room, the researcher reminded them again regarding how to breath, stroking, praying, positioning with involve their family, and how to mark the VAS instrument. This phase was conducted for approximately 15 to 30 minutes

Step 3. Working phase (38-42 weeks of pregnancy).

1.When cervical dilation 3-4 cm, the women were asked to put a mark on the lines in the Visual Analogue Scales in order to measure the labor pain from uterine contractions by self-reporting, and the researcher or RA observed the behaviors who expressed by laboring women at the same time (before starting the interventions as pre-test) by using POBS instrument during uterine contractions.

2. After that, the researcher/RA together with family guided the women by following the working phase that consisted of three steps: (a) positioning and breathing: shallow, decelerated-accelerated (follow the contractions), and paint blow

during uterine contractions occurred that guided by the researcher or RA. Set upright positions by family involvement, and the women were not allowed to stand and walk if membrane ruptured, (b) praying by their own self with *ruqyah*-surrendering oneself to Allah (can together with family). The *ruqyah* prayer (14 verses of Quran) in detail can be seen at hand book in the booklet (appendix D). If uterine relaxation, the women praying verses 1 until 5, and if the women felt uterine contractions directly to take breathing, and then continue to pray next verses (for instance, verses 6 to 10) during uterine relaxation, if uterine contraction occurred again, then directly to take breath, and so on until 14 of verses, and surrender oneself on Allah, and stroking by women or family on the abdomen (fundus uterine) with "love pattern" (Appendix D) after *ruqyah* prayer as much as can. The working phase was conducted for approximately 30 minutes for once section.

3. After first section was completed, the women were asked to put a mark on the lines in the VAS again (for 1st hour post-test). The women were also reminded to make sure they place mark on the lines in this scales in order to prevent mistakes. However, to prevent response bias, the woman was not permitted to look at the scales she had marked previously (pre-test). The researcher or research assistants observed the behaviors who expressed by laboring women at the same time (1st hour post-test) by using POBS instrument during uterine contractions.

4. Repeated the interventions by following 3 steps again as number 2 above for second section.

5. After that measure labor pain and pain-coping behaviors as number 3 above (for 2nd hour post-test).

6. Repeated the interventions by following 3 steps again as number 2

above for third section.

7. After that measure labor pain and pain-coping behaviors like number 3 above (for 3th hour post-test).

8. After the dilatation reached 10 cm, the researcher or RA measured duration of active phase of labor (in minutes), and second stage as well.

Step 4. Termination phase.

Termination phase was held after baby born. The termination phase took 15 to 30 minutes for congratulatory, to ask how their feeling after received the program and after gave birth, etc.

The Control Group.

The women in the control group received the same routine care and same procedure of data collection as followed in the experimental group (without CPNsIIIP program). The standard care for pregnant women was at least four antenatal care visits. Although education for pregnant women was provided, but the reality on the ground was that counseling for pregnant women was only conducted if they were in the referral order and showed a lack of awareness (visits 1 to 4 of check-up of pregnancy were incomplete). Usual care for childbirth includes monitoring vital signs and vaginal examination to check the dilation of the cervix until 10 cm, decline in the head of the fetus, and the color of amniotic fluid during the first stage of labor and using the 58 steps of Normal Delivery Care which is 58 steps of *Asuhan Perawatan Normal (APN*) or Normal Delivery Care from Indonesian Health Ministry, 2013 (Indonesian Health Ministry, 2013). The women in the control group (with or without accompanied by their families) were also asked to put a mark on the lines in the instrument of VAS to measure the labor pain by self-reporting at starting point

cervical dilation 3-4 cm (pre-test), and the end of contractions after interventions at 1st hour, 2nd hour, and 3rd hour after cervical dilation of 3-4 cm. The researcher or research assistants observed the behaviors who expressed by laboring women also by using PBOS instrument at that same time. The duration of labor was also measured in minutes until fully cervical dilation and even until the baby was born (if needed). Figure 6 below described about the implementation phase.

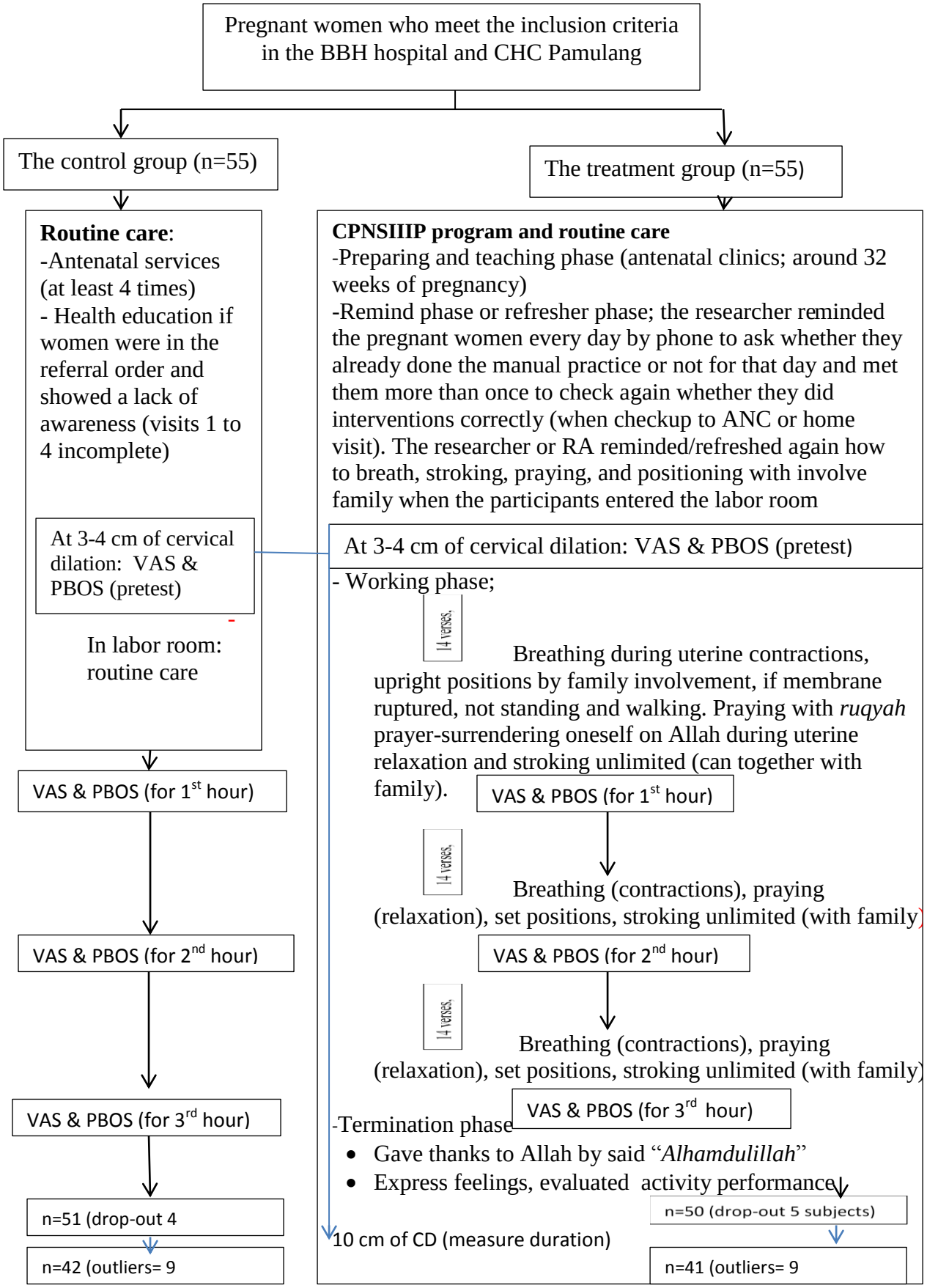


Figure 5. The implementation phase of data collection procedure

Ethical Considerations

Approval of the study was obtained from the committees of the Institutional Review Board (IRB) Faculty of Nursing, Prince of Songkla University, Thailand, and University of Pembangunan Nasional "Veteran" Jakarta, and the Hospital Institutional Research Board (HIRB) of the BBH Hospital, near Southern Jakarta, Indonesia (Appendix H). Permission was also sought from the Head of maternity ward before recruiting the participants. The primigravida woman agreed to participate in this study, and then verbal or written consent was obtained. The researcher informed the primigravida women on their rights to withdraw from the study at any times without any disadvantages. The primigravida woman developed any problems such as getting complication like high blood pressure, shortness of breath or being unable to attend the program during intervention and data collection, the activities was discontinued and proper assistance was provided to her. The researcher also informed the primigravida women that this program was not harmful to the mother and fetus. The primigravida women's information was kept confidential anonymity. All of the obtained data was used only in this study.

Assumption Testing of the Statistical Analyses

Assumption testing of the statistical analyses was done in order to decrease threats to internal validity.

The assumptions for repeated measures of ANOVA.

Dependent variables was measured at the continuous level (i.e., they are interval or ratio variables). The dependent variables of labor pain and pain-coping behaviors were normally distributed, and homogeneity of variance requirement was

met. The repeated measures method was modeled using the assumption of compound symmetric because the same participants were present in both groups (from the same people). The repeated measures ANOVA can also be used to compare different participants (Munro, 2001). The distribution of the dependent variable in the two or more related groups was approximately normally distributed. The researcher tested for normality using the Shapiro-Wilk test of normality for pilot study and Kolmogorov-Smirnov test for large study (Polit & Beck, 2012).

There are two assumptions: 1) the correlations across the measurements are the same (three times), correlation between the first and the second measure, the first and the third, and second and the third, should be the same (r12=r13=r23) or dependent variable 1 (dv1)=dv2=dv3, 2) the variances should be equal across measurements, the variance of 1 (v1)=v2=v3, the compound symmetry (CS) is necessary, if CS not met: (a) report the multivariate results rather than the univariate results, or (b) adjust the degree of freedom in the univariate approach to decrease the likelihood of type I error. Use of an epsilon correction for the within-participants is possible. Epsilon is multiplied by the degrees of freedom in the numerator and denominator, and the new degrees of freedom are used to test the F value for significance (Munro, 2001).

For sphericity, the variances of the differences between all combinations of related groups must be equal. Repeated measures ANOVAs were particularly susceptible to violating the assumption of sphericity (overly sensitivity to departures from normality) which causes the increase in the Type I error rate; that is,

the likelihood of detecting a statistically significant result when there is not one). Mauchly's test of sphericity can to meet this assumption (Dien & Santuzzi, 2005; Polit & Beck, 2012).

Variances of the differences between levels were significantly different. To produce a valid F-ratio, the estimates of sphericity used to correct the degrees of freedom are Huynh-Feldt correction when ε >.75 or the Greenhouse-Geisser correction when ε >.75 (Field, 2005). If the results revealed that the interaction between the independent variable of treatment and the covariance is not significant. It is mean that the slope of the regression line in each of the cells is similar (Field, 2005). Assumption for repeated measured of ANOVA in Appendix M.

The assumptions for independent *t*- test.

Dependent variable should be measured at the interval or ratio level. Independent variable should consist of two categorical, independent groups. Normal data distributions after deleted outliers were met. Homogeneity of variance (Levene's test) >.05= homogeneity, Equal variances assumed, and if <.05, see Equal variances not assumed.

The assumptions for one way ANOVA.

Dependent variable should be measured at the interval or ratio level. Independent variable should consist of two categorical, independent groups. Normal data distributions after deleted outliers were met. If homogeneity of variance (Levene's test) is same variance >.05, so compute Post Hoc Benferroni test. If homogeneity of variance (Levene's test) is not same variance <.05, so compute Post Hoc Games-Howell.

Data Analysis

Potential threats (internal validity) and strategies used for controlling them; 1). the instruments were composed of instructions and a brief explanation, 2) the researcher checked the data every day to prevent missing data, and if there was missing unintentionally, the researcher asked the women to complete the instruments, and 3) the researcher used same ruler for VAS in millimeters for accuracy.

Data Screening, missing, and cleaning.

The researcher checked accuracy and completeness of the data, prepared data coding for data entry. The data was entered daily at each data collection point and analyzed and cleaned data to decrease the errors during data entry. The data were analyzed using SPSS (v.21; USA). Descriptive statistics were used to assess the demographic of the data and any missing data to ensure the validity of the research findings. The means, standard deviations, frequencies, and percentages were computed to describe the demographics data such as women age, educational level, ethnic, occupation, and income family per month. Obstetric data like gestational age at health teaching and birth, weight and height of pregnant women at birth, family support at health teaching and birth, health problems during this pregnancy, painful menstruation, number of time of receiving antenatal care, receive artificial ruptured of membrane, or spontaneous ruptured membrane, characteristic of amniotic fluid, type of analgesic drug that women received during labor, baby weight, duration of labor, APGAR score at one and five minutes after birth, complications of women and fetus during and after study. An independent *t*-test for the interval data and chi-square for

nominal category data were used to determine these data group differences.

Outliers.

A problem with an extreme value on one variable or more was call outliers (univariate and multivariate). Outlier presence was caused by incorrect data entry. Outliers were assessed by box plot (Tabachnick & Fidell, 2007). From 50 women in the experimental group and 51 women in the control group, the researcher met several outliers in the both of groups. The researcher re-evaluated the instruments of subject numbers several times and checked descriptive extreme in the boxplots by using syntax and then deleting 9 cases outliers in the control group and 9 outliers in the experimental group. After that no outliers in the control group and experimental group by checking the boxplots, all data was normal (detail in chapter 4).

Preliminary data analysis.

The preliminary data analysis was analyzed to test univariate assumptions of dependent variables data for normality and homogeneity of variance. For normality, the Kolmogorov Smirnov test (sample >30) was used to analyze normality of the non-significant findings indicating normal distribution as (p>.05). For this study, skewness, stem and leaf plots, and kurtosis measurements in each group were performed. Skewness and kurtosis statistics was checked for value ± 3.29 (Tabacnick & Fidell, 2007), at .05 significance levels. The skewness and kurtosis for pain, pain-coping behaviors, and duration of labor, in the control group ranging -2.94 to + 2.18 and in the experimental group ranging -3.10 to + 2.60 (the data was normal distribution, appendix I). Chi-square analysis was used to determine differences in the educational level, ethnic, occupation, family support at health teaching and birth,

health problems during this pregnancy, painful menstruation, receive artificial ruptured of membrane, or spontaneous ruptured membrane, characteristic of amniotic fluid, and type of analgesic drug that women received during labor between groups. Independent t-test to determine differences in the women age, income family per month, gestational age at health teaching and birth, weight and height of pregnant women at birth, number of time of receiving antenatal care, baby weight, and APGAR score at one and five minutes after birth (p>.05).

The homogeneity of variances was examined by inspecting the spread of the box plot and calculating the Levene's test scores of the equality variances; the labor pain, pain-coping behaviors, and duration of labor scores. The analysis showed homogenous data if there was no significant difference (p>.05) (Tabachnick & Fidell, 2007). In this study, the Levene's test score all of homogeneity of variance were equal, spread of the box plot, it seem homogeneity of variance were all equal (p>.05) Assumptions of normality and homogeneity were met (Appendix I).

Inferential data analysis.

Test of hypotheses 1, 2. The repeated measures of ANOVA was used to investigate whether the mean scores of labor pain at 1 hour, 2 hours, and 3 hour from cervical dilation of 3-4 cm after the CPNsIIIP program was lower than before receiving the program. Post hoc of one way ANOVA was used to test there are significantly different of the mean scores of labor pain of primiparous Muslim women in the experimental group at the pre-test, the first hour, second hour, and third hour from cervical dilation of 3-4 cm. The Independent *t*-test was used to test whether

mean scores of labor pain at 1 hour, 2 hours, and 3 hours from cervical dilation of 3-4 cm in the experimental group was lower than in the control group.

Test of hypotheses 3, 4. The repeated measures of ANOVA was used to investigate whether mean scores of pain-coping behaviors at 1 hour, 2 hours, and 3 hours from cervical dilation of 3-4 cm after the CPNsIIIP program was higher than before receiving the program. Post hoc of one way ANOVA was used to test there are significantly different of the mean scores of pain-coping behaviors of primiparous Muslim women in the experimental group at pre-test, the first hour, second hour, and third hour from cervical dilation of 3-4 cm. The independent *t*-test was used to test whether mean scores of pain-coping behaviors at all three times were higher in the experimental group than in the control group.

Test of hypotheses 5. The independent *t*-test was used to test whether mean scores of duration of labor (in minutes) at the active phase of labor for the experimental group was shorter than in the control group.

In conclusion, repeated measure of ANOVA was used to identify the mean scores of labor pain and pain-coping behaviors over four time points within women in the experimental group, between subject effects both groups, and interactive between treatment and time. Post hoc test comparisons of one way ANOVA was conducted to assess there are significantly different of the mean scores of labor pain and pain-coping behaviors of women in the experimental group at pre-test, 1st hour, 2nd hour, and 3rd hour from cervical dilation of 3-4 cm. Independent *t*-test was used to test the differences of mean score of labor pain, pain-coping behaviors, and duration of labor between two groups.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter explains the results and discussion of the effect of CPNsIIIP program on labor pain, pain-coping behaviors, and duration of labor. The research findings consist of several parts, as follow:

Part I: The demographic data

Part II: The obstetric data

Part III: Study hypotheses

Results

Part I. The Demographic Data

A total of 110 women were enrolled in the study, 55 participants were allocated to the experimental group and 55 participants to the control group. During process the study, there were 9 participants dropped out (4 participants in the control group and 5 participants in the experimental group). Therefore, researcher analyzed only 50 participants in the experimental group and 51 participants in the control group.

During analyzing data, the researcher met several outliers in the both of groups. After the researcher re-evaluated the instruments of subject numbers several times and checked descriptive extreme in the boxplots using syntax and the researcher deleting 9 cases (outliers) in the control group (cases number 68, 99, 76, 48, 89, 5, 87, 42, 101) and 9 cases also in the experimental group (number sample 57, 69, 55, 110, 20, 3, 24, 74, 73). After that no outliers in the control group and experimental group by checking the boxplots and all data were normal distribution (Skewness and

Kurtosis were -2.94 to 2.18 in the control group and -3.10 to 2.60 in the experimental group) (Appendix I). Thus, at the end of the study, only 41 participants in the experimental group and 42 participants in the control group were analyzed. The total participant has met the minimum sample estimation at least 80 women (40 women per group) according to sample size calculation in chapter 3.

Statistically, there was no significant difference in demographic data between the experimental and the control group. The baseline demographic and obstetric data of both groups were similar. The largest percentage of the participants in the experimental group (75.6%) and control group (78.6%) were *Betawinese* and *Sundanese* ethnics (original ethnic of Jakarta-Banten) whose average age was 23.39 years old in the experimental group and 23.14 years old in the control group. More than half of the participants in the experimental group (82.9%) and control group (83.3%) had studied in the senior high school and junior high school level. Most of the pregnant women were not working in the experimental group (82.9 %) and the control group (73.8%), and reported that their families monthly income was 4,182,926 IDR (321.76 USD) for the experimental group and 3.809.523 IDR (293.04 USD) for the control group (table 1).

Table 1

Frequencies, Percentages, Means, and Standard Deviations of Demographic Data in Experimental and Control Group (*N*=83)

Variables	Experimental Group (*n*=41)	Control group (*n*=42)	t/X^2	*P*
	n (%)	*n* (%)		
Age (years)	23.4 (2.9) *M (SD)*	23.14 (3.7) *M (SD)*	-0.24	.732
Ethnic				
Betawinese, Sundanese	31(75.6)	33(78.6)	0.10	.748
Javanese, Minang, Batak	10(24.4)	9(21.4)		
Educational level				
Senior and junior high school	34 (82.9)	35 (83.3)	0.00	.961
Diploma and bachelor	7 (17.1)	7 (16.7)		
Occupation				
Not working	34(82.9)	31(73.8)	1.02	.314
Working	7(17.1)	11(26.2)		
Family's income per month (IDR)	4,182.92 (1,808.85) *M (SD)*	3,809.52 (1,909.38) *M (SD)*	-0.69	.363

Note: *M= means, SD= Standard Deviation*

Part II. Obstetric Data

In this section, the researcher explains the obstetric data of participants. For the experimental group, the average number of time of received antenatal care was 10 times (*SD*=2) with the number of time of received antenatal care ranging from 6 to 15 times. Nearly all participants in the experimental group (95.1%) had not experienced the painful menstruation and did not have health problems during this pregnancy. The average age of pregnancy at health education was 32.6 (*SD*=0.4) ranging from 32 to 33 weeks of pregnancy and they were accompanied by family during health teaching. The families who accompanied them during antenatal care

vary such as husband (56.1%), mother (12.2%), female relative or others (31.7%). Whereas during labor (especially at 3rd hour of the study in the active phase of labor), almost half of the women was accompanied by their mother (46.3 %), the rest of husband. The average age of gestational at birth was 39.3 weeks of pregnancy (*SD*=0.9) ranging from 37 to 41 weeks of pregnancy. The mean of mother's weight at birth was 69 kg (*SD*=5) range from 55 to 79 with average their height was 153.6 cm (*SD*=3.8) range from 145 to 170 cm. Majority of the women did not receive artificial ruptured membrane (80.5%) or spontaneous ruptured of membrane (80.5%). The various times of the spontaneous ruptured membrane were before the interventions (12.2%), during the interventions (17.1%), and after the interventions were conducted but still in the active phase of labor (70.7%). More than half of women's amniotic fluid (75.6%) was clear meconium, the rest of mild meconium and thick meconium. In terms of the Apgar score, the mean scores at the 1st minute after birth was 8.8 (*SD* =0.5) and range from 7 to 9, and at the 5th minute after birth was 9.8 (*SD*=0.5) range 8 to 10. In relation to the newborn weight, the average weight of the baby was 3018 grams (*SD*=315) range 2500 to 3700 grams (still used traditional scale like the picture in the booklet).

In the control group the average number of time of received antenatal care was 10 times (*SD*=2) with the number of time of received antenatal care ranging from 6 to 14 times. Most of participants had not experienced the painful menstruation (90.5%) and all of pregnant women did not have health problems during this pregnancy (100%). The average age of pregnancy when randomizing was 32.8 (*SD*=0.4) ranging from 32 to 34 weeks of pregnancy and all of them were accompanied by families when checkup their pregnancy; the average of those who

accompanied the family, 76.2% accompanied by their husband, 11.9 % by their mother, and 11.9 % by female relative or other.

Whilst during the first 3 hours of the active phase of labor, again almost half of the women were accompanied by their mother (57.1%), the rest of husband. The average age of gestational at birth was 39.2 weeks of pregnancy (*SD*=0.9) ranging from 37 to 41 weeks of pregnancy. The mean of mother's weight at birth was 68 kg (*SD*=6) range from 56 to 79 with average their height was 153.7 cm (*SD*=3.2) range from 148 to 161 cm. The majority of the participants did not receive artificial ruptured membrane (81%) or spontaneous ruptured of membrane (81%). The various times of the spontaneous ruptured membrane were before the interventions (4.8%), during the interventions (14, 3%), and after the interventions but still in the active phase of labor (81%). Women's amniotic fluid (64.3 %) was clear meconium and the rest of mild and thick meconium. The mean Apgar score at the 1st minute after birth was 8.8 (*SD* 0.4) and range from 8 to 9, and at the 5th minute after birth was 9.8 (*SD*=0.4) range 9 to 10. The average newborn weight was 3,069 grams (*SD*=307) range 2500 to 3900 grams by using traditional scale same with the experimental group.

When comparing between the experimental and the control group, there were no statistically significant difference in the obstetric data. The results are shown in Table 2.

Table 2

Frequencies, Percentages, Means, and Standard Deviations of Obstetric Data in Experimental and Control Group (*N*=83)

Characteristics	Experimental Group (*n*=41)	Control Group (*n*=42)	t/X^2	*P*
	n (%)	n (%)		
Number of time receiving ANC	10.3(2.1) *M (SD)*	10.2(1.8) *M (SD)*	-0.41	.678
Painful menstruation*				
No	39(95.1)	38(90.5)	0.16	.694
Yes	2(4.9)	4(9.5)		
Age of pregnancy at health teaching	32.6(0.4) *M (SD)*	32.7(0.4) *M (SD)*	1.01	.316
Family support at ANC				
Mother	5(12.2)	5(11.9)		
Husband	23(56.1)	32(76.2)	5.02	.081
Female relative or other	13(31.7)	5(11.9)		
Family support at labor**:**				
Mother	19(46.3)	24(57.1)	0.97	.325
Husband	22(53.7)	18(42.9)		
Gestational age at birth	39.3(0.9) *M (SD)*	39.2(0.9) *M (SD)*	-0.76	.446
Mother's Weight	69(5) *M (SD)*	68(6) *M (SD)*	-0.52	.602
Mother's Height	153.6(3.8) *M (SD)*	153.7(3.2) *M (SD)*	0.13	.892
Rupture membrane				
No	8(19.5)	8(19)	0.00	.957
Yes	33(80.5)	34(81)		
Receive artificial rupture of membrane				
No	33(80.5)	34(81)	0.00	.957
Yes	8(19.5)	8(19)		
Characteristics of amniotic fluid:				
Clear	31(75.6)	27(64.3)	1.26	.261
Mild-Thick	10(24.4)	15(35.7)		

Table 2 (continued)

Characteristics	Experimental Group (*n*=41)	Control Group (*n*=42)	t/X^2	*P*
	n (%)	n (%)		
Baby weight	3018.29(314.99) *M (SD)*	3069.05(307.22) *M (SD)*	0.74	.460
APGAR score 1	8.8(0.45) *M (SD)*	8.79(0.41) *M (SD)*	-0.19	.843
APGAR score 2	9.8(0.45) *M (SD)*	9.76(0.43) *M (SD)*	-0.43	.662

Note: *M*= mean, *SD*= standard deviation, *Continuity Correction

Part III: Study hypotheses

Hypothesis 1: The mean scores of labor pain at 1st hour, 2nd hour, and 3rd hour from cervical dilation of 3-4 cm in the experimental group was lower after receiving the program. The repeated measure of ANOVA was used to test: 1) the effects between the subjects in the control and experimental groups of labor pain, 2) the change in mean scores of labor pain, and 3) interaction between treatment and time (Table 3).

Based on the results of the repeated measures of ANOVA, there were significantly differences of overall mean scores of labor pain the experimental and the control group ([$F(1, 81) = 113$, $P = .00$, partial η^2 (effect size) = .58]. Also, there were significant statistical differences over the four points of labor pain, [$F(2, 182) = 82.84$, $P = .00$, partial η^2 (effect size) = .50]. The Mauchly's test of sphericity was significant ($P<.05$), which indicated a violation of sphericity assumption. In order to produce a valid *F* ratio, the researcher used the estimates of spherecity to correct the *df* by the Greenhouse Geisser correction (>.75) and by the Hyund Felt if the total number of participants was not same in the control and in the experimental group

(Field, 2005; Field, 2012). This revealed that pain was significantly reduced after having conducted the CPNsIIIP program (Table 3).

Table 3

The Analysis of Variances of Labor Pain of Primiparous Women during Active Phase of Labor of the Experimental and Control Groups (N=83) Using Repeated Measure of ANOVA

Sources of variance	Sum of Squares	*df*	Mean Square	*F*	*P*	Partial η^2
			Between-participants			
Group(intercept)	2421099	1	2421099	55017.23	.000**	.99
Group	4975.87	1	4975.87	113.07	.000**	.58
Error	3564.50	81	44.00			
			Within participants			
Time	254.75	2.25	112.97	9.28	.000**	.10
Group x time	2272.70	2.25	1007.91	82.84	.000**	.50
Error (time)	2222.14	182	12.16			

Note. ** $P < .001$

Furthermore, Post Hoc Test Multiple Comparisons of One Way ANOVA was conducted to analyze the comparison of mean differences of labor pain among 3 times after finished of the CPNsIIIP program within the experimental group. There were mean difference between pre-test and 1st hour (mean difference = -2.57, $P = 0.001$). It means that labor pain at the 1st hour was significantly lower than the pre-test. There were mean difference between the pre-test and the 2nd hour (mean difference = -3.95, $P = 0.000$). It means that the labor pain at the 2nd hour was significantly lower than the pre-test. There were mean difference between the pre-test and the 3rd hour (mean difference = -5.04, $P = 0.000$). It means that the labor pain at the 3rd hour was significantly lower than the pre-test. There were mean difference

between the 1st hour and the 3rd hour (mean difference = -2.47, *P* = 0.001). It means that the labor pain at the 3rd hour was significantly lower than the 1st hour. However, there were no mean difference between 1st hour and 2nd hour (mean difference = -1.38, *P* = 1.171), and between 2nd hour and 3rd hour (mean difference = -1.09, *P* = .366) (Table 4).

Table 4

Comparisons of Means Differences of Labor Pain Among 3 Times After Finished of the CPNsIIIP Program Within the Experimental Group (n=41) Using Post Hoc Test of One Way ANOVA

Comparison	*Mean (Standard Deviation)*				Mean difference	*P*
	Pre-test	1st hour	2nd hour	3rd hour		
Pre-test and 1st hour	86.38 (4.47)	81.17 (4.83)	-	-	-2.57	.001*
Pre-test and 2nd hour	86.48 (4.47)	-	78.43 (5.16)	-	-3.95	.000**
Pre-test and 3rd hour	86.48 (4.47)	-	-	79.31 (6.30)	-5.04	.000**
1st hour and 2nd hour	-	81.17 (4.83)	78.43 (5.16)	-	-1.38	1.171
1st hour and 3rd hour	-	81.17 (4.83)	-	79.31 (6.30)	-2.47	.001*
2nd hour and 3rd hour	-	-	78.43 (5.16)	79.31 (6.30)	-1.09	.366

Note. * *P*< .05, ** *P*<.001

Post Hoct Test was also conducted to compare of labor pain among 4 times within the control group. There were mean difference between pre-test and 1st hour (mean difference = 6.02, *P* = 0.000). It means that the labor pain at the 1st hour was significantly lower than the pre-test. There were mean difference between the pre-test and 2nd hour (mean difference = 8.75, *P*= 0.000). It means that the labor pain

at the 2nd hour was significantly lower than the pre-test. There were mean difference between the pre-test and 3rd hour (mean difference = 7.87, *P*= 0.000). It means that the labor pain at the 3rd hour was significantly lower than the pre-test. However, there were no mean difference between the 1st hour and the 2nd hour (mean difference = 2,73, *P*= .146), between the 1st hour and the 3rd hour (mean difference = 1.85, *P*= .476), and between the 2nd hour and the 3rd hour (mean difference = -0.87, *P*= .905) (Table 5).

Table 5

Comparisons of Means Differences of Labor Pain Among 3 Times within the Control Group (n=42) Using Post Hoc Test of One Way ANOVA

Comparison	*Mean (Standard Deviation)*				Mean difference	*P*
	Pre-test	1st hour	2nd hour	3rd hour		
Pre-test and 1st hour	87.19 (4.74)	88.95 (1.39)	-	-	6.02	.000**
Pre-test and 2nd hour	87.19 (4.74)	-	90.33 (2.03)	-	8.75	.000**
Pre-test and 3rd hour	87.19 (4.74)	-	-	91.42 (2.33)	7.87	.000**
1st hour and 2nd hour	-	88.95 (1.39)	90.33 (2.03)	-	2.73	.146
1st hour and 3rd hour	-	88.95 (1.39)	-	91.42 (2.33)	1.85	.476
2nd hour and 3rd hour	-	-	90.33 (2.03)	91.42 (2.33)	-0.87	.905

Note. ** *P*< .001

Hypothesis 2: The mean scores of labor pain at 1st hour, 2nd hour, and 3rd hour from cervical dilation of 3-4 cm in the experimental group was lower than those in the control group. The independent *t*-test was used to test the differences of mean scores of labor pain between two groups. Independent *t*-test of group

differences at each data point presented that the experimental group had significantly less pain scores at each posttest compared to the control group; first posttest, t= 9.91, P< .001; second posttest, t=13.73, P< .001; third posttest, t=11.54, P< .001. The mean scores of pre-test in experimental group was 87.19 (SD= 4.74) and in control group was 86.38 (SD=4.47) and there was not statistically significant decreased of both groups at pre-test (t=-0.80, P= .423). The mean scores, standard deviations and P value of labor pain over time of the experimental group and control group are reported in Table 6.

Table 6

Compare Means and Standard Deviations of Labor Pain in Experimental and Control Group in Each Time Point (N=83) Using Independent t-test

Time points	Labor pain				*t*	*P*
	Experimental (*n*=41)		Control (*n*=42)			
	M	*SD*	*M*	*SD*		
Pre-test	87.19	4.74	86.38	4.47	-0.80	.423
1st posttest	81.17	4.83	88.95	1.39	9.91	.000**
2nd posttest	78.43	5.16	90.33	2.03	13.73	.000**
3rd posttest	79.31	6.30	91.42	2.33	11.54	.000**

Note. ** P< .001

In addition, the results demonstrated that there was decreased labor pain in the experimental group, whereas the scores of labor pain in the control group were increased in the each time point (Figure 7).

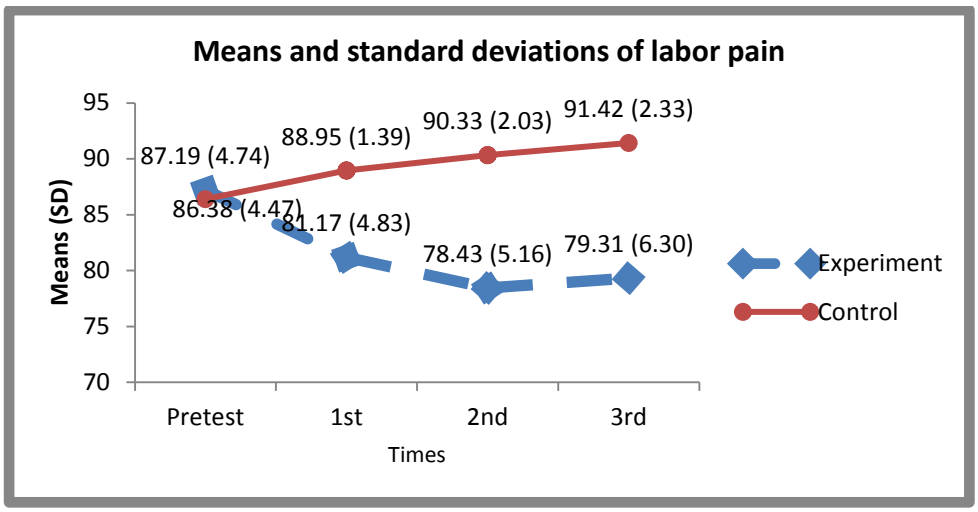


Figure 6. Means and Standard Deviations of Labor Pain at Pre-Test, 1st, 2nd, and 3rd Hour between the Experimental and Control Group (*N*=83).

The study showed that the pain in the experimental group at the 1st hour and the 2nd hour were lower and then a little higher at the 3rd hour than the 2nd hour.

Hypothesis 3: The pain-coping behaviors at the 1st hour, 2nd hour, and 3rd hour from cervical dilation of 3-4 cm of primiparous Muslim women in the experimental group is higher after receiving the program than the pre-test (before receiving program). The repeated measure of ANOVA was also conducted to analyze: 1) the effects between the subjects in the control and experimental groups of pain-coping behaviors; 2) the change in mean scores of pain-coping behaviors; and 3) interaction between treatment and time (Table 7).

Based on the results of the repeated measures of ANOVA, there were significantly differences of overall mean scores of pain-coping behaviors between the experimental and the control group ([$F(1, 81) = 147$, $P = 0.000$, partial η^2 (effect size) = 0.64]. Also, there were significant statistical differences over the four points of pain-coping behaviors, [$F(2, 182) = 165.55$, $P = 0.00$, partial η^2 (effect size) =

0.67]. The Mauchly's test of sphericity was significant ($P < 0.05$), which indicated a violation of sphericity assumption. In order to produce a valid *F* ratio, the researcher used the estimates of spherecity to correct the *df* by the Greenhouse Geisser correction (>0.75) and by the Hyund Felt if the total number of participants was not the same in the control and in the experimental group (Field, 2005; Field, 2012). This revealed that the pain-coping behaviors significantly increased after having conducted the program.

Table 7

The Analysis of Variances of Pain-Coping Behaviors of Primiparous Women during Active Phase of Labor of the Experimental and Control Groups (N=83) Using Repeated Measure ANOVA

Sources of variance	Sum of Squares	*df*	Mean Square	*F*	*P*	Partial η^2
			Between-participants			
Group(intercept)	23366.93	1	23360.93	13648.90	.000**	.99
Group	252.50	1	252.50	147.49	.000**	.64
Error	138.67	81	1.71			
			Within participants			
Time	51.32	2.33	21.96	93.52	.000**	.53
Group x time	90.85	2.33	38.87	165.55	.000**	.67
Error (time)	44.44	189	0.23			

Note. ** $P < .001$

Furthermore, Post Hoc Test Multiple Comparisons of One Way ANOVA was conducted to analyze the comparison of mean differences of pain-coping behaviors among 3 times after finished of the CPNsIIIP program within the experimental group. There were mean difference between pre-test and 1st hour (mean

difference = -1.51, *P* = 0.000). It means that the pain-coping behaviors at the 1st hour was significantly higher than the pre-test. There were mean difference between the pre-test and 2nd hour (mean difference = -1.97, *P* = 0.000). It means that the pain-coping behaviors at the 2nd hour was significantly higher than the pre-test. There were mean difference between the pre-test and 3rd hour (mean difference = -2.43, *P* = 0.000). It means that the pain-coping behaviors at the 3rd hour was significantly higher than the pre-test. There were mean difference between the 1st hour and the 2nd hour (mean difference = -0.46, *P* = 0.039). It means that the pain-coping behaviors at the 2nd hour was significantly higher than the 1st hour. There were mean difference between the 1st hour and the 3rd hour (mean difference = -0.92, *P* = 0.000). It means that the pain-coping behaviors at the 3rd hour was significantly higher than the 1st hour. There were mean difference between the 2nd hour and the 3rd hour (mean difference = -0.46, *P* = 0.039). It means that the pain-coping behaviors at the 3rd hour was significantly higher than the 2nd hour. It suggested that pain-coping behaviors were significantly increased over time after receiving the program (Table 8).

Table 8

Comparisons of Pain-Coping Behaviors Among 3 Times After Finished the CPNsIIIP Program Within the Experimental Group (n=41)Using Post Hoc of One Way ANOVA

Comparison	*Mean (Standard Deviation)*				Mean difference	*P*
	Pre-test	1st hour	2nd hour	3rd hour		
Pre-test and 1st hour	7.78 (0.88)	9.29 (0.90)	-	-	-1.51	.000**
Pre-test and 2nd hour	7.78 (0.88)	-	9.75 (0.48)	-	-1.97	.000**
Pre-test and 3rd hour	7.78 (0.88)	-	-	10.21 (0.47)	-2.43	.000**
1st hour and 2nd hour	-	9.29 (0.90)	9.75 (0.48)	-	-0.46	.039*
1st hour and 3rd hour	-	-	-	10.21 (0.47)	-0.92	.000**
2nd hour and 3rd hour	-	9.29 (0.90)	78.4 (0.48)	10.21 (0.47)	-0.46	.039*

Note. * $P < .05$, ** $P < .001$

Post Hoct Test was also conducted to compare of pain-coping behaviors among 4 times within the control group. There were no mean difference between the pre-test and the 1st hour (mean difference = 0.16, $P = 0.814$), between the pre-test and the 2nd hour (mean difference = 0.26, $P = 0.507$), between the pre-test and the 3rd hour (mean difference = 0.35, $P = 2.30$), between the 1st hour and the 2nd hour (mean difference = 0.09, $P = 0.958$), between the 1st hour and the 3rd hour (mean difference = 0.19, $P = .744$), and between the 2nd hour and the 3rd hour (mean difference = 0.09, $P = .958$), (Table 9).

Table 9

Comparisons of Pain-Coping Behaviors Among 3 Times Within the Control Group (n=42) Using Post Hoc of One Way ANOVA

Comparison	*Mean (Standard Deviation)*				Mean difference	*p* value
	Pre-test	1st hour	2nd hour	3rd hour		
Pre-test and 1st hour	7.71 (0.94)	7.54 (0.83)	-	-	0.16	.814
Pre-test and 2nd hour	7.71 (0.94)	-	7.45 (0.70)	-	0.26	.507
Pre-test and 3rd hour	7.71 (0.94)	-	-	7.35 (0.61)	0.35	.230
1st hour and 2nd hour	-	7.54 (0.83)	7.45 (0.70)	-	0.09	.958
1st hour and 3rd hour	-	-	-	7.35 (0.61)	0.19	.744
2nd hour and 3rd hour	-	7.54 (0.83)	7.45 (0.70)	7.35 (0.61)	0.09	.958

Hypothesis 4: The mean scores of pain-coping behaviors at the 1st, 2nd, and 3rd hour from cervical dilation of 3-4 cm in the experimental group was higher than those in the control group. The Independent *t* test was used to test the differences of the mean scores and the standard deviation of pain-coping behaviors between two groups.

The findings demonstrated the differences of the mean scores and standard deviation of pain-coping behaviors in the experimental group at the 1st hour of pain-coping behaviors was 9.29 (0.90), at the 2nd hour was 9.75 (0.48), and at the 3rd hour was 10.21 (0.47), and the mean scores in the control group were 7.54 (0.83), 7.45 (0.70), and 7.35 (0.61), respectively. It was found there was a significant difference across the 3 hours of both groups (t = -9.15, P < .001), (t = -17.32, P <

.001), and (t = -23.70, P < .001), respectively. There was no significant difference for both of the groups at pre-test (t=-0.33, P =.742). The mean scores, standard deviations, and P-value of the pain-coping behaviors at each time point of the experimental group and control group are reported in Table 10.

Table 10

Compare Means and Standard Deviations of Pain-Coping Behaviors in Experimental and Control Group Each Time Point (N=83) Using Independent t-test

Time points	Pain-coping behaviors				*t*	*P*
	Experimental (*n*=41)		Control (*n*=42)			
	M	*SD*	*M*	*SD*		
Pre-test	7.78	0.88	7.71	0.94	-0.33	.742
1st posttest	9.29	0.90	7.54	0.83	-9.15	.000**
2nd posttest	9.75	0.48	7.45	0.70	-17.32	.000**
3rd posttest	10.21	0.47	7.35	0.61	-23.70	.000**

Note. ** P < .001

The findings demonstrated that there was an increasing of pain-coping behaviors over time in the experimental group, whilst the pain-coping behaviors in the control group decreased at each time point (described in Figure 8).

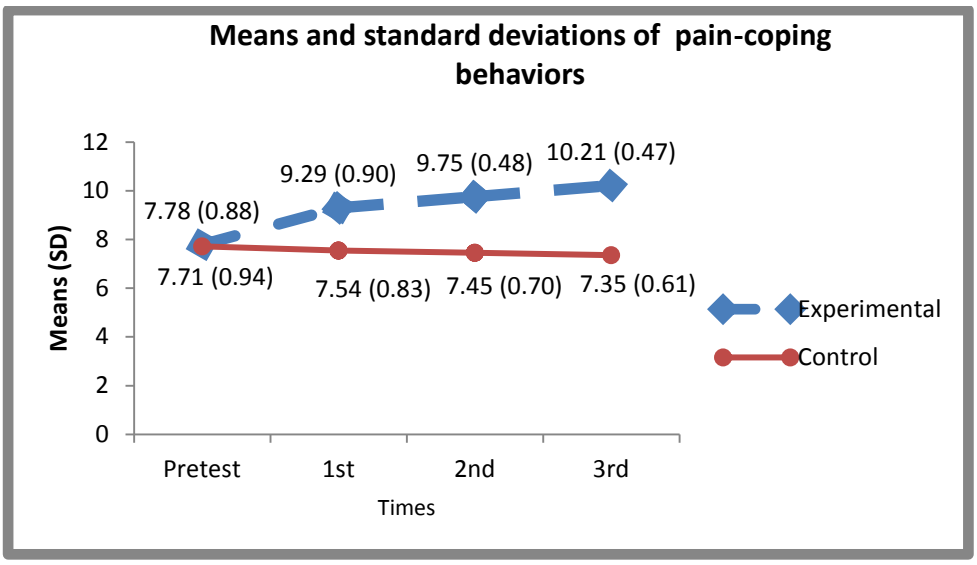


Figure 7. Means and Standard Deviations of Pain-Coping Behavior at Pre-Test, 1st, 2nd, and 3rd hour between the Experimental and Control Group (*N*=83).

Hypotheses 5: The mean scores of duration of labor (in minutes) at the active phase of labor for the experimental group was shorter.

In relation to the time spent in the active phase of labor (from 3 or 4 to 10 cm of cervical dilation), the total time in the active phase of first stage of labor of the experimental group was 202.3 minutes (*SD* = 41.2). Whilst, the mean scores of time spent in the active phase of labor for control group was 313.8 minutes (*SD* = 86.6).

Independent t-test suggesting that there was statistically significant shorter the duration of active phase of labor in the experimental group than those in the control group (*P*<.001) at Table 11.

Table 11

Comparisons of Mean scores and Standard Deviations of Duration of Labor in Active Phase of Labor between 2 Groups (N = 83) Using Independent t test

Phases of labor	Experimental Group (n = 41)		Control Group (n = 42)		t	P
	M	*SD*	*M*	*SD*		
Active phase (3-4 to 10 cm of cervical dilation/CD)	202.3	41.2	313.8	86.6	7.51	.000**

Note. ** $P < .001$

Discussions

The discussion focuses on the results of the study in relation to the demographic data, obstetrics data, labor pain, pain-coping behaviors and duration of labor after performing the Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP) program. Findings are organized according to the hypotheses of the study and comparing them with those of previous studies.

Demographic Data and Obstetric Data

The average age of the mother was 23.39 years old in the experimental group and 23.14 years old in the control group, which are still in the age range recommended for pregnant and childbirth (20-35 years old) (Indonesian Health Ministry, 2013). A mother who has an age of more than 35 years old was associated with several cases, like endometrium problems that relate to labor pain and the progress of labor (Sumira, Nirwana, & Mato, 2013), and a mother who has an age of less than 20 years old, has not fully matures yet in regards to reproduction which can often result in complications of childbirth and is also related to pain (Cunninghum et al., 2010). However, considering the limitation of primiparaous women, the researcher cannot control this variable, therefore the researcher also recruited a 36-

year-old mother and a 19-year-old mother in this study. This does not follow the ideal suggestion in which labor pain was found to be more severe in younger women (20-34 years) compared to older women (> 35 years) (Strestha, Pradnan, & Sharma, 2013).

Betawinese and Sundanese ethnic people as the indigenous people of Jakarta-Banten dominated in this study, however there were other ethnic groups such as Javanese, Minangnese, and Bataknese at around 24.4 % in the experimental group and 21.4% in the control group. This variable cannot be controlled as well due to Pamulang's residents which are the same as the residents in Jakarta the capital city who come from various provinces in Indonesia. Future study is needed to identify the relationship of ethnicity with labor pain, because in a previous study reported it stated that Bataknese are less tolerant of caesarean section pain than Javanese people (Desmawati & Christe, 2009).

Most of the women were accompanied by their husbands during antenatal care and by their mother during labor. This may be due to the husband working and labor support from a grandparent can impart good techniques to overcome any problems during the labor process based on their experience (Lowdermilk, Perry, & Cashion, 2010).

Labor Pain: Hypothesis 1

The mean scores of labor pain at the 1st, 2nd, and 3rd hour from cervical dilation of 3-4 cm were significantly lower after having received the program than before receiving the program. The Post Hoc Comparisons showed that the labor pain at the 1st, the 2nd, and the 3rd hour were significantly lower than the pre-test, also the labor pain at the 3rd hour was significantly lower than the 1st hour.

The researcher also wanted to test whether the program can reduce labor pain in the following hours including the transitional time (8-10 cm of cervical dilation). The results showed the labor pain at the 2nd hour was not significantly lower than the 1st hour and the labor pain at the 3rd hour was not significantly lower than the 2nd hour. It means that the CPNsIIIP program cannot significantly reduce labor pain at that time because severe pain is experienced in the transitional time (Ricci, 2009). This is the nature of the pain that will increase along the time until the baby is born (Hatfield, 2014; Neal, Lowe, Patrick, Cabbage, & Corwin, 2010). The mother who struggles against natural pain at that time deserves high appreciated from Allah to bestow upon her glorious and great rewards in the form of heaven (Muyassaro, 2012; Qomariyah, 2013).

The labor pain at the 3rd hour was significantly lower than the 1st hour. This suggests that the program should be conducted more than once at the end of active of labor, because the labor pain at the 2nd hour was not significantly lower than the 1st hour, and the labor pain at the 3rd hour was not significantly lower than the 2nd hour, however the labor pain at the 3rd hour was not significantly lower than the 1st hour (2 times). Islam teaches that one need to do something more than one time to get good results, for instance, when we are called by someone, sometimes the first call is not heard, the second call will be clearer, the third call would be perfect (HR Anas r.a). The program did not need to be repeated for in the early phase of active phase of labor.

Although, the analysis of the Post Hoc Test in the control group at the 1st, the 2nd, and the 3rd hour was significantly lower than the pre-test (similar with experimental group), the means for the groups in the homogeneous subsets in the

experimental group showed that labor pain decreased over time (mean scores from the pre-test, the 1st hour, the 2nd hour, the 3rd hour = 87.19, 81.17, 78.43, 79.31, respectively), but was not significantly decreased at the 1st hour, the 2nd hour and the 3rd hour. Whilst, the means for the groups in the homogeneous subsets in the control group showed that labor pain significantly increased over time (mean scores from the pre-test, the 1st hourr, the 2nd hour, the 3rd hour = 86.38, 88.95, 90.33, 91.42, respectively). It demonstrated high levels of labor pain over time in the control group, and low levels of labor pain over time in the experimental group. These findings were supported by the results of the independent *t*-test in hypothesis 2.

Labor Pain: Hypothesis 2

The mean scores of labor pain at the 1st, the 2nd, and the 3rd hour from cervical dilation of 3-4 cm in primiparous women who received the program were significant lower than those who received the usual care only (control group).

Linked to that, this CPNsIIIP program is a nursing program based on Islamic Philosophy, Holistic Nursing Theory, and labor support from family fits well for Muslim women in childbirth naturally due to the focus on the interconnectedness of the body (physical), mind (psychological), social-cultural, and spiritual aspect to meet the needs of the whole person to improve health and increase healing (Dossey, 2008; Dossey & Keegan, 2013; Schlitz & Valentina, 2013). The physical dimension relates to the anatomical and physiological changes during pregnancy and childbirth to meet the needs of the body of the pregnant women and during childbirth (Neke, 2008; Potter & Perry, 2011).

In order to meet the physical need of women during pregnancy and giving birth, this study used several nursing interventions such as stroking, breathing,

and positioning. The stroking can stimulate large nerve endings and ‘close the gate’, so that nociceptive firings are not sent to the brain. Breathing can also inhibit the nociceptor afferents to the spinal cord and the brain which relieves labor pain. An upright position can increase the release of oxytocin causing uterine contractions to work more effectively and shorten the labor time (Gizzo, et al., 2014; Gupta, Hofmeyr & Shehmar, 2012). Islamic praying to meet the spiritual need of the women can be a distraction which acts on the brain to project directly to ‘close the gate” and inhibit nociceptor afferents to the brain. A diversion by focusing on Allah (Islamic praying) and on the uterine fundus by stroking and breathing can help provide relaxation and help stimulate an increase in the endorphin levels that inhibit gamma-aminobutyric acid (GABA) in the central nervous system (CNS). The diversion and stroking can produce dopamine, serotonin, and melatonin which can change the behavioral state and bring about pleasure and calmness in order to decrease the pain and increase pain coping behaviors (Liou, et al., 2010; Sprouse-Blum, Smith, Sugai, & Parsa, 2010)

Furthermore, *ruqyah* prayer as part of recommended praying in Islam is the process of curing and healing a disease, such as mental, spiritual, moral or physical pain by using the reading of the verses of the Qur'an and the hadith of the Prophet Muhammad (*saw*). Narrated from 'Uthman ibn Abi al-'Ash ats-Tsaqafi regarding *ruqyah* that he said, "I have come to the Muhammad (saw) and complained about a disease that almost suffered me. So he said to me, "put your hands on your sick body, then recite:" In the name of Allah (7 times) I take refuge in Allah and His nature from the evils of various diseases (will be better if verses of the Qur’an related certain diseases are added).'Uthman ibn Abi al-Ash continued, "So I do as Muhammad (saw) suggested, therefore Allah SWT eliminates the disease from me".

Because "From Ali bin Abi Talib told: Rasulullah (saw) said: "The best treatment is (with) the Qur'an." (HR. Ibnu Majah). Beside the Qur'an, the way of life of Prophet Muhammad saw (hadith) is also a guide in seeking treatment. The Prophet Muhammad saw when visiting his sick family, he wiped the patient's body with his right hand (*ruqyah syari'ah*) while saying "O Allah, the ruler of all human beings! Eliminate the pain, give them healing because You are the Healer, there is no healing but because of Your help; Healing that is not accompanied by other pain" (HR Bukhari & Muslim).

Moreover, labor support from the family during stroking, breathing, prayer and setting the position also craete positive effects for the women's feelings throughout pregnancy and labor, because the presence of family can reduce fear, anxiety, and pain (Neke, 2008). Family support, social traditions, cultural beliefs and values are also a part of the social-cultural dimension in Holistic Nursing theory (Drick, 2014; Neke, 2008). The family support during pregnancy and during the birth in this study are rooted in the traditional social backgrounds in Indonesia, and as most Indonesian people are Muslim (>85%), their culture cannot be separated from their spiritual factors, therefore the culture is congruent with the spiritual dimension.

In Islam the "woman" is a creature predetermined as an intermediary for the birth of human beings on this earth. The women experiences pregnancy, childbirth, and take care of and educate the children. The family is the receptacle, therefore marriage will form a family as the best way to multiply offspring (reproduce) and preserve human life on this earth. In this study, the presence of the family helped women to take an upright position, motivated the women to breath as taught by the nurse, they undertook stroking, praying together which resulted in the

women having confidence, reduced fear, and a sense of calmness during labor, as well as relieve from pain.

With regard to the spiritual dimension, the Holistic Nursing perspective places emphasis on the importance of it during pregnancy (Neke, 2008), because if the spiritual element is explored and an appropriate intervention is given, it can help reduce fear, anxiety, and pain, as well as increase safety, and the protection of the mother and her unborn baby (Crowther, 2014). The moment of birth is unique which cannot be separated from the spiritual aspect as the basis of cultures.

Although the Holistic Nursing Theory has universal aspects, there are the differences in philosophies, spiritual aspects, and cultures that are unique to each country that need to be considered. In Islam *hikmah* (shared wisdom) is the ability of a nurse to understand the secrets of the religious laws of their patients., as stated in the Quran; We strengthened his kingdom, and gave him wisdom and sound judgment in speech and decision (QS As-Shad, 38: 20). In that (night) is made distinct every affair of wisdom (QS Ad-Dukhan, 44: 4). *Hikmah* means doing something with 1) the perfection of knowledge and science, 2) the accuracy of the acts or deeds, and 3) wisdom in deciding cases or solving problems (phenomenon). Thus, a need to create something new in nursing which relates to the culture and spiritual aspect of the patient should exist.

Essentially, in the outline, Holistic Nursing is congruent with the philosophy of Islam, because Islam regulates human life in all aspects (holistic) based on the interrelationships of the body, the mind, and the spirit. Allah creates the human being's body, mind, and soul (QS Al-Hijr 15:28-30; QS As-Sajdah 32: 7-9). *Tauhidi* curriculum involves the entire human civilization which is holistic; whole

organs are intact in the body, mind, and soul. If the body is sick, the soul is not able to think and understand, and will fail to enjoy life. Conversely, if the *nafs* or soul is sick, the body cannot feel the pleasure of life. Mental illness (the soul is not calm) over time can become physical illness (Asmu'i, 2016). Islam regulates all body activity in a human life (*Sharia* = rules to act), beliefs or soul or spiritual behavior or faith (*Aqeedah*) and behavior or body behavior (*Akhlak*), therefore in all the activities of life there is prayer (*du'aa*) such as prayer (*du'aa*) before eating, prayer (*du'aa*) before sleeping, prayer (*du'aa*) before traveling, prayer (*du'aa*) before learning, prayer (*du'aa*) before entering a restroom, etc. including the prayer (*du'aa*) during pregnancy and labor.

The Islamic prayer used in this study was prayer (*du'aa*) *ruqyah syariah* which women actively use prayer during pregnancy and childbirth. This prayer is not the usual or common prayer performed by Muslims in all respects, as it uses verses from the Qu'ran and Hadis that are relevant to pregnancy and labor. These verses explain about the process of how Allah creates the human being from when it is in the womb until it is born. There are 14 verses of the prayer related to pregnant women and childbirth which are spread in different *juz* (chapters) and surah in the Qur'an. The 14 verses of *ruqyah* prayer from the Qur'an were used in this study to tell about the concept of the grandeur/majesty of creation of man by Allah. The women said that they got a sense of tranquility after reciting and contemplating on the meaning of the 14 verses.

The meaning of the 14 verses is described in the following: Allah created man from an extract of clay (because food comes from the ground), Allah forms the fetus from sperm and it is placed in the womb, Allah changes the sperm into

a clot of congealed blood, then of that clot become a fetus lump, which is then wrapped by bones, and then wrapped with flesh, then Allah developed creation it become human. Allah is the Best Creators. When Allah has fashioned a fetus (in due proportion) He breath the spirit into the fetus. It is Allah who forms human being in the wombs as He pleases. Allah made two sexes, male and/or female. Then Allah made you in pairs. No female gets pregnant and goes through childbirth, except with Allah's knowledge. Allah doth know what was conceived by every woman, what is less than perfect (disabled) and what is growing in the womb. Allah established the relationships of lineage and marriage. Allah creates you in your mother's womb, within three stages (three trimesters). Allah was most knowing of what is in the uterus and what is born by pregnant women. O Allah, grant us and our wives and offspring as comforter to our eyes and make us an example for the righteous. O Allah, make me and my descendants always perform/ establish the prayer, and please accept my prayer!. Then Allah eases the way for the infant birth (Allah makes ease during childbirth). Allah has brought you out of your mother's uterus in a state in which you do not know anything, and then Allah made for you hearing, vision and intellect that perhaps you would be grateful.

The researcher used these verses because of by remembering how Allah created things, including humans, in which the same thing cannot be done by humans, can make people surrender themselves to Allah. Islam (faith to Allah as the first of the True faith in Islam) suggests to human beings to remember their agreement with Allah when in the womb at 16-18 weeks of pregnancy "When Allah drew forth from the children of Adam from their loins their descendants, and made them testify concerning themselves, (saying): "Am I not your Lord/God (who cherishes and

sustains you)? “They said:” Yes! We do testify!” this, lest you should say on the Day of Judgment: “Of this we were never mindful” (QS Al-A’raf, 7: 172; Setiawati, 2015), and suggest to think about Allah’s creation, such as the sky, sun, stars, earth, mountains, sea, air, land, people, animals, plants, etc. and do not think about Allah’s substance or Allah’s matter (HR Ahmad & At-Thabrani). Just because you cannot see the air, does not mean you stop breathing. Just because you cannot see Allah, does not mean you stop believing. And on the earth are the signs of Allah greatness for those of assured faith, as also in your own selves. Will you not see? (Az-DZariyat, 51: 20-21). “Human who remember Allah everywhere; standing, sitting, and lying down, and contemplating the (wonders of) creation in the heavens and the earth, (with the saying); “Our Lord (O Allah)! Not for naught You (Allah) created all this! Glory to Allah! Give us salvation from the chastisement of the fire” (QS Ali Imran, 3:191). Thus, humans are suggested to contemplate the creation of Allah and pray whenever and wherever located.

In the current study, the prayer for pregnant women until birth and nonpharmacological pain management were given and conducted in antenatal care (32 weeks of pregnancy) as one of the childbirth preparation methods. The women conducted the breathing, stroking, Islamic praying, and positioning with family support during the first 3 hours of the active phase of labor, and the labor pain was measured at the pre-test and each time after the completion of the intervention (3 times). The statistical results showed that there were significant differences between the experimental group and the control group (table 6 and figure 7), and there were significant differences in the overall mean scores of labor pain between the

experimental and the control group. Also there were significant statistical differences over the four points of labor pain.

These findings were consistent with the previous studies conducted in the Middle East which found that reciting the Qur'an at least 30 times from the third trimester of pregnancy to normal labor significantly decreased labor pain at a cervical dilation of 3-5 cm, 5-8 cm, and 8-10 cm, but it did not significantly reduce pain at the second stage of labor. However the study only involved the reciting of the Qu'ran (all *of surah* in the Qur'an), and did not used holistic care. In addition, these studies were only conducted during pregnancy (not in labor) (Mohammaditabar, Rahnama, Kiani, & Heidari, 2012). The other research, just listening to the Qur'an (passive prayer) of *Surah Ar-Rahman* (78 verses/words) (Bayrami & Ebrahimipour, 2014), *Surah Al-Maryam* (98 verses/words) (Forouhari, Honarvaran, Masoomi, Robati, Zadeh, & Setayesh, 2011) during the active phase of labor only (not start from the pregnancy). In Indonesia, just listening to the Qur'an can reduce pain in women after a caesarean section (Hasto, 2014).

One study that used holistic care also showed similar results as this study. The women who chose active ways for coping with labor pain reported that the pain was significantly less in the transitional stages (8-10 cm cervical dilation) and not significantly different than at 3-4 cm of cervical dilation or at the second stage of labor. In that study, the researcher provided perinatal education at 16 weeks of pregnancy until the researcher accompanied the women into the labor room. At which time, the researcher gave a massage and assisted with positioning, walking, talking, acupressure, birth balls, counter-pressure, comforting, reassuring, and encouraging to use the active coping strategy and 30 minutes of relaxation (Firouzbakht, Nikpour,

Salmalian., Ledari, & Khafri, 2014). In another study, the women were free to use active coping strategies such as hope, praying, and motivational words. Another study suggested that labor pain was significantly reduced when it was suggested that the women breathe with a partner (Bonapace, Chaillet, Gaumond, Paul-Savoie, & Marchand, 2013) or have their attention distracted from the pain by performing substitute activities, such as prayer, and avoiding catastrophizing during labor (Kulesza-Brończyk, Dobrzycka, Glinska, & Terlikowski, 2013).

Studies in the Middle East reported that labor pain was significantly lower at the 3rd hour (about 8-10 cm of cervical dilation) which was different with this study. Our study showed that labor pain was not significantly lower at that time. This is possibly explained by the differences in race and ethnicity because labor pain is subjective and unique. All the factors which influenced labor pain, except age of the mother and time of birth, were controlled, i.e. parity, race and ethnicity (Indonesian only), fetus's weight, mother's weight/height ratio, and the mother's position during labor in the first stage of labor. Besides the above factors, the decreasing labor pain score in this study could be due to several items outlined below:

1. The first factor is related to knowledge (childbirth preparation)

In the CPNsIIIP program, participants in the experimental group received health teaching regarding nonpharmacological pain management (breathing, stroking, Islamic praying, and positioning with family support), also about the signs and symptoms of labor as preparation for birth. Adequate information was given relating to low fear, pain level during labor, and decreasing the need for an elective caesarean section (Aksoy, Aksoy, , Dostbil, Celik, & Ince, 2014). This finding is consistent with a previous study which stated that an expanding educational scope about labor

based on culture and belief systems help to get optimal pregnancy outcomes (Martin & Robb, 2013). Childbirth education will develop a mother's knowledge during pregnancy and childbirth, decrease fear and anxiety, eliminate medication during labor, improve coping strategies and maternal comfort during childbirth, as well as provide skills to cope with labor pain that aims at facilitating the process of natural childbirth (Firouzbakht, Nikpour, Salmalian, Ledari, & Khafri, 2013). Childbirth preparation for all pregnant women should occur in the antenatal period, allowing the woman to identify interventions to solve any problems they may have and to give them an opportunity to repeat the intervention and to manually practice it at home.

2. The second factor is related to physical interventions (breathing). Breathing and distraction help women to develop their own personal repertoire of coping strategies (Escott, Slade, & Spiby, 2009; Vargens, Silva, & Progianti, 2013). Breathing can reduce pain for women by activating descending inhibitory neurons that block afferent nociceptive nerves that originate in the substantia gelatinosa. This activity of closing the gate of spinal level then the brain will not interpret the impulse as painful (Melzack & Wall, 1996). Besides, breathing also relieves pain by improving blood flow and oxygenation of tissue (Jones et al., 2012).

Breathing techniques for childbirth comprise of 1). Slow-paced breathing is simple, 2). Modified-paced breathing needs more concentration, 3). Combining the technique between slow-paced breathing at the beginning and modified breathing at the end of a contraction, the more rapid respiration over the peak of a contraction, and 4). Pattern-paced breathing (pant-blow) like 3:1 pattern: breath, breath, breath, blow (as though gently blowing out a candle) to help at crowning, and the premature urge to push (Lowdermilk, Perry, Cashion, & Alden, 2015; Mc Kinney, James, Murray, Nelson,

and Ashwill, 2018; Medfort, Battersby, Evans, Marsh, & Walker, 2011).

3. The third factor is family involvement.

Women who are accompanied by their family tend to feel more confident, and have decreased levels of anxiety and fear (Safarzadeh et al., 2012). Stroking or touching a pregnant woman's belly can increase pain-coping behaviors when done by her family (Perry, Hockenberry, Lowdermilk, & Wilson, 2010). The results of this study are the opposite of an existing study which reported that there is no significant reduction in labor pain between women who are accompanied by their family during labor and women who did not have family support during the first stage of labor (Chunuan, Somsap, Pinjaroen, Thitimapong, Nangham, & Ongpalanupat, 2009).

From the literature reviewed, it has been found that family participation serves as social support for pregnant women when coping with labor pain (Bruggemann et al., 2007; Mullersdorf, Zander, & Eriksson, 2011). The more that people join in praying for someone, the sooner their requests were granted by God (Muyassaro, 2012; Qomariyah, 2013). In Indonesian culture, praying together has been become a habit in communities. It indicates the importance of the role of the family, spiritual aspects and culture in the provision of caring during labor.

4. The fourth factor is related to beliefs and the spiritual aspect.

When laboring women practice Islamic praying (*ruqyah* with prayer and surrendering oneself to Allah *SWT*) as *ruqyah syar'iyyah* (Akhmad, 2012), this distracts from the pain with a focus on Allah, which acts on the brain to project directly to "close the gate", the autonomic nervous system is less stimulated, and this in turn decreases pain and physiological responses (Faradisi, 2012; Mander, 2011).

Islamic praying can also inhibit nociceptor afferents to the spinal cord and brain (Faradisi, 2012; Jones et al., 2012; Mander 2011). On the other hand, concentration by focusing on God (Allah), triggers the brain to produce large quantities of the pleasure-causing neuro-chemicals, like endorphins (as measured by EEG brainwave biofeedback machines), slower brain wave activity (marked by an increase in alpha and theta activity), induces a hypo metabolic state, reduces heart rate, drops the blood pressure level, increases peripheral warming, and slows breathing which can relieve pain, reduce stress, and give pleasure and a feeling of well-being and calm (Jantos & Kiat, 2007). Endorphins released in the hypothalamus can increase serotonin and the production of the neuro-hormone melatonin which may contribute to a reduction in pain (Field, 2008; Jones et al., 2012). Thus, *ruqyah* prayer, surrendering oneself and focusing on Allah in this study can distract from pain by making the large fibers reach the brain and directly close the gate, and also inhibit nociceptor from ascending to the spinal cord and brain. While the women are concentrating on Allah, endogenous opioids are released which can relieve pain.

Although according to the AHNA which defines holism as the harmonious balance of body, mind and spirit in an ever changing environment, spirituality is not the central aspect of balance, and spiritual well-being does not have priority over the well-being of the body and mind (all components have the same level, and do not dominate each other) (AHNA, 2009; Dossey, 2013). However, in Islam the spiritual wellness is a pre-requisite for balancing health, body and mind (Peter, 2007; Sadat Hoseini et al., 2013; Santoso, 2013). Although physical interventions can reduce pain like using breathing techniques, jaw relaxation, the application of cold packs, catastroping, compresses etc. (Jones et al, 2012), another

study reported that the passive type of praying has a robust effect in stopping pain compared to that of catastroping (Meints & Heirth, 2015). The results of this study were relevant to other studies that investigated dealing with passive prayer during pregnancy and childbirth, and among these other studies it was reported that prayer will allow women to proceed with minimal fear and pain, and will create the best situation for women and their unborn child (TorkZahrani, 2008).

Pain-coping behaviors: Hypothesis 3

Linked to the pain-coping behaviors, the Repeated Measures of ANOVA showed that the participants in the experimental group had significantly higher pain-coping behaviors after participating in the CPNsIIIP program than before participating in the program ($p<.05$) (table 8). There were significant effects of the CPNsIIIP program on pain-coping behaviors at each time point. Islam teach that doing something 3 times perfects behaviors, for example, if we are washing once may be still there is an area we misssed, if we wash twice we will wash the missing area, and if we wash 3 times, this makes sure all the area is washed. This is also congruent with the Concentration theory in chemistry science in that if we have 3 liters of water, so a material will be clear if it is washed 3 times by using 1 liter of water in total, perspectively, compared with only once with 1 liter of water (even once with 3 liters of water) (Urip.wordpress.com). In the Islamic tenet there are several reasons of repeateing 3 times based on the Qur'an and Hadist as follows: 1) *ihtimam* (attention), 2) *Takhrish* (spirit or fighting), 3) Repetitive magic power, 4) clearer, 5) more understanding, 6) more action, 7) focus or specific, 8) consistent, continuous, 9) easy to memorize, etc. Prophet Muhammad said "The existence of the Prophet (s) if he says a sentence is repeated three times to be understood by the listener*"* (HR Anas

r.a). In addition, a human says "*Ya Rab* (O Allah) 3 times" until God (Allah) sees and fulfils your wish (QS Al Imran; 192-195).

Pain-coping behaviors: Hypothesis 4

The mean scores of pain-coping behaviors at all three time points were significantly lower ($p<.05$) in the experimental group than in the control group (Table 7 and Figure 8). Increasing total pain-coping behaviors can be seen from the sub-variable of pain-coping behaviors; vocalization, body movement, breathing control, facial expressions, and communication (Appendix C). The CPNsIIIP program can make women from crying out and sobbing to sighing, moaning, and talking in normal tones or no sound in the experimental group compared to the control group.

Using the program demonstrated that there was an increase in the score of pain-coping behaviors over time in the experimental group; which means that the program especially Islamic praying can help women to experience positive behaviors (good behaviors in vocalization, body movement, breathing control, facial expression, and communication).

In this study, patients were encouraged to perform regular prayer activity and stroking for at least 30 minutes/day at home from 32 weeks of pregnancy until they entered the labor room give birth. Similarly, the previous study found that reciting the Qur'an (all of surah in the Qur'an) during pregnancy can create positive behaviors when facing labor pain (Mohammaditabar, Rahnama, Kiani, & Heidari, 2012). The factors relating to pain-coping behaviors have been controlled and these included marital status (married), ethnic origin of Indonesia, prior coping experience (only primiparous), women's distress, levels of concern for self and the baby (did not have complications), and antenatal education in preparatory childbirth. Pregnant

women were assisted in developing their own personal coping strategies, with a broadening of the range of their coping strategies (Escott, Slade, & Spiby, 2009). Labor pain, the mother's age and time of birth cannot be controlled by the same reasons.

In addition, the increasing pain-coping behaviors score in this study could be due to several items as outlined below.

1. The first factor is related to knowledge (childbirth preparation)

Fuller understanding of Holistic Nursing (physical, psychological, spiritual, and socio-cultural needs) during childbirth and how to implement it should occur in the prenatal period namely the CP (Crowther, 2014), because, if women receive formal training in coping strategies for labor, for example pain management in the antenatal class, they will make use of those coping strategies in labor. However, when women do not receive formal training in coping strategies for labor, they will use a wide range of coping strategies during labor that may not be so effective (Escott, Slade, & Spiby, 2009). Childbirth education will develop a mother's knowledge during pregnancy and childbirth, decrease fear and anxiety, eliminate the need for medication during labor, and improve coping strategies (Firouzbakht, Nikpour, Salmalian, Ledari, & Khafri, 2013). The childbirth preparation informed the mpthers about what would happen during pregnancy and childbirth, gave the mother confidence, and a sense of self-belief as well as increase her pain-coping behaviors.

2. Physical intervention factor

The stroking intervention involved putting the hands on the pregnant woman's belly, beginning at the sides of the peak of the belly and slowly moving the hands into the middle and to both of sides. The hands were gradually moved down

towards the pubic bone, then along each side of the groin and back up to each side using the flats of the hands, moving across and around the belly in a "love/heart (♥)" shape (Bourne, 2014; Semper, 2011). Stroking can stimulate large nerve endings closing the gate. Stroking can stimulate the central nervous system pathway that blocks pain signals by increasing the input of large fibers. The substances evoked by the stimuli of massage, stroking, rubbing or touching are regulated in the spinal cord by nerve cells inhibiting the further incoming pain signals to the brain (Gallo et al., 2013; Hajiamini, Masoud, Ebadi, Mahboubh, & Matin, 2012; Melzack, 1990).

Stroking potentially increases serotonin levels, the stimulation of endorphin release and the circulation with a consequent increased oxygen supply for the tissues. Stroking can release oxytocin into the circulation and the part of the brain that influences the vagal nerve, and then releases several hormones that have beneficial clinical effects for the body (Adams, 2012; Field, 2008; Klaikham, Yusamran, Thananowan, & Phahuwatanakorn, 2013). Furthermore, the diversion and stroking can produce dopamine, serotonin, and melatonin which can change the behavioral state and bring about pleasure and calmness in order to decrease the pain and increase pain-coping behaviors (Liou, Hsieh. Hsieh, Chen, Wang, Chen, & Lee, 2010; Sprouse-Blum, Smith, Sugai, & Parsa, 2010).

3. Family involvement factor

Family support was used as a social support to enhance the self-support of women in labor (Mullersdorf, Zander, & Eriksson, 2011), increase confidence, decrease fear and anxiety, which resulted in a sedative effect that decreased pain, and increased pain-coping behaviors if the stroking on the pregnant women's belly was done by her family (Perry et al, 2010; Sarfarzadeh et al, 2012).

4. Spiritual factor

Prayer/hope is one of the most frequently used coping strategies in labor pain during the first stage of labor and the second stage of labor (Kulesza-Brończyk, Dobrzycka, Glinska & Terlikowski, 2013). Praying in Islam is a realization from *tauhid* behaviors inducing; good moral ethics, positive thinking to Allah, and decreases arrogance (QS Ghafir: 60). Active praying is the harmony between heart, mind, speech, and action (blend of intent, planning, statement, and action). Active praying requires attitude wisdom, inner meticulousness, patience, fortitude; not dictating to Allah, good prejudice to Allah and surrendering oneself to Allah. Prophet Muhammad (pbuh) said that Allah saying in *hadith* qudsi "I depend on my servant's supposition to Me, I with them when they are praying to Me" (Hadith Qudsi). These attitudes were reflected in the vocalization, body movements, breathing control, facial expressions, and communication of the participants in this study.

A listening to the Quran program (passive prayer) can help mothers actively control childbirth (increase positive coping) during childbirth (Mirbagher & Ranjbar, 2010; Bayrami & Ebrahimipour, 2014; Forouhari, Honarvaran, Masoomi, Robati, Zadeh, & Setayesh, 2011; Hasto, 2014; Mohammaditabar, Rahnama, Kiani, & Heidari, 2012). Whereas, active prayer either in silent or spoken (low voice) form showed increased cortical activity and lower beta frequencies, which seem to show as an alert and attentive communication on God (Jantos & Kian, 2007), only focusing on Allah, resulted forgetting about other things such as the pain sensation and this in turn appeared as a positive behavior.

Duration of labor: Hypothesis 5.

Hypothesis 7 of the present study stated that the mean scores of duration of labor (in minutes) at the active phase of labor for the experimental group was shorter. The independent *t*-test showed the patients in the experimental group, after participating the CPNsIIIP program, were significantly different in the duration of the active phase of labor (Table 11, t=7.51, $p < .01$).. The results were similar to the previous study (just listening to the Qur'an) which found that the duration of the active phase of labor of the participants in the experimental group was statistically significantly shorter compared to the participants in the control group (Bayrami & Ebrahimipour, 2014; Samieizadeh Toosi, Sereshti, Dashipur, Mohammadinia, & Arzani, 2011; Shakeri, Molae, & Choopani, 2014). This is also consistent with the previous study that found that patients who were immobilized and in a supine position had lower natural levels of oxytocin circulating in the blood, their uterine contractions were worse, and more painful, delivery time was extended (Gupta, Hofmeyr & Shemar, 2012).

Other factors linked to the duration of labor that were also controlled were the size of a women's pelvis (only participants with normal pelvis sizes were used in the study), the magnitude of the fetus in the uterus (only 2500 to 4000 grams), husband or family support, knowledge about the birth process, and upright positions. However, the mother's age cannot be controlled because of the limited number of primiparous women. Also it was not certain whether the need for a certain number of hours of sleep during pregnancy is was fulfilled, but when the participants were asked about it, they said that their duration of sleep during pregnancy was normal and they did not experience disrupted sleep. There are other factors that contributed to the

duration of labor in the experimental group which showed a significant difference after receiving the CPNsIIIP program and these are:

1. Childbirth preparation

Childbirth education classes are very important in order to provide information to pregnant women and their families as part of the preparation for birth (Hardie, Horsburgh, & Key, 2014). Through health education, pregnant women can make choices that are filtered through belief systems. Thus, pregnant women who seek out information about childbirth preparation are often more confident, have good coping strategies and are ready to cope with any problems during the intra-natal period (Martin, 2012). Coping strategies can assist in the pain management process during labor and the confidence in one's ability to cope with problems during labor accounts for approximately one-third of labor pain levels and the duration of labor (Gau, Chang, Tian & Lin, 2011).

2. Physical intervention (upright positions)

Mobility and using positions by effectively using gravity can shorten the duration of labor. Gravity can promote the descent of the fetus and make uterine contractions stronger and more efficient in effacing and dilating the cervix resulting in shortening the duration of the active phase of labor (Hodnett, Gates, Hofmeyr, & Sakala, 2013; Vargens, Silva, & Progianti, 2013). Recommending and supporting women to set specific positions like gravity positioning (upright & side lying) for specific situations, and mobilization can increase the release of natural levels of oxytocin to circulate in the blood, causing uterine contractions to work more effectively and shorten the delivery time (Gupta, Sood, Hofmeyr & Vogel, 2017; Hodnett, Gates, Hofmeyr, & Sakala, 2007). Therefore, women with uncomplicated

pregnancies should be suggested or encouraged to move and to deliver in upright positions, because the gravity of the upright positions increases the size diameters of the pelvis, reduces aorta caval compression to make more effective contractions, causes a decline of the extreme cephalic, and reduces pressure on the sacrum, positively significant for reducing labor pain, rotating from the occiput posterior (OP) to the occiput anterior (OA) which benefits in shortening the duration of labor (Gizzo, Di Gangi, Noventa, Bacile, Zambon, & Nardelli, 2014).

In addition, in the first stage of labor, breathing is used to increase abdominal pressure and thereby assisting in expelling the fetus, and relaxing the pudendal muscles to prevent precipitate expulsion of the fetal head, therefore resulting in shorter labor (Vargens, Silva, & Progianti, 2013). In one study not only was positioning and breathing techniques used, the women also received massaging or stroking for at least 30 minutes on the under belly, upper thighs, sacral region, shoulders and legs during labor which significantly reduced the duration of labor (the first and second stages of labor) (Bol-bol-Haghighi, Masoumi, & Kazemi, 2016). In the current study, laboring woman using breathing techniques during uterine contractions also do stroking on the belly which could improve blood flow and the oxygenation of tissues, therefore producing less labor pain and a shorter duration of the active phase of labor.

Position and movement during the first stage of labor is related to force/gravity which can shorten the progress of labor (Vargen, Silva, & Progianti, 2013). In upright positions, uterine contractions are then generally stronger and more efficient in effacing and dilating the cervix, therefore resulting in shorter labor in the first stage of labor (Perry, Hockenberry, Lowdermilk, & Wilson, 2010). In addition,

non-invasive care technologies, like using massaging with essential oils about 30 minutes at each stage of labor, controlled breathing and positioning or movement, benefit pain relief and lower the duration of the active phase of labor (Mortazavi, Khaki, Moradi, Heidari, & Rahimparvar, 2012; Vargens, Silva, & Progianti, 2013). The upright position during early labor but later semi recumbent or side-lying position with pillow support was used in this study.

3. Family involvement.

Anxiety (because of unfamiliar personnel, lack of privacy, environmental influences, high rates of intervention, etc.) during labor can increase the duration of the active phase of labor causing high levels of the stress hormone epinephrine in the blood and decrease uterine contractility (Manizheh & Leila, 2009). The women who are accompanied by other women, their mother, husbands, female relatives, etc. during labor might be able to buffer such stressors resulting in a shorter labor (Hodnett, Gates, Hofmeyr, & Sakala, 2013). Family participation can reduce the time of labor (Safarzadeh et al., 2012). Whilst in Thailand, there is no effect in the duration of the first stage of labor between women who are accompanied by their family during labor and women who are not accompanied by their family (Chunuan, Somsap, Pinjaroen, Thitimapong, Nangham, & Ongpalanupat, 2009).

4. Spirituality

Successful praying was conducted by the participants in the experimental group which was highly dependent on intention. The importance of the implementation of intentions in the antenatal period is very beneficial in applying an intervention during birth (Escott, Slade, & Spiby, 2009). The intention was also affected by benefit. The benefits of Islamic prayer such as, women have felt hope

from praying, felt a mental clarity, comfort, calmness, tranquility, therefore praying can increase pain-coping behaviors, assist in a smooth in delivery without severe pain. Prayer has a positive relationship with physical health (Yucel, 2010)

Overall, the findings of this study indicated that the effectiveness of the CPNsIIIP program may reduce labor pain, increase pain-coping behaviors, and shorten the duration of the active phase of labor. The accomplishment of the outcomes in this study could be due to additional factors which are:

1. Firstly, the theoretical strategy of childbirth preparation in the CPNsIIIP program. The childbirth preparation in this study was to promote the natural birth approach making use of non-pharmacological techniques and continuous family support. A nurse must build trust with the mother to prepare her for normal labor, support and encourage her without using pharmacological pain relief (Leap, Sandall, Buckland, & Huber, 2010). Childbirth education classes are very important in order to provide information to pregnant women and their families as part of the preparation for birth (Hardie, Horsburgh, & Key, 2014).

To prevent attrition drop out without inducing threats to social desirability, thus in this study, the researcher built trustful relationship with the pregnant women and their families; starting with greetings. Prophet Muhammad reiterated God's message when he said, "You will not enter Paradise until you believe, and you will not believe until you love one another. Shall I tell you about something which, if you do it, will make you love one another? Greet each other with Salam" (HR Muslim). After the greeting, the researcher introduce herself and asked about and responded to the needs of the participants, then explained the objective of the program, the benefits of the program, the compositions of the program, the

mechanism of breathing, stroking, praying and positioning, the steps of the CPNsIIIP program (in the antenatal care and in the delivery room), provided a question and answer session, concluded the childbirth education session, then finished with "*Alhamdulillahirobbil 'alamiin* (all praises be to Allah, Lord of the Worlds) together. A believer for if he has an occasion to feel delight, he thanks Allah, thus there is a good for him in it, and if he gets into trouble (endures into patiently), there is good for him in it." (Hadith Muslim).The only thing that Allah asks in return is your gratitude to Him. Make it a habit to say "*Alhamdulillah*" at every good news or at every good turn in your life. And remember when your Lord proclaimed, "If you are grateful, I will surely increase you in favour. But if you deny indeed, my punishment is severe (QS Ibrahim: 7).

2. Secondly, the pregnant women practiced praying and stroking at home for at least 30 minutes every day after receiving the childbirth education. This method is more effective to accustoming an action and improves the positive behaviors. Daily phone call follow-ups and face to face follow-up when the pregnant women came for regular check-up of her pregnancy at hospital or CHC were undertaken. Throughout participating in the program, the participants in the experimental group received a daily phone call follow-up and at least two face to face follow ups in the hospital or CHC. They received some retraining if they were conducting the practice of praying, stroking, and positioning incorrectly at home. In addition, the researcher motivated and facilitated the participants to continue the program for maintaining (or improving) the exercise in daily life. Moreover, the researcher gave praise and reinforcement to the participants by affirmations. This

method influenced participant's confidence, motivation and expectations to maintain the positive behaviors.

This finding was similar with a previous study which confirmed that people with a good level of confidence tend to be active in regular physical exercise (Hutchins, Drolet, & Ogletree, 2010). Thus, confidence, motivation, and expectations are important to make women actively exercise.

3. Thirdly, sincerity in submission to Allah.

After praying the fourteen verses from the Qur'an (concept of majesty of creation of humans by Allah), the participant surrendered oneself on Allah by saying "*Laahaulawala quwwata illa billahil 'aliyul adziim" (*A person still cannot do anything without the help of Allah).The prophet Muhammad peace be upon him said, "Whoever reads it, an angel descends to give good health/brings a cure for that person" (HR Tirmizi). And another says "if recited one will be protected from 70 afflictions/hardships/difficulties in life, even a disease, and protected from punishments/afflictions/suffering (Hadith Mafhoom ul hadith). These findings indicated that surrendering oneself to Allah is considered as a strong factor influencing the increasing pain-coping behaviors, reducing labor pain and leading to birthing smoothly.

In conclusion, religion is the main aspect that shapes the spiritual and cultural aspects. Muslims believe that health, illness, birth, life and death all come from Allah. Thus, the Muslim women do not perceive labor pain and illness as a form of punishment but rather as a way of atonement for one's sins and precisely giving birth is glorious (*jihad*). However, Muslims are encouraged to seek care or treatment and prayer therapy during pain and illness. The role of the nurse is to assist the

patients to fulfill holistic ends and spiritual development is more important than physical care only (Hoseini, Alhani, Panah, & Behjatpour, 2013). Thus, a combination of physical, psychological, cultural aspects, spiritual beliefs and myths in this study, can assist a woman to survive with pain in labor, increase pain-coping behaviors, and shorten the duration of labor.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

The CPNsIIIP program was evaluated by experimental design to reduce labor pain, pain-coping behaviors and duration of labor, after that, in this chapter the researcher will address the conclusion of the study's results, strengths, limitations, and recommendations for further study.

Conclusion of the Study

The study used the experimental design to test the effect of CPNsIIIP program on labor pain, pain-coping behaviors and duration of labor. The program was conducted from July 2016 to January 2017. The number of women was 101 (50 women for experimental group and 51 women for control group) for completing the study. The final of women after checked outliers was 83. The results suggesting that the baseline demographic and obstetric data of both groups were similar. Statistically, there was no significant difference in demographic data between the experimental (41 women) and control group (42 women).

Related to the main hypotheses, a repeated measure ANOVA was used to investigate the between-subject effects both of groups of labor pain and pain-coping behaviors, the change in mean scores of labor pain and pain-coping behaviors over four time points, and interaction between treatment and times. An independent *t*-test was used to investigate the differences of mean scores of labor pain, pain-coping behaviors, and duration of labor between the two groups. The conclusions of the results of the main hypotheses are as follow:

1. The mean scores of labor pain at 1st, 2nd, and 3rd hour from cervical dilation of 3-4 cm after the CPNsIIIP program were significant lower than before receiving the program. The mean scores of labor pain at the 1st, the 2nd, and the 3rd hour from cervical dilation of 3-4 cm were significantly lower than the pre-test. Also the labor pain at the 3rd hour was significantly lower than the 1st hour. The mean scores of labor pain at the 1st, the 2nd, and the 3rd hour from cervical dilation of 3-4 cm in the experimental group were significant lower compared the control group. This supported the corresponding hypotheses.

2.. The mean scores of pain-coping behaviors at the 1st, the 2nd, and the 3rd hour from cervical dilation of 3-4 cm after received the CPNsIIIP program were significantly higher than before receiving the program. The program significantly increased pain-coping behaviors in each time. The mean scores of pain-coping behaviors showed significant differences (higher) at all three times in the experimental group and the control group. This supported the corresponding hypotheses as well

3. The mean score of duration of labor (in minutes) at the active phase of the first stage of labor for the experimental group was shorter than the control group. Also, this supported the corresponding hypotheses.

Strengths and Limitation

Strengths.

There are several strengths of this study include:

Firstly, the foundation or theoretical framework of the study was based on Islamic Philosophy, Holistic Nursing Theory, and Labor support from family. The theory of Holistic Nursing is congruent with Islamic philosophy and culturally fit

Indonesian Muslim women about Islamic praying, because both of them meet all human needs holistically physiological, psychological, social, cultural, and spiritual. The researcher was able to develop the interventions program based on those factors for pregnant women and women in labor such as breathing, stroking, positioning and integrating Islamic praying. This interventions program made it possible for women to harmonize in mind, body, and spirit during pregnancy and labor. It was really fit with the culture and Muslim women. Likewise, the Gate Control Theory, Endorphins Releasing, and force-gravity helped to explain mechanism how to the interventions program (breathing, stroking, positioning, and Islamic praying) can reduce pain, increase pain-coping behavior, and shorten the duration of labor.

Secondly, the study displayed good controls of confounding variables such as parity, history of menstrual difficulties, race and ethnic Indonesian only, fetus's weight, mother's weight/height ratio, size of the pelvis, cephalic presentation, not complications both of mother and fetal, support from family, mother's position during labor in first stage of labor had been controlled, except age of mother and time of birth. Besides only the principal investigator conducted health teaching of childbirth education about non-pharmacological pain management (breathing, stroking, positioning, and Islamic praying) for pregnant women and their family at hospital and community health center. This is for controlled the same content in order to minimize threats of validity.

Thirdly, this study using the methodological development of CPNsIIIP protocol is simple and easy to apply, effective, and safely in processes (not harm for mother and her fetal). This instrument already reviewed from 7 experts; 3 experts

from faculty of nursing-PSU in Obstetric Gynecology Department, 2 experts from Indonesia in maternity midwife field, and 2 experts from Indonesia in Islamic area.

Limitations.

Although there was some of strength in this study, however several limitations may have affected the study findings like the study just can reduce labor pain at 1st hour of active phase of labor, but it was still not able to reduce severe labor pain at transitional time of active phase of labor about 8-10 cm of cervical dilation. Besides, the present program was only devised for primiparous Muslim women with involve their family. This limitation would have limited application for pimiparous Muslim women.

The results of test-retest of VAS = .69, actually it is not including low as labor pain increases with increasing cervical dilation and strength of contractions until newborn, making it difficult to obtain the same test-retest results from time to time, however small sample size (n = 10) may be affect it.

Although, strict eligibility criteria is no problem in Indonesia, because most of Indonesian women are Muslim, married, from 125 million Indonesian people, it predominantly female, and Pamulang is one of congested city like Jakarta, many first time mothers gave birth in the BBH hospital and places of childbirth under its supervision. However, a factor that may have influenced difficulty in recruitment was the extensive time commitment required of the pregnant women (from 32 weeks of pregnancy until labor). Associated with it, follow-up limitation for practicing at home every day appears to be a common limitation in investigate the use of exercise for pregnant women after receive health teaching until labor, because, the researcher only met them average twice when they check- up their pregnancy (there were several

pregnant women more twice). Besides, the researcher used phone call once every day to monitor their exercise, ideally should to meet them (home visit) every day until birth.

Indeed the participants in this study were single pregnancy, however the CPNsIIIP program might be gave many benefits when conducted for twin pregnancy by normal labor and is likely can be also applied in high risk women with normal labor by convincing of women and their families that the CPNsIIIP program can reduce labor pain, increase pain-coping behaviors, and shorten duration of labor without harm for mother and fetal.

Recommendations of the Study

The finding of this study would be useful for nursing in the all of areas (nursing theory, nursing practice, education, and management or health care policy), and potential to contribute to the development of nursing sciences and knowledge as described below:

Nursing theory.

The CPNsIIIP program is provided to tackle it like reduce pain level, increase pain-coping behaviors, and shorten duration of active phase of labor. This program supports the theory of Holistic Nursing (Dossey, 2013) which all physical, psychological, culturally and spiritual factors are very important for reducing labor pain, improving pain-coping behaviors, and shortening duration of labor.

The CPNsIIIP program is one of new program for women in labor which included several interventions like breathing, stroking, positioning, Islamic praying by family's involvement. Prayer is the most popular alternative form of therapy and should be recognized as an essential resource for coping with pain, even

in Islam, praying is priority therapy which addresses the holistic approaches, because spiritual wellness is a pre-requisite for balancing of health, body and mind. Spiritual is shown to have a profound effect on life. It can effect enduring cultural, physical, psychological, mental, and emotional change. Holistic Nursing Theory is congruent with Islamic Philosophy; just only, in the Holistic Nursing all dimensions have the same level, whereas in the Islamic Philosophy, spiritual dimension is high level without ignoring the other dimensions. Therefore, the Islamic Philosophy and Holistic Nursing Theory provide an appropriate foundation or framework for guiding nursing holistic care for pregnancy and childbearing women.

Thus, the findings of the study had corroborant the nursing theory especially Holistic Nursing Theory. The Holistic Nursing Theory can guide the pain due to labor pain is holistic, the women is also holistic, and Islamic Philosophy is also holistic, therefore worthy to applied for Muslim women with involve their family in praying, stroking, breathing and positioning during give birth.

Nursing practice.

The findings of the study contribute in providing the evidence related the CPNsIIIP program on labor pain, pain-coping behaviors, and duration of labor for primiparous women. The program comprised of clear intervention guidelines and methods to be applied by nurse midwifery to assist primiparous women during labor in decreasing pain, increasing pain-coping behaviors and shortening duration of labor. The interventions in the program had been developed by using nursing interventions like breathing; stroking, positioning and integrating Islamic praying (*ruqyah* prayer) with involve their family. Its components can be combined safely and relatively easy to use for 30-45 minutes at least three times during 3 first hours of active phase of

labor. As many as 14 verses of the Quran regarding concept how the human being is created by Allah have used in this study with active praying. Prayer holds an important role in the life and became more important during pregnancy and gave birth. Based on the results and the principal investigator observed during the test sessions that women appear to be high score of pain-coping behaviors, lower pain level, and shorten duration of active phase of labor after participating in the prayer, stroking, breathing and positioning with family involvement.

Focusing the spiritual and religious needs of the Muslim women may aid the birth process smoothly. This study will contribute important of role of prayer in Muslim women during pregnancy and labor beside physical and psychological factors. The CPNsIIIP program can be applied to primiparous women in all of antenatal clinic, daily practice at home, and delivery room whose childbirth normally. Thus, this program can be used by nurses as a comprehensive guideline in their daily practices in order to improve the quality of care in the antenatal clinic and delivery room. Furthermore for nursing practice, encourages all of caretaker staff (obstetric gynecology staff) to consider the healing power of prayer and integrating with stroking, breathing and positioning with involving their family.

Nursing education.

The CPNsIIIP program as a new program in the maternity nursing area should be introduced into bachelor degree's curricula and may be included in a maternity nursing course, emphasizing more for Master's degree, especially for maternity nursing specialization. The nurse educators should encourage nursing students to have sufficient and appropriate knowledge regarding non-pharmacological

labor pain management based on holistic care, culture and spiritual background of women before the students enter a clinical practice experiment.

Health care policy.

Nursing management in the hospital should consider the CPNsIIIP program as a necessary program in order to increase nursing practice in the maternity nursing area for reducing pain, increasing pain-coping behaviors, and shortening the duration of labor. If it is so difficult to promote a new tool for health care policy makers in the ministry of health of Indonesia, at least CPNsIIIP program can be useful for health care practice in the hospital, community health center, and all clinical practice that can give birth in Indonesia, therefore, the results of the study can be used as supportive data pregnant women and childbirth in Indonesia.

Future research.

The experimental study about effect of CPNsIIIP program on labor pain, pain-coping behaviors, and duration of labor for primiparous women can endorse and help the development of nursing research especially in maternity nursing area. The findings of the study can facilitate the other research like as a previous study in determining sample size, modifying of technical like home visit before childbirth, or creating a program in experimental design or other quantitative research, and also in qualitative research even mix method study.

This program significantly relief the labor pain in the experimental group compared with control group and after receiving the program compare with before receiving the program. However the program just can reduce labor pain at 1st hour after 3-4 cm of cervical dilation, it still have limitation that cannot reduce labor pain at severe pain near to baby born (transitional time about 8-10 cm), therefore the

future research is recommended to develop or create new program to decrease severe labor pain at transitional time. The future research is also recommended to examine the CPNsIIIP program to other group such as twin pregnancy and multiparous women with normal labor in order to relief pain level, increase pain-coping behaviors, and prevent length of duration of labor. Even, advised to test this program for mothers in prolonged labor, and mother with high risk such as diabetes and asthma with per-vagina labor.

In addition, this research provides ideas for future study based on Islamic Philosophy, Holistic Nursing Theory, and Labor Support from family for pregnant women and women in labor. Those theories can be used to design and develop an appropriate program and strategies for pregnant women and childbirth Muslim women even with different background in culture, religion, socioeconomic, ethnic, etc. Therefore, future study could be taken into account to determine the effect of demographic factors such as age, ethnic, job, education, and socioeconomic on labor pain, pain-coping behaviors, and duration of labor. Further investigations in large population highly recommended to replicating the beneficial results of the study and used by more diverse Muslim and non-Muslim women from other countries in the world.

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APPENDIX A
Informed Consent Form

I am Desmawati, a Ph.D at Prince of Songkla University in Thailand is conducting the study. I ask you to participate in a research study of the CPNsIIIP program from 32 weeks of pregnancy until labor. I select you as a possible participant because you are a primiparous Muslim women and meet the preliminary criteria of the study. I ask that you read this form and ask any questions if you have, before agreeing to join in the study.

Background Information:

The aim of the study is to learn about several responses to breathing, positioning, stroking, integrating Islamic praying with involvement of the family. If you decide to participate, I will ask you some general questions, such as, your age, ethnic, education, occupation, income and some information regarding to your pregnancy. In the antenatal period, I will use randomly assign you to receive program. I will give health education about the breathing, positioning, stroking, Islamic praying from 32 weeks of pregnancy. Then women will practice at home once per day during 30 minutes until childbirth, and researcher will call pregnant women every day to monitor it. In the labor room, I may perform an abdominal examination if the nurses are busy (this will take around 10 minutes) at this time. I will record about fetal heart rate, age of your pregnancy and fetal position from your uterine. And during laboring I will perform an abdominal examination and I will record regarding your cervical dilation and uterine contractions from your chart. Women will implement breathing, positioning, stroking and Islamic praying in the active phase of labor for three times (for three hours in active phase of labor). I will ask you a few questions at the end of each hour for the first three hours. I will obtain other information from your chart now, during the three hours in active phase of labor. .

Risk and Benefits to Being in the Study:

You may feel a little discomfort from the abdominal examination, and the may be a little pain and discomfort from vaginal check. These two procedures will be done by a nurse or a doctor as gently as possible and as they are always done in this hospital. I will use the results from these procedures to determine the starting point of the study. However if the nurses are busy I may perform abdominal examination to know about your progress of labor. Information requested on the questionnaire may be somewhat personal, but you may refuse to answer any questions that you think are too personal.

There is no guarantee that you will benefit directly from this study, but you may benefit by knowing that you are sharing information that will help other women during labor. Results of the study will be published and may improve the treatment of women during labor.

Confidentiality:

I will maintain confidentiality of your records. If you do not meet the criteria for participation in the study during labor, the information will be destroyed. If you participate, I will maintain confidentiality the information that I have collected. Only

the researcher, her co-investigator can access it. Your name will not be connected in the study. Only a number will be used on the record. You will not be identified by name in any oral or written report of the study, as only group information will be used in the reports.

Voluntary Nature of the study:

Your participation in this study is voluntary. Your refusal to participate will not prejudice your future treatment or benefits at this hospital. You are free to stop participation in the study at any time without fear of penalty or loss of medical or nursing care.

Research Related Injuries:

Medical treatment is available at Bhinneka Bhakti Husada (BBH) hospital and CHC Pamulang, if physical injury occurs due to involvement in research, but you or your insurance company must pay the cost of treatment. Compensation for direct or indirect losses are not available. The BBH hospital shall not provide compensation for medical expenses or any other compensation for research-related injuries. Further information about researcher-related injuries is available from the office of the Obstetric gynecology department, Faculty of Nursing, Prince of Songkla University, Thailand (Tel: +66-74-286550).

Contacts and Questions;

Name of the researcher conducting this study is Desmawati. You may ask any questions if you have now. If you have any questions later, you may contact me at (08128134018) as principal investigator or my advisor, Assoc. Prof. Dr. Urai Hatthakit, Ph. D., RN, Faculty of Nursing, Prince of Songkla University in the Thailand (Tel: +66-74-286550).

If you would like to talk to someone other than the researcher about: (1) concerns regarding this study, (2) research participant rights, (3) research-related injuries, or other human subjects issues, please contact Prince of Songkla University's Office of Research Administration at (Tel: +66-74-286550) or write:

Prince of Songkla University-Office of Research Administration
P.O.Box 9, Khor Hong, Hanai Songkhla, Thailand, 90112
Fax No. 66-74-286421 Tel. 66-74-286456 (66-74-286459).-Songkla-Thailand

I will give you a copy of this form to keep for your records. You will receive a gift.

Statement of Consent: I and family were informed regarding to the study details and we have read the above information, we have understood and we have received answers to the questions we have. We agree to participate in the study,

Name of participant	Signature of participant	Date
Name of family member	Signature of family member	Date
Name of researcher/RA	Signature of researcher/RA	Date

No			

Appendix B

Data Collection Instrument

Confidential

CPNsIIIP Study

Hospital Number: ……(for following the chart) not to enter into SPSS

Group …… (0= Control, 1= CPNsIIIP), put after randomization.

A. Demographic Data Questionnaire (DDQ)

Directions: Please read the following questions and make a mark (√) in the appropriate each answer about your-self.

1. Age: years…….years……month

2. What is the highest level of education having you completed?.....
   - □ 1. Elementary school
   - □ 2. Junior high school
   - □ 3. Senior high school
   - □ 4. Diploma 1
   - □ 5. Diploma 3
   - □ 6. Bachelor
   - □ 7. Master
   - □ 8. Doctor

3. What is your ethnic?.....
   - □ 1. Javanese
   - □ 2. Minangnese
   - □ 3. Sundanese
   - □ 4. Betawinese
   - □ 5. Melayunese
   - □ 6. Other (please specify……)

4. What is your employment/occupation?.....
   - □ 1. Housewife
   - □ 2. Unemployed
   - □ 3. Government (please specify……..)
   - □ 4. Private (not government) (please specify……..)
   - □ 5. Other (please specify…….)

5. Income (family income/month) real number in Rupiah?..... _____

6. Weight …….....kgs _____

7. Height …… cms _____

B. Obstetric Data (during pregnancy and labor room)

8. What is the gestational age of pregnancy? validated with "What was your last date of menstruation (the first day from the end menstruation) (mm/dd/yy)……..…….**.....** _____

9. Do you have any health problems during this pregnancy?…… _____
   □ 0) No
   □ 1) Yes (please identify……)

10. History of painful menstruation until this pregnancy?…….. _____
    □ 0) No
    □ 1) Yes

11. Family support during health teaching……..... _____
    □ 0) Mother
    □ 1) Mother in law
    □ 2) Female relative
    □ 3) Husband
    □ 4) Other (please identify……**.....**)

12. Number of time of receiving antenatal care……..... _____

13. Membranes ruptured…… _____
    □ 0) No
    □ 1) Yes (when/time of membranes ruptured…….**.....**)
    (Onset of labor when……)

14. Type of analgesic drug that women received during labor…… _____
    □ 0) None
    □ 1) Pethidine (IM)……mg
    □ 2) Morphine (IM)……...mg
    □ 3) Pethidine (IV)……mg
    □ 4) Morphine (IV)……mg
    □ 5) Other (please specify……..)

15. Received artificial rupture of membrane…….. _____
    - □ 0) No
    - □ 1) Yes (time……..after the starting point……. min)
16. Spontaneous rupture of membranes……. _____
    - □ 0) No
    - □ 1) Yes (since the time……)
17. What is the characteristic of amniotic fluid ……..……. _____
    - □ 0) Clear meconium
    - □ 1) Mild meconium
    - □ 2) Thick meconium
18. Family support during the 3 hours of the study in the labor room..... _____
    - □ 0) Mother
    - □ 1) Mother in law
    - □ 2) Female relative
    - □ 3) Husband
    - □ 4) Other (specify……)
19. Gestational age at birth?.....weeks…… _____

1 hour after pretest

No	*Interventions*	*Times (minutes)*				*Total*
		15	*30*	*45*	*60*	
		Time…	*Time…*	*Time…*	*Time……*	
20	*Upright positions*					
21	*Supine/slide lying*					
22	*Stroking*					

2 hour after pretest

No	*Interventions*	*Times (minutes)*				*Total*
		15	*30*	*45*	*60*	
		Time…	*Time…*	*Time…*	*Time……*	
23	*Upright positions*					
24	*Supine/slide lying*					
25	*Stroking*					

3 hour after pretest

No	*Interventions*	*Times (minutes)*				*Total*
		15	*30*	*45*	*60*	
		Time…	*Time...*	*Time…*	*Time…*	
26	*Upright positions*					
27	*Supine/slide lying*					
28	*Stroking*					

Visual Analogue Scale

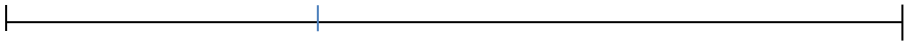
(Pretest labor pain at beginning of cervical of 3-4 cms before conducting intervention)

Before the beginning of cervical of 3-4 cms (in latent phase), researcher explains about the VAS:

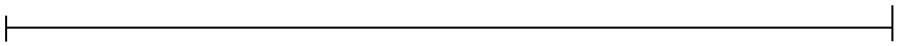
Direction: The lines below reflect the amount of labor pain scale (point to 100 mm VAS of Labor Pain Scale). Please you think about how much intense the physical feel or pain is in your abdomen during the last contraction. And then please mark anywhere on this line, which you think relevant with your feeling to show much of labor pain you are experiencing right now. This scale is a line that goes from no pain to the most pain imaginable.

- Please make your mark close to the right end, if you have a lot of pain
- Please make your mark closer to the left end, if you do not have much pain.
- Please mark in the middle of the line, if you have a moderate of pain.

Please mark your real amount labor pain right now on the next line. You may mark anywhere on the line (point to a picture):

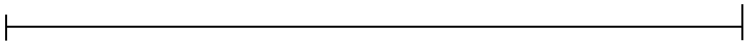


100 mm VAS of Labor Pain Scale



No pain **The most pain imaginable**

29. Pre-test……mm ____



No pain **The most pain imaginable**

Pain Observation Behaviors Scale (POBS)

(Researcher or RA observe it same time as measurement of labor pain=pre-test)

Direction: During uterine contraction, please consider and select the characteristics of the behaviors expressed by laboring women as shown follow

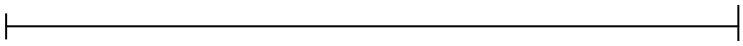
No	Behavior	Score			Score for time		
		3	2	1	1	2	3
30	Vocali-zation	Talking in normal tone or no sound	Sighing, moaning	Crying out, sobbing			
31	Body movements	Relaxed movements	Protection movement	Restlessness			
32	Breathing control	Good regularly control breathing	Irregularly but try to control breathing	Cannot control breathing			
33	Facial expression	Relaxed, neutral	Tense	Grimacing			
34	Commu-nication	No complaints of pain	Some complaints of pain or asking for help	Desperate or often asking for help			
35	*Pretest of PBOS*						

Visual Analogue Scale

After conducting intervention (I hour after cervical dilation 3-4 cms)

36. One hour pain……mm

VAS of Labor Pain Scale



No pain **The most pain imaginable**

Pain Observation Behaviors Scale (POBS)

(same time as measurement of labor pain=1 hour after cervical dilation 3-4 cm**)**

Direction: During uterine contraction, please consider and select the characteristics of the behaviors expressed by laboring women as shown follow

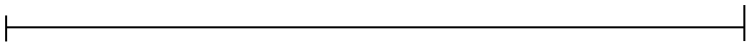
No	Behavior	Score			Score for time		
		3	2	1	1	2	3
37	Vocali-zation	Normal talking (no sound)	Grunting, sighing, moaning	Crying out, sobbing			
38	Body movements	Relaxing move-ments	Protective movement(guar ding, holding)	Restless-ness			
39	Breathing control	Good regularly control breathing	Irregularly but try to control breathing	Cannot control breathing			
40	Facial expression	Relaxing neutral	Tensing	Grimacing , wincing			
41	Commu-nication	No complaints of pain	Some complaints of pain or asking for help	Desperate or often asking for help			
42	*First hour PBOS*						

Visual Analogue Scale

After conducting intervention (2 hour after cervical dilation 3-4 cm)

43. Two hour pain……mm____

100 mm VAS of Labor Pain Scale



No pain **the most pain imaginable**

Pain Observation Behaviors Scale (POBS)

(Researcher or RA observe it same time as measurement of labor pain=2 hour after cervical dilation 3-4 cm**)**

Direction: During uterine contraction, please consider and select the characteristics of the behaviors expressed by laboring women as shown follow

No	Behaviors	Score			Score for time		
		3	2	1	1	2	3
44	Vocali-zation	Normal talking (no sound)	Grunting, sighing, moaning	Crying out, sobbing			
45	Body movements	Relaxing move-ments	Protective movement(guar ding, holding)	Restless-ness			
46	Breathing control	Good regularly control breathing	Irregularly but try to control breathing	Cannot control breathing			
47	Facial expression	Relaxing neutral	Tensing	Grimacing , wincing			
48	Commu-nication	No complaints of pain	Some complaints of pain or asking for help	Desperate or often asking for help			
49	*Second hour PBOS*						

Visual Analogue Scale

After conducting intervention (3 hour after cervical dilation 3-4 cms)

50. Three hour pain…….mm ____

100 mm VAS of Labor Pain Scale

No pain **the most pain imaginable**

Thank you for marking scales

Pain Observation Behaviors Scale (POBS)

(Researcher or RA observe it same time as measurement of labor pain= 3 hour after cervical dilation 3-4 cm**)**

Direction: During uterine contraction, please consider and select the characteristics of the behaviors expressed by laboring women as shown follow

No	Behavior	Score			Score for time		
		3	2	1	1	2	3
51	Vocali-zation	Normal talking (no sound)	Grunting, sighing, moaning	Crying out, sobbing			
52	Body movements	Relaxing move-ments	Protective movement(guar ding, holding)	Restless-ness			
53	Breathing control	Good regularly control breathing	Irregularly but try to control breathing	Cannot control breathing			
54	Facial expression	Relaxing neutral	Tensing	Grimacing , wincing			
55	Commu-nication	No complaints of pain	Some complaints of pain or asking for help	Desperate or often asking for help			
56	*After third 3hour PBOS*						

57. Duration of active phase of labor?

Active phase of labor…… hours……..minutes

58. Duration of second stage of labor……... hours……..minutes

59. Apgar Score at 1 minute……..

60. Apgar Score at 5 minutes…….

61. Baby weight……...grams

APPENDIX C

Protocol of Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP) Program

This research consisted of two parts: **Antenatal period** and **labor room**

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Step 1: Preparing Phase in the ANC at 32 weeks of pregnancy. Health education about CPNsIIIP program: Breathing, positioning, stroking, and Islamic praying			
Times	**Researcher activities**	**Mother activities**	Media
5-10 minutes	Greeting *Assalamu'alaikum* (May God/Allah save you)	Answer the greeting "*Wa'alaikumussalam* you too"	
	Introduction self	Introduction self	
	The researcher build the trustful relationship with asking about pregnant women's progress	Answer the nurse question	
	Developing the trust relationship with the researcher showing willingness to care for women	Willing to be treated	
40-45 minutes	The researcher explain: - definition of the CPNsIIIP program - objectives of the CPNsIIIP program - benefit of the CPNsIIIP program - procedures of the CPNsIIIP during pregnancy and at labor room	Pay attention Pay attention	Booklet
	The researcher demonstrates /simulates the components of CPNsIIIP program to pregnant women (involve patient's family): -Deep breathing techniques -Stroking/touching -Upright positions -Praying by herself (*ruqyah* prayer), Surrendering oneself to Allah "*Laahaula walaquwwata illabillahil 'aliyul adzim*"	Pay attention and practice it	Phan-tom, pillow, book-let, hand-book
	The researcher explain the instruments and how to use it		VAS, pencil
10 minutes	The research gave leaflet/handbook to pregnant women (*ruqyah* prayer)	Receive the leaflet/handbook	Book-let, hand-book, phan-tom, pillow
	The research allow pregnant women to ask questions	Pregnant women asked	
	The research answer the pregnant women question	Pay attention	
	The research ask the principal matters in CPNsIIIP to women	The women answer the nurse's question	

Times	Researcher activities	Mother activities	Media
	The research ask the pregnant women (one of them) to demonstrate the interventions in the CPNsIIIP program	Pregnant women (one of them) re-demonstration these interventions	
	The research do correction if there was something wrong	Paid attention and pregnant women fix things wrong	
	The research provide reinforcement if true (applause)	Cheers	
	Closing the meeting with greetings *(Assalamu'alaikum*)	*Wa'alaikumussalam*	
The researcher, the pregnant women, and her family build relationship and trust to gain the nurse-patient relationship for preparation of childbirth to achieve normal labor without complications.			

Step 2. Refresher/remind phase

This phase was done every day by call pregnant women every day, when mother regular check-up, and when mother entered hospital for birth

Times	Place	Researcher activities	Pregnant women activities
30 minutes /day	At home	Greetings *(Assalamu'alaikum*)	*Wa'alaiku mussalam*
		-The researcher ask about pregnant women's progress of pregnancy and whether you had been doing breathing, stroking, positioning and Islamic praying by yourself with *ruqyah* prayer today? (by phone). - If already, the researcher write checklist in the practice record form at home (Appendix B) - If not yet, the researcher encouraged the pregnant women to do it for today	Answer the question by phone -Ok, if already -Directly to do it
30 minutes/meeting	Ante natal clinic / home visit	Greetings *(Assalamu'alaikum*)	*Wa'alaiku mussalam*
		-Encourage pregnant women to talk difficulties during doing practice breathing, stroking, positioning and Islamic praying every day at home? - Could you please show me how to do it? -The researcher do correction if there was something wrong	Redemonstration how to do breathing, stroking, positioning and praying.

Times	Place	**Researcher activities**	**Women activities**
30 minutes	At labor room when mother entered hospital for birth	The researcher explains again the research application, the activities of the breathing, stroking, Islamic praying, and positioning with involvement the family as labor support. And also explain the role and responsibilities of the data collectors	Pay attention
		The researcher explains again the instruments use in the study and reviewed each of the items in the instruments, also discuss and clarify any unclear matters.	Pay attention
The researcher and the pregnant women improve a precious relationship to gain the nurse-patient relationship for preparation of childbirth and achieve normal labor without complications.			

In this refresher/remind phase, the mother practice (breathing, stroking, positioning, Islamic praying) at home every day until enter hospital for birth. The researcher monitor subjects every day by phone and need to meet them more than once (or at least once after health teaching) to check again whether they did intervention correctly (when checkup her pregnancy), home visit if needed. The researcher explain more about the steps of CPNsIIIP and the instruments when women enter the hospital for give birth and took time approximately 30 minutes.

Step 3. Working phase (in labor room)

The working phase was implemented in the delivery room at the active phase of labor. This phase include the physical care of the pregnant women, spiritual, psychological, and socio-cultural dimensions, involving non pharmacological techniques (breathing, stroking, positioning, Islamic praying) with labor support from family. Islamic praying was performed three times (at 1 hour, 2 hours, and 3 hours after cervical dilation of 3-4 cm) during there was no contractions, whereas during contractions the mother was advised to take only breathing. The stroking is done as much as the women can and positioning (walking and standing) is done if not membrane ruptured. The labor support from

family together with researcher guide mother to through three cycles in working phase by using guideline as follow:

Simple Guideline in Labor Room

Follow the instructions below:

- Ask the pregnant women to take upright positions comfortably
- Ask the pregnant women to say "*Bismillahirrohmaanirrohiim*"
- Ask the pregnant women to breathe in, breathe out
- Guide the pregnant women to read/voice lowly the *surah* relating *ruqyah* for pregnant women and childbirth (14 verses of Quran)
- Allow mind of pregnant women to focus on Allah with understand the meaning of *ruqyah* for pregnant women and childbirth (14 verses of Quran about how the human being is created by Allah)
- Suggest the pregnant women and their family to do stroking on pregnant women's belly as much as the women can and suggest women and family to surrender oneself on Allah by voicing "*Laa haula walaaquwwata illah billahil 'aliyyul adziim*"

The protocols of positioning, breathing, stroking, praying with *ruqyah*-surrendering oneself to Allah, were implemented as follows;

Steps	times	Researcher's Activities	Pregnant women activities
The positioning, and breathing (during uterine contrations).	Around 5 minutes	The researcher do the followings: -Regards - The beginning of saying " *Bismillahirrahmaanirrahiiim*" (with name of Allah, The Most Compassionate and Most Merciful), read *surah Alfatihah, Al-Ikhlas, Al-Falaq, An-Nas* -Make pregnant women to upright positions, relax with remembering of Allah. -The researcher suggest patients to breath with shallow, accelerated-decelerated	The patient responds to the followings: Answer the regards. - The patients start with say: "*Bismillahirrahmaanirrahiim* (with name of Allah, The Most Compassionate and Most Merciful), read *Alfatihah, Al-Ikhlas, Al-Falaq, An-Nas* -Upright positions, relax, focus and remember of Allah - Accelerated-decelerated

Steps	times	Researcher's Activities	Women/mother activities
		follows the character of contractions during cervical dilation 3-4 cm until 8 cm, and pant-blow, transitional (pattern paced breathing) for 8-10 cm of cervical dilation	breathing followed the character of contractions, shallower breathing and speeding up the breathing during cervical dilation 3-4 cm until 8 cm, and pant-blow, transitional (pattern paced breathing) for 8-10 cm of cervical dilation
The *praying* by her self (during inter-uterine contractions)	Approximately 20 minutes	-The researcher suggest pregnant women to pray by herself with *ruqyah* for women in labor during inter contraction of uterine, and only took deep breathing during uterine contractions: **وَلَقَدْ خَلَقْنَا الْإِنْسَانَ مِنْ سُلَالَةٍ مِنْ طِينٍ** **ثُمَّ جَعَلْنَاهُ نُطْفَةً فِي قَرَارٍ مَكِينٍ** ثُمَّ خَلَقْنَا النُّطْفَةَ عَلَقَةً فَخَلَقْنَا الْعَلَقَةَ مُضْغَةً **فَخَلَقْنَا مُضْغَةً عِظَامًا فَكَسَوْنَا الْعِظَامَ لَحْمًا ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَر** **إِنِّي خَالِقٌ بَشَرًا مِنْ صَلْصَالٍ مِنْ حَمَإٍ مَسْنُونٍ. فَإِذَا سَوَّيْتُهُ وَنَفَخْتُ فِيهِ مِنْ رُوحِي**	-The pregnant women praying by herself with *ruqyah* during inter contractions of uterine, and only take breathing during uterine contractions: -And certainly did We (Allah) create man from an extract of clay (because of the food comes from the ground) - Then We (Allah) placed him/fetal as a sperm-drop in a firm lodging. - Then We (Allah) made the sperm-drop into a clinging clot, and We (Allah) made the clot into a lump (of flesh), and We (Allah) made (from) the lump, bones, and We (Allah) covered the bones with flesh; then We (Allah) developed him/fetus into another creation. So blessed is Allah, the best of creators. - I (Allah) will create a human being out of clay from an altered black mud.

Steps	times	Researcher's Activities	Pregnant women activities
			And when I (Allah) have proportioned him/fetus and breathed into him/fetus of My /Allah (created) soul
		هُوَ الَّذِي يُصَوِّرُكُمْ فِي الأَرْحَامِ كَيْفَ يَشَاءُ	- It is He (Allah) who forms you in the wombs however He (Allah) wills.
		فَجَعَلَ مِنْهُ الزَّوْجَيْنِ الذَّكَرَ	And Allah made two sexes
		وَالْأُنْثَىٰ	male and/or female
		وَاللَّهُ خَلَقَكُمْ مِنْ تُرَابٍ ثُمَّ مِنْ نُطْفَةٍ ثُمَ	-And Allah created you from dust, then from a
		جَعَلَكُمْ أَزْوَاجًا وَمَا تَحْمِلُ مِنْ أُنْثَىٰ وَلَا تَضَعُ إِلَّا بِعِلْمِهِ	sperm-drop; then He (Allah) made you mates. And no female conceives nor does she give birth except with His (Allah) knowledge
		اللَّهُ يَعْلَمُ مَا تَحْمِلُ كُلُ أُنْثَىٰ وَمَا تَغِيضُ الْأَرْحَامُ وَمَا تَزْدَادُ	- Allah knows what every female (pregnant women) carries and what the wombs lose (prematurely) or exceed.
		وَهُوَ الَّذِي خَلَقَ مِنَ الْمَاءِ بَشَرًا فَجَعَلَهُ نَسَبًا وَصِهْرًا	- And it is He (Allah) who has created from water a human being and made him/her (a relative by) lineage and marriage
		يَخْلُقُكُمْ فِي بُطُونِ أُمَّهَاتِكُمْ خَلْقًا مِنْ بَعْدِ خَلْقٍ فِي ظُلُمَاتٍ ثَلَاثٍ	- He (Allah) creates you in the wombs of your mothers, creation after creation, within three darkness's or three stages (three trimester)
		وَاللَّهُ أَعْلَمُ بِمَا وَضَعَتْ	- And Allah was most knowing of what is in the uterine and what is born by pregnant women
		رَبَّنَا هَبْ لَنَا مِنْ أَزْوَاجِنَا وَذُرِّيَّاتِنَا قُرَّةَ أَعْيُنٍ وَاجْعَلْنَا لِلْمُتَّقِينَ إِمَامًا	- Our Lord (Allah), grant us from among our wives

Steps	times	Researcher's Activities	Pregnant women activities
		رَبِّ اجْعَلْنِي مُقِيمَ الصَّلَاةِ وَمِنْ ذُرِّيَّتِي رَبَّنَا وَتَقَبَّلْ دُعَاءِ ثُمَّ السَّبِيلَ يَسَّرَهُ وَاللَّهُ أَخْرَجَكُمْ مِنْ بُطُونِ أُمَّهَاتِكُمْ لَا تَعْلَمُونَ شَيْئًا وَجَعَلَ لَكُمُ السَّمْعَ وَالْأَبْصَارَ وَالْأَفْئِدَةَ لَعَلَّكُمْ تَشْكُرُونَ - Vocalizing as she bears down/vocalizing in ending of deep breathing or exhaling. - Suggested family to give some support of mental	and offspring comfort to our eyes and make us an example for the righteous. - My Lord (Allah), make me an establisher of prayer, and (many) from my descendants. Our Lord (Allah), and accept my supplication/prayer - Then He (Allah) eased the way for infant birth, (Then Allah make easy (ease) during childbirth) - And Allah has extracted you from the wombs of your mothers not knowing a thing, and He (Allah) made for you hearing and vision and intellect that perhaps you would be grateful. -Vocalizing as she bears down/vocalizing in ending of deep breathing or exhaling. -Family as labor support can give support of mental
The stroking	Around 5 minutes	- The researcher guide pregnant woman and family to do the stroking on pregnant woman's belly while voicing "*Imsahi al-ba`s rabb al-nas, biyadika al-shifa` la kashif lahu illa anta* or -"*Walyatalattaf*" (easygoing)" at least three/3 times. - Suggest pregnant women to surrender oneself to Allah; "*Laa haula walaquwwata illabillahil 'aliyyil 'adziim"*	-Family as labor support and pregnant women do stroking/touching by putting their hands on the women's belly and recite "Remove the trouble, O Allah of the people, the cure is in Allah's Hands, and there is none except You who can remove this pain or "easygoing" as much as women or family can (at least three/3 times)

Steps	times	Researcher's Activities	Pregnant women activities
		-Led women and family to pray (*do'a*) together -Every hour measure pain and pain-coping behaviors	-No power, no strength, but Allah -Prayed (*do'a*) together. - Marked on the VAS

The 14 verses of Quran can see also in the handbook (especially for mother)

4). Termination or closing phase

The termination phase consists of psychological and socio-cultural dimension: expression of positive feelings and emotions based on values and cultural backgrounds. This phase was done after baby birth or within 2 hours after birth (if needed), because it was not polite if researcher leave the women after the first 3 hours of active phase of labor.

Times	Researcher activities	Women's activities
15-30 minutes	Suggests the women and family to end the program	Terminate the program
	Guides the women to thank Allah by saying "*Alhamdulillah* (all praises be to Allah)" (3 times)	Saying "*Alhamdulillah*" (3 times)
	Assess about labor pain and pain-coping behaviors (discussed about these, not to measure pain and pain-coping behaviors}	Answer questions
	Encourages the women to express her feelings	Women and her family as labor support express feelings
	Says greetings "*Assalamu'alaikum*"	Answer the greetings "*Wa'alaikumussalam"*

APPENDIX D
BOOKLET

Definition of the Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP) Program.

CPNsIIIP program is a nursing program for pregnant women and labor based on Islamic Philosophy, Holistic Nursing Theory, and Labor Support

Objectives of the CPNsIIIP Program

1. Reduce labor pain
2. Increase pain-coping behaviors
3. Shorten duration of active phase of labor

The components of CPNsIIIP Program:

- **Positioning**

  The researcher assisted the pregnant women to set upright positions involving squatting, kneeling, standing,, walking, and sitting early labor (Bloom et al, 2015; Gupta & Nikodem, 2001; Gupta, Hofmeyr, & Shehmar, 2012**;** Lawrence, Lewis, Hofmeyr, & Styles, 2013; Lowdermilk, Perry, Cashion, & Alden, 2015; Perry, Hockenberry, Lowdermilk, & Wilson, 2014), but later upright with side lying position or semi sitting/recumbent position (30-45 ^{0}), with pillow support as the labor progresses can decrease labor pain and shorten duration of labor (Lawrence, Lewis, Hofmeyr, Dowswell, & Styles, 2009) accompanied by family, relax, with remembering of Allah.

For laboring women who have membranes ruptured, fetus not engage yet, does not take them for walking (just in bed including pee/urination using bedpan)

- **Breathing:**

  Breathing only used during uterine contractions with confidence and focus on Allah. Accelerated decelerated breathing followed the character of contractions, shallower breathing and speeding up the breathing was more effective when cervical dilation 3-4 cm to 8 cm. And used pant-blow, transitional breathing during cervical dilation 8 cm until 10 cm (Lothian, 2011; Lothian & DeVries, 2010).

Shallow,
Accelerated-decelerated

Pant-blow,
slow-chest transition

Cervical dilation

0 1 2 3 4 5 6 7 8 9 10

- **Islamic Praying**

The researcher & family guided the pregnant women to conducting praying by herself with *ruqyah* prayer (14 verses of Quran about how human being is created by Allah) and surrendering oneself to Allah.

***Ruqyah* for Pregnancy and Childbirth as follow:**

Start the beginning with say "*Bismillahirrohmanirrohiim*" and "*Al-Fatihah*'

بِسْمِ اللهِ الرَّحْمنِ الرَّحِيمِ
اَلْحَمْدُ للهِ رَبِّ الْعَالَمِينَ
الرَّحْمـنِ الرَّحِيمِ
مَالِكِ يَوْمِ الدِّينِ
إِيَّاكَ نَعْبُدُ وإِيَّاكَ نَسْتَعِينُ
اهدِنَـــا الصِّرَاطَ المُستَقِيمَ
صِرَاطَ الَّذِينَ أَنعَمتَ عَلَيهِمْ
غَيرِ المَغضُوبِ عَلَيهِمْ وَلاَ الضَّالِّينَ

Aamiin.

- *Al-Ikhlas, Al-Falaq, An-Nas*

Reference	In Arabic		In English	In Indonesian	No
QS Al-Mukminun 23: 12	*Walaqod kholaqnal insaana min sulaalatimm intiin.*	وَلَقَد خَلَقْنَا الْإِنْسَانَ مِنْ سُلَالَةٍ مِنْ طِينٍ	And certainly did We (Allah) create man from an extract of clay (because of the food comes from the ground)	Dan sesungguhnya Kami (Allah) telah menciptakan manusia dari saripati (tanah liat)…karena makanan berasal dari tanah	١

Reference	In Arabic		In English	In Indonesian	No
QS.Al-Mukminun 23: 13	*Tsumma ja'alnaahu nuthfatan fii qoroorimma kiin*	**ثُمَّ جَعَلْنَاهُ نُطْفَةً فِي قَرَارٍ مَكِينٍ**	Then We (Allah) placed him/fetus as a sperm-drop in a firm lodging.	Kemudian Kami (Allah) jadikan saripati itu air mani yang disimpan dalam tempat yang kokoh (rahim)	٢
Al-Mukminun 23: 14	*Tsumma kholaqnan nuthfata 'alaqotan fakholaqnal 'alaqota mudgotan fakholaqnal mudgota 'izooman fakasaunal 'izoma lahman tsumma ansyaknaahu kholqon aakhor.*	ثُمَّ خَلَقْنَا النُّطْفَةَ عَلَقَةً فَخَلَقْنَا الْعَلَقَةَ مُضْغَةً **فَخَلَقْنَا الْمُضْغَةَ عِظَامًا فَكَسَوْنَا ا الْعِظَامَ لَحْمًا ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَرَ**	Then We (Allah) made the sperm-drop into a clinging clot, and We (Allah) made the clot into a lump (of flesh), and We (Allah) made (from) the lump, bones, and We (Allah) covered the bones with flesh; then We (Allah) developed him/fetus into another creation. (So blessed is Allah, the best of creators)	Kemudian air mani itu melekat, kemudian Allah jadikan segumpal darah, kemudian dijadikan segumpal daging, kemudian tulang belulang, kemudian tulang belulang itu Allah bungkus dengan daging, kemudian Kami (Allah) jadikan makhluk yang berbentuk lain.	٣

Reference	In Arabic		In English	In Indonesian	No
QS Al-Hijr 15: 28-29 As-Sajdah 32: 7-9 Shad 38: 71-72	*Innii khooliqun basyarommin solsoolim min hamaimmas nuun. Faizaa sawwaituhu wanafakhtu fiihi mirruuhii*	إِنِّي خَالِقٌ بَشَرًا صَلْصَالٍ مِنْ حَمَإٍ مَسْنُونٍ فَإِذَا سَوَّيْتُهُ وَنَفَخْتُ فِيهِ مِنْ رُوحِي	I (Allah) will create a human being out of clay from an altered black mud. And when I (Allah) have proportioned him/fetus and breathed into him/fetus of My /Allah (created) soul.	Sungguh Allah akan menciptakan seorang manusia dari tanah liat kering dan lumpur hitam yang diberi bentuk (karena makanan berasal dari tanah). Maka setelah sempurna kejadiannya, Allah akan meniupkan rohNya	٤
QS Al-Imran 3: 6 QS Al-Qiyamah 75: 39	*Huallazii yusowwiruk um fil arhaami kaifa yasyaa'. Faja'ala minhuzzauja inizzakaro wal untsaa.*	هُوَ الَّذِي يُصَوِّرُكُمْ فِي الْأَرْحَامِ كَيْفَ يَشَاءُ فَجَعَلَ مِنْهُ الزَّوْجَيْنِ الذَّكَرَ وَالْأُنْثَىٰ	It is He (Allah) who forms you in the wombs however He (Allah) wills. And Allah was most knowing of what is born by pregnant women	Allah lah yang membentuk kamu dalam rahim menurut yang Allah kehendaki. Allah lebih mengetahui apa yang dilahirkan oleh ibu hamil.	٥
QS Al-Fathir, 35: 11	*Wallahu kholaqokum min*	وَاللَّهُ خَلَقَكُمْ مِنْ تُرَابٍ ثُمَّ مِنْ نُطْفَةٍ ثُمَّ جَعَلَكُمْ أَزْوَاجًا	And Allah created you from dust, then from a	Dan Allah mencipta kan kamu dari tanah, kemudian	٦

Reference	In Arabic		In English	In Indonesian	No
	turoobin tsumma min nuthfatin tsumma ja'alakum azwaajan. Wamaa tahmilu min unsaa walaa tado'u illaa bi'ilmihii	وَمَا تَحْمِلُ مِنْ أُنْثَىٰ وَلَا تَضَعُ إِلَّا بِعِلْمِهِ	sperm-drop; then He (Allah) made you mates. And no female conceives nor does she give birth except with His (Allah) knowledge	dari air mani, kemudian Dia (Allah) menjadikan kamu berpasangan (laki-laki dan perempuan). Dan tidak ada seorang perempuan pun mengandung dan tidak (pula) melahir kan melainkan de-ngan sepengetahuan Allah SWT	
QS Ar-Ra'd 13; 8	*Allohu ya'lamu maa tahmilu kullu unsyaa wamaa taghiidul arhaamu wamaa tazdaadu*	اللَّهُ يَعْلَمُ مَا تَحْمِلُ كُلُّ أُنْثَىٰ وَمَا تَغِيضُ الْأَرْحَامُ وَمَا تَزْدَادُ	Allah knows what every female (pregnant women) carries and what the wombs lose (prematurely) or exceed.	Allah mengetahui apa yang dikandung (dalam rahim) setiap perempuan, apa yang kurang sempurna dan apa yang bertambah dalam Rahim	٧
QS Al-Furqan 25: 54.	*Wahuwallaz ii kholaqo minal maa i basyaron faja'alahu*	وَهُوَ الَّذِي خَلَقَ مِنَ الْمَاءِ بَشَرًا فَجَعَلَهُ نَسَبًا وَصِهْرًا	And it is He (Allah) who has created from water a human being and made	Allah yang menciptakan manusia dari air mani, lalu membuat manusia itu mem	٨

Reference	In Arabic		In English	In Indonesian	No
	nasabawwa sihron		him/her (a relative by) lineage and marriage	punyai keturunan dan hubungan kekeluargaan	
QS Az-Zumar 39: 6	*Yakhluquku m fiibutuuni ummahatiku m kholqom minbakdi kholqin fii zulumaati salaasin*	يَخْلُقُكُمْ فِي بُطُونِ أُمَّهَاتِكُمْ خَلْقًا مِنْ بَعْدِ خَلْق فيظلما تٍ ثَلَاثٍ	He (Allah) creates you in the wombs of your mothers, creation after creation, within three darkness's or three stages (three trimester)	Allah menciptakan manusia dalam perut ibunya dalam tiga fase kegelapan /kejadian (tiga trimester)	٩
QS Al-Imran 3: 36	*Wallohu a'lamu bimaa wadoat*	وَاللَّهُ أَعْلَمُ بِمَا وَضَعَتْ	And Allah was most knowing of what is born by pregnant women	Allah lebih mengetahui apa yang perempuan itu lahirkan	١٠
QS Al-Imran 3: 36	*Robbanaa hablana minazwaaji naa wazurriyati naa qurrota a'yuniwwaj' alnaa lilmuttaqiin a imaamaa.*	رَبَّنَا هَبْ لَنَا مِنْ أَزْوَاجِنَا وَذُرِّيَّاتِنَا قُرَّةَ أَعْيُنٍ وَاجْعَلْنَا لِلْمُتَّقِينَ إِمَامًا	Our Lord (Allah), grant us from among our wives and offspring comfort to our eyes and make us an example for the righteous.	Ya Tuhan kami, anugerahkanlah kepada kami pasangan, keturun-an kami sebagai penyejuk hati kami dan jadikanlah kami pemimpin bagi orang-orang yang bertaqwa	١١

Reference	In Arabic		In English	In Indonesian	No
QS Ibrahim 14: 40	*Robbij'alnii muqiimassholaati wamin zurriyatii, Robbanaa wataqobbal du'aa.*	رَبِّ اجْعَلْنِي مُقِيمَ الصَّلَاةِ وَمِنْ ذُرِّيَّتِي رَبَّنَا وَتَقَبَّلْ دُعَاءِ	My Lord (Allah), make me an estab lisher of prayer, and (many) from my descendants. Our Lord (Allah), and accept my su-pplication/prayer	Ya Allah, jadikanlah aku dan anak cucuku orang yang selalu sholat dan perkenankanlah do'aku	١٢
QS 'Abasa 80: 20	*Tsummassa biila yassarohu*	ثُمَّ السَّبِيلَ يَسَّرَهُ	Then He (Allah) eased the way for infant birth, (Then Allah make easy (ease) during childbirth)	Kemudian Allah mudahkan jalan lahirnya	١٣
QS An-Nahl 16: 78	*Wallohu akhrojakum minbutuuni ummahatikum laa ta'lamuuna syai-an. Waja'ala lakumussam .a walabsoo rowalafidah ,la'alllakum tasykuruun*	وَاللَّهُ أَخْرَجَكُمْ مِنْ بُطُونِ أُمَّهَاتِكُمْ لَا تَعْلَمُونَ شَيْئًا وَجَعَلَ لَكُمُ السَّمْعَ وَالْأَبْصَارَ وَالْأَفْئِدَةَ لَعَلَّكُمْ تَشْكُرُونَ	And Allah has extracted you from the wombs of your mothers not knowing a thing, and He (Allah) made for you hearing and vision and intellect that perhaps you would be grateful.	Allah mengeluarkanmu dari perut ibumu dalam keadaan tidak mengetahui sesuatu apapun , kemudian Dia (Allah) berikan pendengaran, penglihatan, dan hati nurani, agar kamu bersyukur	١٤

Activity of women and family	Meaning	In Indonesian
-Women or her family do stroking/touching and putting her hands on the belly and recited "*Imsahi al-ba`s rabb al-nas, biyadika al-shifa` la kashif lahu illa anta* or -Pregnant women saying "*Walyatalattaf* " three time". -Pregnant women surrendering oneself to Allah "*Laa haula walaquwwata illabillahil 'aliyyil 'adziim"... Alhamdulillah.*	Remove the trouble, O Allah of the people, the cure is in Allah's Hands, and there is none except You who can remove this pain. -Easygoing (3x) -No power, no strength, but God. …Thanks Allah.	Ibu hamil atau keluarganya atau penolong persalinan melakukan gerakan membelai dengan telapak tangannya (yg sudah di bacakan "*walyatalattof* 3x" dan meniupkannya ke telapak tangan) dan kemudian meletakkannya di atas perut ibu sambil membaca "*Laa haula walaaquwwata illa billahil aliyyil adziim*" 3x, terakhir *Alhamdulillah.*

➢ **Stroking**

Providing physical contact and surrendering oneself to Allah. Suggested women to put her or families hand on pregnant woman's belly. Begin at the sides of peak belly and slowly move hands into the middle and both of sides. Gradually move hands down towards pubic bone, then along each side of groin and back up to each side using the flats of hands, move across and around belly "c" shapes or like "love/heart (♥)" shape (Bourne, 2014; Semper, 2011) while voicing "*Walyatallattof"* (3 times), and surrendering by saying "*Laahaulawala quwwata*

*illa billahil 'aliyul adziim"(*A person still cannot do anything without the help of Allah).The prophet Muhammad peace be upon him said, Whoever reads it, an angel descends to Give good health/brings a cure for that person (Hadith Tirmidhi). Stroking can be done by herself, her family or researcher/RA.

- **Labor Support from Family**

The family support in the program from pregnancy until delivery.

Process (steps) of CPNsIIIP Program:

- Preparation Phase (provided health education about stroking, positioning, breathing, and Islamic praying for pregnant women from 32 weeks of pregnancy).

- Refresher/Remind Phase.
  - Researcher reminded the pregnant women to take practice stroking, positioning, Islamic prayer regularly (once every day, at least 30 minutes) from 32 weeks of pregnancy until entered hospital for giving birth.

- Researcher refreshed how to apply these interventions and used instrument (mark VAS) when pregnant women entered hospital for giving birth.

➢ Working Phase (In the labor room at active phase of labor).

Do not forget to measure pain and pain-coping behaviors before do interventions:

- The upright positions
- The breathing
- The *ruqyah* prayer-surrendering oneself to Allah
- The stroking by involvement family

After one cycle, the researcher/RA asked the women to make mark in the VAS and the researcher/RA observed pain-coping behavior for 1st hour. After that continued to do cycle two and then the women made mark in the VAS again and the researcher/RA measured the pain-coping behaviors for 2nd hour. The last continued to do cycle three.

➢ Termination Phase.

The researcher or research assistants or family guided the women to thank to God (Allah) by saying "*Alhamdulillah* (all praises be to Allah)" (3 times).

The researcher assessed pain (the women gave mark at the VAS) and pain-coping behaviors (recorded by researcher/RA) for 3rd hour. For duration of active phase of labor assessed at the end of active phase of labor (cervical dilation 10 cm) or after baby was born. The researcher/RA encouraged the women family to express feeling.

Alhamdulillah

No			

Appendix E

Practice Record Form at Home

Direction: Please make a mark (√) in the blanks in each column if you have done non-pharmacological pain management practice at your home once per day at least 30 minutes (as accurately as possible), from 32 weeks of pregnancy until birth (34 days)

Date	**Non-pharmacological pain management Islamic praying**	**Duration (minutes)**	**Comments**

Direction: Please make a mark (√) in the blanks in each column if you have done non-pharmacological pain management practice at your home at least once per day at least 5 minutes (as accurately as possible), from 32 weeks of pregnancy until birth

Date	**Non-pharmacological pain management (stroking)**	**Duration (minutes)**	**Comments**

Direction: Please make a mark (√) in the blanks in each column if you have done non-pharmacological pain management practice at your home at least once per day at least 10 minutes (as accurately as possible), from 32 weeks of pregnancy until birth

Date	**Non-pharmacological pain management (Positioning)**	**Duration (minutes)**	**Comments**

APPENDIX F

Permission of Research Instrument

Faculty of Nursing
Chiang Mai University

คณะพยาบาลศาสตร์
มหาวิทยาลัยเชียงใหม่

Desma Wati
PhD Student
Prince of Songkla University
Hat Yai
Thailand

Dear Mrs. Desma Wati,

I am pleased to inform you that your request for permission to use Dr. Chavee Baosoung's research instrument "Pain Observation Behaviors Scale (POBS)" has been approved. I understand this research instrument will be used for the thesis entitled "The Effect of Childbirth Preparation Nursing Interventions Integrating Islamic Praying on Labor Pain, Pain-Coping Behaviors, and Duration of Labor in Primiparous Muslim Women".

If you have any questions please do not hesitate to contact Ms. Chiara Wuorenmaa, International Relations Officer, at chiara.w@cmu.ac.th.

Sincerely,

Thanee Kaewthummanukul

Asst. Prof. Thanee Kaewthummanukul, PhD, RN
Associate Dean for Research, Innovation, and Academic Services
Faculty of Nursing, Chiang Mai University

Address
9 Intharawarorot Road, Sriphum, Muang, Chiang Mai, 50200, Thailand
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APPENDIX G

LIST OF EXPERTS FOR INSTRUMENTS

VALIDATION AND TRANSLATION

Five experts examined the content validity of the all instruments (Demographic Data Questionnaire, Obstetric Data Questionnaire, Visual Analogue Scale of pain, Pain Behaviors Observation Scale, teaching plan, protocol of CPNsIIIP program), and also translation of instruments

1. Sopen Chunuan, RN., PhD

   Lecturer, Obgyn department, Faculty of Nursing, Prince of Songkla University, Hatyai, Thailand
2. Dr. Sununta Youngvanichsatha, RN

   Lecturer, Obgyn department, Faculty of Nursing, Prince of Songkla University, Hatyai, Thailand
3. Dr. Sasikarn Kala, RN.

   Lecturer, Obgyn department, Faculty of Nursing, Prince of Songkla University, Hatyai, Thailand
4. Yenita Agus, SKp., MKep., SpMat, PhD

   Lecturer, Maternity Nursing, State Islamic University, Jakarta, Indonesia
5. Dr. Irna Nursanti, SKp., MKep., SpMat

   Lecturer, Maternity Nursing, Muhammadiyah University, Jakarta, Indonesia

Two experts evaluated the Islamic Praying (hand book):

1. Professor Dr. Asep Usman Ismail, MA

   Lecturer, Islamic Science, State Islamic University, Jakarta, Indonesia

2. Dr. Nifasri, M.Pd

   Head of the Islamic Education, Ministry of Religious Affairs, Jakarta, Indonesia

Four experts or translators assisted in translation of instruments in Indonesian language and English language:

1. Mrs. Armadetus

   Language teacher, Center for language and translation, University of Pembangunan Nasional "Veteran" Jakarta, Indonesia

2. Mr. Ali Imron

   English lecturer, University of Pembangunan Nasional "Veteran" Jakarta, Indonesia

3. Mrs. Yenita Agus

   Lecturer, Maternity Nursing, State Islamic University, Jakarta, Indonesia

4. Mr. Greg Olivier

   Lecturer, Liberal Arts, Prince of Songkla University, Hatyai, Thailand

APPENDIX H

Ethics Committee Approval from PSU

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 0521.1.05/1663

Ethics Committee Approval

June 29, 2016

To whom it may concern:

This letter is to confirm that the Nursing Faculty Ethics Committee approved the research study of Mrs.Desmawati ID: 5610420011 entitled "Effects of the Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP)" on December 1, 2015. The study is a major part of Mrs.Desmawati's Doctoral Program 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 Waraporn Kongsuwan, PhD., RN
Assistant Dean Research and Graduate Studies
Faculty of Nursing,
Prince of Songkla University
THAILAND

Ethics Committee Approval from Bhinneka Bakti Husada Hospital

RUMAH SAKIT
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ETHICS COMMITTEE APPROVAL

May 3, 2016

To whom it may concern :

This letter is to confirm that the Bhineka Bakti Husada Hospital Ethics Committee Approved the research study of Mrs. Desmawati ID: 5610420011 entitled **"Effects of the Childbirth Preparation Nursing Intervention Integrating Islamic Praying (CPNsIIIP) program on Labor pain, pain – coping behaviors, and duration of labor in primiparous Moslem Women"**. 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,
Bhineka Bakti Husada Hospital

(dr. Lilis Kurniah R, MARS)

APPENDIX I

Skewness and Kurtosis Values in the Control and Experimental Group

Skewness and Kurtosis Values in the control and experimental group

	VAS pretest (mm)	VAS at 1 hour (mm)	VAS at Hour2 (mm)	VAS at Hour3 (mm)	total score POBS pretest	total score POBS at 1 hour	total score POBS at hour2	total score POBS at hour3	duration active phase (min)
CONTROL GROUP									
Skewness : SE of Skewness	-2.94	-2.54	-1.36	0.63	1.19	0.66	-0.11	-1.09	2.18
Kurtosis : SE of Kurtosis	1.85	1.85	1.09	0.55	0.35	-0.71	-0.17	-0.83	1.05
EXPERIMENTAL GROUP									
Skewness : SE of Skewness	-0.77	-1.55	0.12	-1.28	0.61	-3.10	-2.60	2.60	1.57
Kurtosis : SE of Kurtosis	0.23	1.00	-0.94	-0.63	-.0.10	-0.61	2.43	2.43	0.10

The Skewness and Kurtosis were normal -3.10 to +2.60 (±3.29).

VITAE

Name Desmawati

Student ID 5610430011

Educational Attainment

Degree	Name of Institution	Year of Graduation
Specialization in Maternity Nursing	Faculty of Nursing, University of Indonesia	2009
Master in Nursing Science	Faculty of Nursing, University of Indonesia	2008
Bachelor in Nursing Science and Nursing profession	Faculty of Nursing, University of Indonesia	2001
Diploma 3 of Nursing	MCB Padang, Indonesia	1998

Work Position and Address

Lecturer, Maternity Nursing, Faculty of Science, University of Pembangunan Nasional "Veteran" Jakarta. Jl. Pangkalan Djati No. 1, Pondok Labu, Jakarta Selatan

Mobile: +628128134018 E-mail: desmawati.campay@gmail.com

List of publication:

Desmawati. (2013). Determinant of Breastmilk Excretion Speed in Post Section Caesarean *[Penentu Kecepatan Pengeluaran Air Susu Ibu setelah Sectio Caesarea]*. *Kesmas: National Public Health Journal, 7*(8), 360-364.

Agustina., Desmawati., & Fandizal. M. (2014). School environment analysis of infectious diseases in elementary school students *[Analisis lingkungan*

sekolah terhadap penyakit menular pada siswa Sekolah dasar], Hasil Penelitian UPNVJ, 11(9), 113-121.

Apriningsih., Desmawati., & Joesro. M. (2014).” Culture of patient safety at Regional Hospital of Depok *[Budaya keselamatan pasien di RSUD Depok]*. *Hasil Penelitian UPNVJ, 21*(1), 103-112

Desmawati (2014). Factor analysis related to exclusive breastfeeding among working mother *[Analysis faktor-faktor yang berhubungan dengan pemberian ASI eksklusif pada ibu bejekrja]*. *Bina Widya*, *25* (4), 168-172.

Agustina & Desmawati (2016). Young women knowledge in Preparing for the First 1000 Days of Life. *[Gambaran Pengetahuan remaja Putri dalam Kesiapan menyongsong 1000 Hari Pertama Kehidupan di Fakultas Ilmu Kesehatan UPNVJ]*. *Bina Widya, 27*(1), 10-22.

Desmawati. (2016). Effect of *do'a* on pain-coping behaviors of Muslim women during the first three hours of the active phase of labor. *Belitung Nursing Journal*, 2(5), 99-106.

Desmawati (2017, November 9-10). *Effect of childbirth preparation program emphasizing Islamic praying on labor pain, pain-coping behaviors, and duration of labor in primiparous Muslim women: A pilot study.* Poster presented at the Thailand Nursing Society and Sigma Theta Tau International Honor Society of Nursing, Phi Omega-at-Large Chapter Conference, Bangkok, Thailand.