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THE EFFECTIVENESS OF A NURSE-LED SOCIAL SUPPORT PROGRAM TO PREVENT POSTPARTUM DEPRESSION AMONG ADOLESCENT MOTHERS: A RANDOMIZED CONTROLLED TRIAL

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Burapha University

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BUSSARA SANGSAWANG

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The Dissertation of Bussara Sangsawang has been approved by the examining committee to be partial fulfillment of the requirements for the Doctor of Philosophy in Nursing Science of Burapha University

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BUSSARA SANGSAWANG : THE EFFECTIVENESS OF A NURSE-LED SOCIAL SUPPORT PROGRAM TO PREVENT POSTPARTUM DEPRESSION AMONG ADOLESCENT MOTHERS: A RANDOMIZED CONTROLLED TRIAL. ADVISORY COMMITTEE: WANNEE DEOISRES, Ph.D., PORNPAT HENGUDOMSUB, Ph.D. 2020.

Postpartum depression (PPD) among adolescent mothers is a major public health problem worldwide which can affect both adolescent mothers and their infants. A randomized controlled trial was conducted to examine the effectiveness of the Nurse−Led Social Support Program (NLSS program) on PPD in adolescent mothers. The NLSS program was developed based on social support theory and literature review. Forty-two adolescent mothers who met the inclusion criteria were randomly assigned into either experimental group (n = 21) or control group (n = 21). Participants in the experimental group received the NLSS program plus usual care, whereas the control group received only usual care. PPD was measured by the Thai version of the Edinburgh Postnatal Depression Scale (EPDS). The EPDS score ≥13 was considered to have PPD. The PPD was measured at pretest, posttest (4 weeks), and followed-up (6 weeks and 12 weeks) of postpartum. Descriptive statistics and Repeated Measures ANOVA were used to analyze data.

The findings found that only 20 participants remained in each group at the last follow-up. The results revealed that mean scores of EPDS in the experimental group were statistically significant lower at 4 weeks, 6 weeks, and 12 weeks after participating in the NLSS program (p <.05, p <.01, and p <.01, respectively). Furthermore, mean scores of EPDS in the experimental group were statistically significant lower than those in the control group at 4 weeks, 6 weeks, and 12 weeks (p < 0.01, p < 0.01, and p < 0.01, respectively). Moreover, the rates of adolescent mothers who experienced PPD symptoms in the experimental group were lower than those in the control group at 4 weeks, 6 weeks, and 12 weeks. These findings indicated that the NLSS program was effective to prevent PPD in adolescent mothers.

Therefore, midwiferies or nurses should implement the NLSS program to adolescent mothers to prevent postpartum depression.

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CHAPTER 1
INTRODUCTION

Statements and significance of the problems

According to the World Health Organization [WHO], adolescent mother defined as a young woman who becomes a mother at aged 10-19 years (WHO, 2007). Adolescent mother seems to be increasing in many developing and developed countries. Worldwide, approximately 16 million adolescent mothers aged 15-19 years, and two million adolescent mothers under the age of 15 years gave birth every year (WHO, 2014). In developed countries, the highest rate of adolescent mother was in the United States. In 2017, adolescent mothers aged 15-19 years gave 194,377 births (18.8 births per 1,000 females) in the United States (Sedgh, Finer, Bankole, Eilers, & Singh, 2015). In Thailand, the birth rates in adolescent women aged 10-19 years were 11.5 births per 1,000 females accounting for 628,450 births in 2018. Divided by aged groups, the rates of adolescent births aged 10-14 years were lower than aged 15-19 years with incidence rates reported at 1.2 and 35.0 (per 1,000 females), respectively (Bureau of Reproductive Health, 2015b).

Adolescence is a transitional period between childhood and adulthood which characterized by biological, psychological, and social changes. When an adolescent becomes pregnant, the psychological adjustment of pregnancy is added to the challenges in the transition of adolescence (Littleton & Engebretson, 2005). Therefore, adolescent pregnant and their children represented populations at increased risk for medical, psychosocial and developmental problems. Adolescent mothers were significantly higher rate of anemia, preterm delivery, low birth weight, pre-eclampsia, eclampsia, puerperal endometritis and systematic infections than adult mothers (Ganchimeg et al., 2014; Jeha, Usta, Ghulmiyyah, & Nassar, 2015; Thaithae & Thato, 2011). These complications seemed to be the greatest for the youngest adolescent mothers (Ganchimeg et al., 2014; Pinzon & Jones, 2012)

In psychosocial problem, adolescent and young mothers may be particularly vulnerable to the psychosocial problems during pregnancy and postpartum period because adolescent mothers face a number of challenges such as transitioning to

a new role and new responsibilities as a mother (Angley, Divney, Magriples, & Kershaw, 2015). Moreover, adolescent mothers experience more difficulty than adult mothers during the early-parenting period (Devito, 2007). Therefore, in terms of psychosocial problems for early motherhood, a number of studies have suggested that being adolescent mothers may be related to poorer mental health outcomes, such as psychological distress or postpartum depression (Cook & Cameron, 2015; Pinzon & Jones, 2012).

Postpartum depression [PPD] is one of the most common mental health complications for many women during postpartum period. Although the American Psychiatric Association [APA] defined postpartum depression as a major depressive disorder with onset during pregnancy or within the first 4 weeks after delivery (APA, 2013). However, many previous researches found the onset of postpartum depression occurred within the first 6 months after delivery. For example, O'Hara, Stuart, Gorman, and Wenzel (2000) found that at least one-third of women report the onset of postpartum depression at 2-6 months after delivery. Among adolescent mothers, about one-third and more than half (36.7 % to 57 %) have depressed scores that indicated postpartum depression at 3 months after delivery (Brown, Harris, Woods, Burman, & Cox, 2012; Schmidt, Wiemann, Rickert, & Smith, 2006). Considering the onset of postpartum depression, therefore, most experts in the field classified a depression that occurs within the first 6 months after delivery as postpartum depression (Jones et al., 2010; Miller, 2002; O'Hara & Gorman, 2004; Phipps, Raker, Ware, & Zlotnick, 2013; Zlotnick, Tzilos, Miller, Seifer, & Stout, 2016).

Postpartum depression, a serious public health issue for many adolescent mothers worldwide both developing and developed countries, is characterized by the symptoms of depressed mood, sleep disturbance, poor functioning, lack of or excessive concern for the baby, constant fatigue, and anxiety or irritability (Patel et al., 2012).

Postpartum depression impacts not only for adolescent mothers but also for infants, and significantly affects many maternal and infant outcomes (Hayes & Muller, 2004). Moreover, postpartum depression can also impact on the ability and quality of parenting, and overall childcare skills of adolescent mothers (Birkeland, Thompson, & Phares, 2005; Morrell, 2006). Adolescent mothers who had postpartum

depression had been shown less positive parenting abilities to care infants (Cox et al., 2008; Lanzi, Bert, & Jacobs, 2009), and lower maternal sensitivity to interact with their infants comparing to older mothers (McLearn, Minkovitz, Strobino, Marks, & Hou, 2006). Consequently, postpartum depression has been associated with negative impact on the maternal-infant's attachment and interaction which can also negatively impact on infants' cognitive, social and emotional development (Barnet, Liu, & Devoe, 2008; Campbell et al., 2004; McLearn et al., 2006; Righetti-Veltema, Bousquet, & Manzano, 2003), and increase poor behaviors of infants when interacting with their mothers (Lanzi et al., 2009). Furthermore, postpartum depression is an important factor of the mother for subsequent risk of depression in later life (Dennis, Heaman, & Vigod, 2012).

The postpartum period is considered a time of increased risk for the onset of postpartum depression. Reproductive hormones fluctuation during pregnancy and dramatically drop after delivery which affected all women were considered as biological risk factors for developing postpartum depression (Douma, Husband, O'Donnell, Barwin, & Woodend, 2005; Payne, Palmer, & Joffe, 2009; Schiller, Meltzer-Brody, & Rubinow, 2015). Moreover, many meta-analysis studies suggested the significant risk factors of postpartum depression were consistently highlighted in the psychosocial factors (Beck, 2001; O'Hara & Swain, 1996). Psychosocial factors including antenatal anxiety, antenatal depression, stressful life events, and low/ lack of social support are significant risk factors for the development of postpartum depression (Matthey, Barnett, Howie, & Kavanagh, 2003; Robertson, Grace, Wallington, & Stewart, 2004). Furthermore, other psychosocial factors include single marital status, poverty, low SES, and unplanned or unwanted pregnancy are also risk factors of postpartum depression (Beck, 2001; Figueiredo, Pacheco, & Costa, 2007; Meltzer-Brody et al., 2013; Schmidt, Wiemann, Rickert, & Smith, 2006; Segre, O'Hara, Arndt, & Stuart, 2007).

Lack or low of social support is one of the strongest psychosocial risk factors for the development of postpartum depression in adolescent mothers (Beck, 2002; Gao, Chan, & Mao, 2009; Heh, Coombes, & Bartlett, 2004; Milgrom et al., 2008; Robertson et al., 2004). Adolescent mother may be expected to need additional social support during pregnancy and after childbirth (Furey, 2004). Unfortunately,

adolescent mothers had experience lower levels of social support or inadequate social support than non-pregnant peers and adult mothers (Crase, Hockaday, & Cooper McCarville, 2007; Figueirrdo, Bifulco, Pacheco, Costa, & Magarinho, 2006; Logsdon, Birkimer, Ratterman, Cahill, & Cahill, 2002; Wahn & Nissen, 2008).

Adolescent mothers who lack or received low of social support both antenatal and postpartum periods were a high-risk group for increasing the risk of postpartum depression (Huang, Costeines, Ayala, & Kaufman, 2014; Kim, Connolly, & Tamin, 2014; Nirattcharadorn, Germaro, Vorapongsathora, & Sitthimongkol, 2005). Therefore, adolescent mothers have a higher rate of postpartum depression than adult mothers (Cook & Cameron, 2015; Figueirrdo et al., 2006; Lanzi et al., 2009; Mollborn & Morningstar, 2009). Several studies indicated that adolescent mothers had a higher prevalence of PPD than adult mothers which were reported to occur in 14-32 % of adolescent mothers and 7.2-16 % of adult mothers (Figueiredo et al., 2007; Kim et al., 2014; Mollborn & Morningstar, 2009; Wahn & Nissen, 2008)

Worldwide, postpartum depression affects approximate 10-57 % of adolescent mothers after childbirth (Birkeland et al., 2005; Meltzer-Brody et al., 2013; Schmidt et al., 2006; Venkatesh, Phipps, Triche, & Zlotnick, 2014). Especially, in Thailand, many results indicated that approximate 41.67-54.71 % of the adolescent mothers had postpartum depression (Chaisawan, Serisathein, Yusamran, & Vongsirimas, 2011; Moontito, Sriarporn, & Baosoung, 2017; Nirattcharadorn et al., 2005; Srisaeng, 2003).

Social support to adolescent mothers can come from many sources. However, the informal support from family members and husband are the most important sources for the new mothers to get support (Gao, Xie, Yang, & Chan, 2015). Moreover, mother of adolescent mother is one of the family members who has the most common support provider and important source to support adolescent mothers during pregnancy and postpartum period for providing assistance when they faced distress (Simpson & Rholes, 2012). Because many adolescent mothers still lived with their mother after delivery, and were likely to be dependent on mother for financial and health care resources, as well as for emotional support (Figueirrdo et al., 2006; Gee & Rhodes, 2003; Kleiber, 2013; Rentschler, 2003; Stiles, 2008). According to Thailand, Sriyasak, Almqvist, Sridawruang, Neamsakul, and Häggström-Nordin

(2016, 2018) found adolescent mothers received various types of support from their family both during pregnancy and after childbirth, and mother of adolescent mother was a significant source of all supports from pregnancy to childrearing period which provided physical, emotional, instrumental, informational, and financial support to their adolescent mother.

As well as the support from mother of adolescent mother, adolescent mothers had need for emotional, esteem, material, informational, and network support during postpartum period (Logsdon, Cross, Williams, & Simpson, 2004) that were provided by formal support from trusted healthcare providers (Dykes, Moran, Burt, & Edwards, 2003). Most mothers in early postpartum period felt a need for social support during their transition to motherhood from healthcare professionals such as midwives or nurses (Darvill, Skirton, & Farrand, 2010; Teeffelen, Nieuwenhuijze, & Korstjens, 2011; Wilkins, 2006). Therefore, several studies and meta-analysis suggested that interventions providing informational support, especially the information about postpartum depression by a health professional immediately after childbirth had shown to be effective in reducing the risk of postpartum depression than providing this information during pregnancy (Dennis & Dowswell, 2013; Hayes & Muller, 2004; Heh & Fu, 2003; Ho et al., 2009; Webster et al., 2003). As a result, nurses should have a significant role to initiate intervention for adolescent mother in the early postpartum period to prevent postpartum depression.

The preventions of postpartum depression in adolescent mother are significant methods as the treatment methods of postpartum depression. A recent systematic review found that both psychological intervention and psychosocial intervention were significant methods to prevent postpartum depression in mothers who specifically targeting high-risk mothers for developing postpartum depression (Dennis & Dowswell, 2013). The psychosocial intervention was a simple intervention with the potential to prevent postpartum depression (Dennis & Dowswell, 2013). Moreover, social support is one of the psychosocial intervention, and several studies found wide variety of psychosocial support interventions such as health professional-support, peer-support, telephone-based peer support, home visit, support-education (Dennis & Dowswell, 2013). Psychosocial interventions which provided the intensive support by a health professional in the postpartum period can be effective in reducing

postpartum depression in adolescent mothers (Dennis, 2003; Dennis, 2005; Dennis & Dowswell, 2013).

For instance, Ickovics et al. (2011) provided information support by using the prenatal-postnatal support educational program in groups of 8-12 adolescent pregnant women which led by a trained prenatal care provider (e.g., midwife, obstetrician) among 1047 adolescent pregnant women. The researcher found that the group-prenatal care can be effective to decrease depression among potentially vulnerable women with high reported prenatal stress in 1-year postpartum. For home-visiting intervention, Barnet, Duggan, Devoe, and Burrell (2002) used a home-visiting intervention that utilized the Parent Aides Nurturing and Developing with Adolescents curriculum, which placeed an emphasis on positive child development through nurturing and empathetic parenting. The intervention group received weekly, one-and-one-half-hour visits from a trained home visitor. The home visitor focused on different aspects of parenting, health, and education at each visit, and made referrals for early interventions when necessary. The results showed that the home visitation group did not exhibit adolescent depressive symptoms, and both groups showed no differences in mental health problems.

Another study of Barlow et al. (2006), examined the effect of the para-professional delivered home-visiting intervention which includes 25 home visits and 41 lessons to promote child care knowledge, skills, and involvement among 41 American Indian adolescent pregnant women. The researcher found that the adolescent mothers in the intervention group experienced a larger drop in depressive symptoms at both 2 months and 6 months postpartum. In the study to enhance social support, Logsdon, Birkimer, Simpson, and Looney (2005) examined the effectiveness of a social support intervention which provide by nurses to 128 pregnant adolescents in order to prevent postpartum depression. The social support which provided to pregnant adolescents consists of three interventions including a pamphlet, a video, or the combination of the pamphlet and the video. The content of the social support intervention was developed based on literature that described the social support needed and desired by postpartum adolescents. However, the researchers found no difference in postpartum depression between two groups at 6 week postpartum.

Currently, in Thailand, not found study had been conducted the interventions to prevent postpartum depression among adolescent mothers. The majority of studies were cross-sectional study which focused on examining the prevalence and associated risk factors of postpartum depression among adolescent pregnant women or adolescent mother (Chaisawan et al., 2011; Moontito et al., 2017; Nirattcharadorn et al., 2005; Uthaipaisanwong, Rungruxsirivorn, Roomruangwong, Taechakraichana, & Chaithongwongwatthana, 2015). However, Bureau of Reproductive Health (2015a) published the "handbook of adolescent mother caring guideline" to use as a guideline for healthcare professions to provide caring activities for adolescent mother during postpartum period until 2 year after delivery. Unfortunately, the caring activities for adolescent mothers were not focused on the prevention of postpartum depression especially in the role of social support from family members. Because the majority of the caring activities emphasized on the postpartum health care and infant care for adolescent mothers during hospitalization and after discharge from hospital.

From above mentioned, the high prevalence and negative consequence of postpartum depression supported the crucial need to develop the more effective interventions to prevent postpartum depression particularly adolescent mothers. Especially the intervention that developed to enhance social support may be helpful in preventing the development of postpartum depression. Unfortunately, the majority of the psychosocial interventions was not specially developed to increase social support, and was limited to one dimension of social support, namely information support, and was not focus on the other dimensions of support such as instrument, emotional, and appraisal supports. All of the psychosocial interventions delivered only antenatal period, not extended to postpartum period. Moreover, health care providers such as nurses, midwives, obstetricians, or paraprofessionals were significant person to directly provide social support intervention to adolescent pregnant women.

None of all interventions promotes family members such as mother of adolescent mother or adolescent's husband/ partner to support adolescent mothers during pregnancy and postpartum period. Additionally, there were only three published studies have been evaluated the effect of interventions focusing on the prevention of postpartum depression among adolescent mothers rather than focusing on other parenting and infant outcomes (Ginsburg et al., 2012; Logsdon et al., 2005;

Phipps, Raker, Ware, & Zlotnick, 2013). Furthermore, all of the studies had been conducted in developed countries, especially in the USA. Therefore, these interventions may not applicable to Thai adolescent mothers who lived in different cultures and social circumstances.

Consequently, the social support intervention that combined the support from healthcare provider and family member in early postpartum period can prevent postpartum depression in adolescent mothers. Therefore, this study aimed to develop the psychosocial intervention to enhance social support, namely a nurse-led social support program covering all dimensions of social support in early postpartum period which should be helpful to prevent the development of postpartum depression in adolescent mothers. The nurse-led social support program is an intervention that combines the support from nurse professional and primary family members of adolescent mother. The results of this study would help prevent postpartum depression in adolescent mothers. Thus, the purpose of this study was to examine the effectiveness of the nurse-led social support program to prevent the development of postpartum depression in adolescent mothers.

Objectives of the study

1. To compare postpartum depression scores in the experimental group who participated in the nurse-led social support program at post-intervention (4-week postpartum), and the follow-up period (6-week and 3-month postpartum).

2. To compare postpartum depression scores between the experimental group who participated in the nurse-led social support program and the control group who receive only usual nursing care at post-intervention (4-week postpartum), and the follow-up period (6-week and 3-month postpartum).

Research hypotheses

1. Mean scores of postpartum depression in the experimental group are significantly lower than those in the control group at post-intervention (4-week postpartum) and the follow-up period (6-week and 3-month postpartum).

2. Mean scores of postpartum depression in the experimental group at post-intervention (4-week postpartum) and the follow-up period (6-week and 3-month postpartum) are significantly lower than those before participating in the program.

Conceptual framework of the study

The conceptual framework of this study was developed based on social support theory (House, 1981), systematic reviews, meta-analysis, and research evidences. Several studies and meta-analyses of risk factors suggested that lack or low level of social support was one of the strongest predictors of postpartum depression (Beck, 2001; Milgrom et al., 2008; Robertson et al., 2004). The findings from predictive model study reported postpartum depression in adolescent mothers was most influenced by lack or low levels of social support (Nunes & Phipps, 2013). Adolescent mothers who received minimal or lack of social support after delivery have been found to report approximately five times more likely experience of postpartum depression compared to women with high supportive networks (Kim et al., 2014). On the contrary, receiving higher levels of social support were associated with less postpartum depression during postpartum period (Beck, 2001; Brown, Harris, Woods, Burman, & Cox, 2012; Corrigan, Kwasky, & Groh, 2015; Cox et al., 2008; Edwards et al., 2012; Gao, Chan, & Sun, 2012; Ngai, Chan, & Ip, 2010; Quelopana, Champion, & Reyes-Rubilar, 2011).

According to the social support theory (House, 1981), social support defined as "an interpersonal transaction involving one or more of the following: (1) emotional concern (liking, love, empathy), (2) instrument aid (goods or services), (3) information (about the environment), or (4) appraisal (information relevant to self-evaluation) (p 39)."

Social support can be seen as an essential key to overcome stress and challenges in life, and can be categorized into two major types which combined with functional and structural support (House, 1981). Functional support includes emotional, instrumental, informational, and appraisal support. Structural support consists of the support from formal support such as health care professions (e.g., nurses, midwives, and physicians) and the support from informal support such as family members, husband/partner, friends, and/or social networks (House, 1981).

Interestingly, the number of supportive persons during pregnancy had been associated with postpartum depression in the postpartum period. Lower number of supportive persons who were available to provide social support during pregnancy directly predicted postpartum depression in the postpartum period (O'hara et al., 2017), while having a larger number of supportive persons during pregnancy helped protect against postpartum depression (Morikawa et al., 2015).

Psychosocial support intervention that provide to mothers in reducing postpartum depression may receive from both formal and informal supports, and it may be received in different functional supports such as informational (e.g., health education), emotional (e.g., empathy, caring, love), instrumental (e.g., babysitting, help with household chores, financial), and appraisal support (e.g., information promoting self-evaluation) (Beck, 2002; Logsdon et al., 2005). Importantly, receiving social support is associated with a reduced the risk of postpartum depression for both adolescent and adult mothers (Kim et al., 2014). Therefore, several studies found wide variety of social support interventions such as health professional-support, peer-support, telephone-based peer support which received the intensive support by a health professional in the postpartum period can be effective in reducing postpartum depression for both adult and adolescent mothers (Dennis, 2003, 2005).

The adequate social support that received from both formal and informal support and received information about postpartum depression may be reduced the risks of postpartum depression by improving health behaviors, increasing positive feelings, enhancing emotional, and providing supports, encouragements and resources during the antenatal and postpartum period (Heh & Fu, 2003; Ho et al., 2009; Horenstein & Cohen, 2008). The conceptual framework of the study was presented in Figure 1.

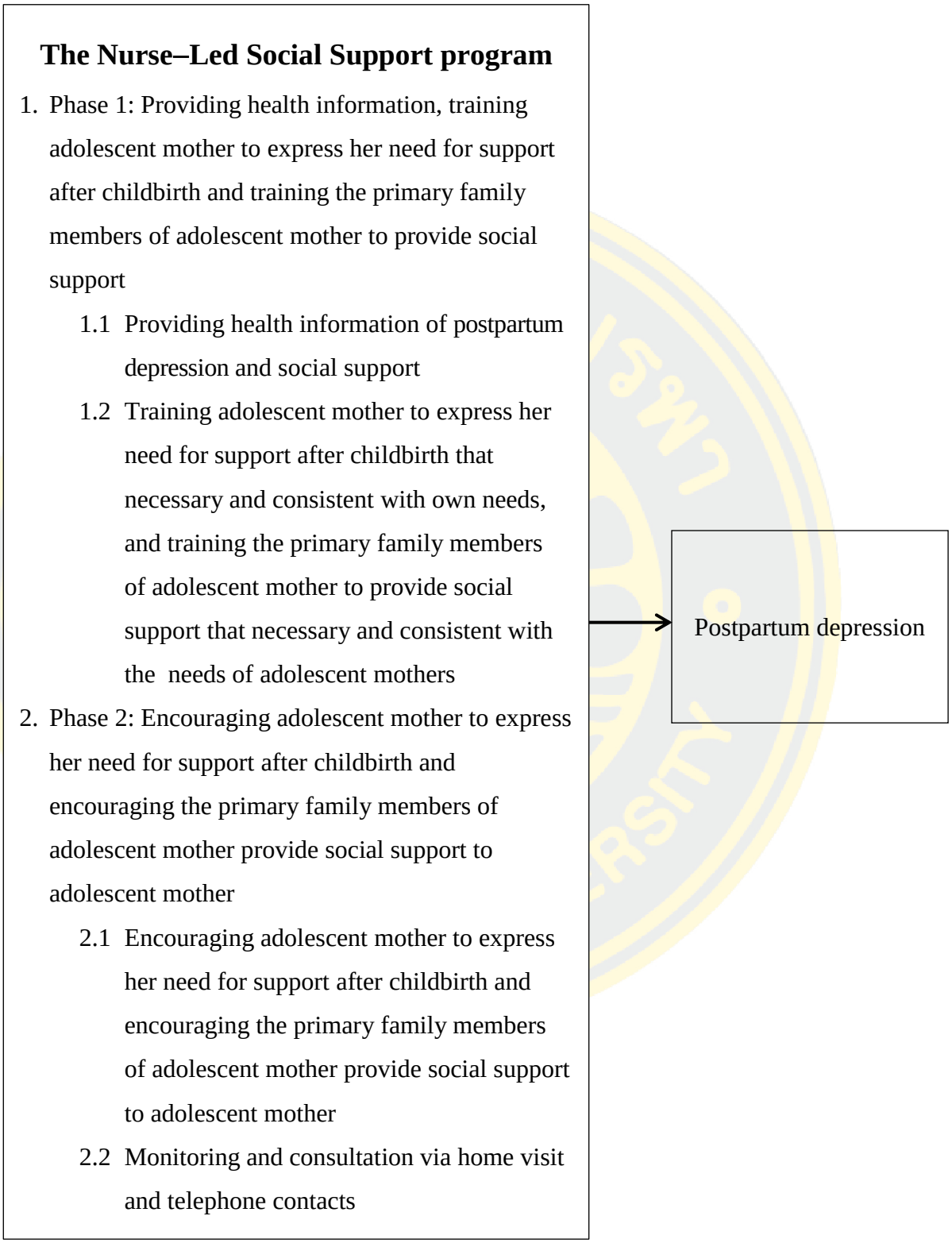

Figure 1 The conceptual framework of the study

Scope of the study

This double-blind randomized controlled trial study conducted to examine the effectiveness of the nurse-led social support program on preventing postpartum depression in adolescent mothers. The 42 participants of this study included primiparous adolescent mothers who had lived with primary family members, and received postpartum care at Postpartum Care Unit, Chonburi Hospital, Chon Buri Province, Thailand. Data were collected from March to August 2019.

Operational definition of terms

Postpartum depression is defined as a major depressive disorder that occurred within the first 6 months after delivery (Jones et al., 2010; Miller, 2002; O'Hara & Gorman, 2004; Phipps et al., 2013; Zlotnick et al., 2016) which characterized the same as major depression occurring at other times, including depressed mood, loss of interest or pleasure, guilt feeling, anxiety, irritability, sleep disturbance, disturbed appetite, low energy, fatigue, lack of or excessive concern for the baby, or suicidal ideation. Adolescent mothers who experienced postpartum depression were measured by using the Thai translated version of the Edinburgh Postnatal depression scale or Thai EPDS (Vacharaporn, Pitanupong, & Samangsri, 2003). The EPDS score ≥13 score was considered to have postpartum depression (Cox, Holden, & Sagovsky, 1987).

Social support is defined based on the theoretical work of House (1981), as an interpersonal transaction involving one or more of the following: Emotional concern, instrument aid, information, or appraisal. In the study, social support is operationally defined as the assistances during postpartum period regarding information, emotion, instrument and appraisal that the adolescent mothers received from primary family member of adolescent mother and nurses.

The nurse-led social support program is the nursing interventions which developed by the researcher based on social support theory (House, 1981) and literature reviews covered four dimensions of social support (including informational, emotional, instrumental and appraisal support). The NLSS program was delivered to adolescent mother and the primary family members who provided social support for

adolescent mothers between the 1st and the 2nd day after childbirth at hospital by researcher (nurse). In the program, the researcher provided informational support about postpartum depression and social support to adolescent mother and the primary family members of adolescent mother, trains adolescent mother to express her need for support after childbirth that necessary and consistent with own needs, and the researcher also trains the primary family members of adolescent mothers to provide social support that necessary and consistent with the needs of adolescent mothers.

The NLSS program consists of four components into two individual implementation phases over a period of 4 weeks by providing support to adolescent mothers and the primary family members of adolescent mother at postpartum unit and the participants' home via 1-time home visit and 2-time telephone contact.

The four components of the NLSS program consist of 1) providing health information about postpartum depression and social support; 2) training adolescent mother to express her need for support after childbirth that necessary and consistent with own needs, and training the primary family members of adolescent mother to provide social support that necessary and consistent with the needs of adolescent mothers; 3) encouraging adolescent mother to express her need for support after childbirth and encouraging the primary family members of adolescent mother provide social support to adolescent mother; and 4) monitoring and consultation via home visit and telephone contacts.

The two individual implementation phases of the NLSS program include phase 1: Providing health information, training adolescent mother to express her need for support after childbirth and training the primary family members of adolescent mother to provide social support, and phase 2: Encouraging adolescent mother to express her need for support after childbirth and encouraging the primary family members of adolescent mother provide social support to adolescent mother.

Usual nursing care is the nursing care that delivered to adolescent mother in the control group and the experimental group during postpartum period by staff nurses. Adolescent mothers received health information about maternal health throughout the early postpartum period, nutrition, medication, breastfeeding, preparation for infant care to home, maternal-infant complications, family planning, breastfeeding-skill training, and infant care-skill training (e.g. bathing, shampooing,

cord care, eyes care) by staff nurses at postpartum unit. After discharge from hospital, adolescent mothers received postpartum care by multidisciplinary teams or health promotion hospital staffs from health promoting hospitals. Health promotion hospital staffs provided caring activities to adolescent mother during postpartum period until 4-6 weeks after delivery by telephone contact within 7 days after delivery and home visit at least 2 times within 4-6 weeks postpartum at participants' home.

CHAPTER 2
LITERATURE REVIEWS

This research study was designed to examine the effectiveness of the NLSS program to prevent the development of postpartum depression in adolescent mothers. Related literature and researches were reviewed as presented in the following 4 sessions:

1. Adolescent pregnancy and adolescent mother
2. Postpartum depression in adolescent mother and related factors
3. Social support and postpartum depression in adolescent mother
4. Interventions for preventing postpartum depression in adolescent mother

Adolescent pregnancy and adolescent mother

1. Definition of adolescent pregnancy and adolescent mother

The World Health Organization (WHO) defines adolescent pregnancy as pregnancy in women aged 10-19 years, and also defines adolescent mother as a young woman who becomes a mother at aged 10-19 years (WHO, 2007).

2. Prevalence of adolescent pregnancy and adolescent mother

Adolescent pregnancy and adolescent mother seem to be increasing in many developing and developed countries. Every year, approximately 21 million adolescences aged 15-19 years and 2 million adolescences aged less than 15 years become pregnant in developing countries (UNFPA, 2015), and approximately 16 million adolescent mothers aged 15-19 years, and 2 million adolescent mothers less than the age of 15 years give birth every year (WHO, 2014).

The average globally adolescent birth rate among women aged 15-19 year is 44 per 1000 (World Bank, 2015). Globally adolescent birth rates range from 1 to 201 births per 1000 woman aged 15-19 based on different country (World Bank, 2015).

In developed countries, the highest rate of adolescent birth was in the United States (34 births per 1,000 females ages 15-19 years old), followed by New Zealand, and Scotland (26 and 23 births per 1,000 females ages 15-19 years old, respectively).

On the contrary, the lowest rate of adolescent birth was in Switzerland (2 births per 1,000 females ages 15-19 years old) (Sedgh et al., 2015).

For developing countries, especially in Southeast Asian countries, many countries have high adolescent birth rates. The highest birth rate of adolescence in 2015 was in Lao PDR (64 births per 1,000 females ages 15-19 years old), followed by Philippines and Thailand (59.2 and 51.7 births per 1,000 females ages 15-19 years old, respectively). On the other hand, the lowest birth rate of adolescence was in Brunei Darussalam (11.6 births per 1,000 females ages 15-19 years old), followed by Malaysia and Myanmar (13.3 and 29.4 births per 1,000 females ages 15-19 years old, respectively) (World Bank, 2015).

In Thailand, the rates of adolescent births aged 10-19 years still slightly increase each year. There was a 4 % increase in rates of adolescent births to 10-19 years from 2004 to 2013 (13.9 % to 16.8 %). In 2015, the birth rates in adolescent women aged 10-19 years were 15.3 births accounting for 679,502 births. Moreover, in 2015, Thai Public Health reports that the birth rate of adolescent pregnancy was 44.8 per 1,000 females in the aged 15-19 years, and 1.5 per 1,000 females in the aged 10-14 years (Bureau of Reproductive Health, 2015b).

3. Consequence of adolescent pregnancy and adolescent mother

Generally, adolescent pregnancy and adolescent mother are a serious public health problem that occurs worldwide both developing and developed countries. Adolescence is a transitional period of growth and development between childhood and adulthood which characterized by biological, psychological, and social changes. Adolescences who become pregnancy and become a mother during adolescent age were found not only a risk factor for poor pregnancy outcomes, but also has a negative impact on well-being for both the mother and the infant (WHO, 2007). Therefore, adolescent mothers and their infants were also more likely to increase risks of poorer health outcomes such as medical complications, psychosocial and infant developmental problems.

3.1 Medical complications

Adolescent pregnancy has been associated with negative health outcomes for both mothers and children (Kuo et al., 2010; Reime, Schucking, & Wenzlaff, 2008). Medical complications associated with adolescent pregnancy include poor

maternal weight gain, anemia, pregnancy-induced hypertension, low infant birth weight and preterm delivery (Azevedo, Diniz, Fonseca1, Azevedo, & Evangelista, 2014). These complications seem to be the greatest for the youngest adolescent pregnant (Pinzon & Jones, 2012).

After delivery, adolescent mothers were also significantly higher rate of pre-eclampsia, eclampsia, puerperal endometritis and systematic infections than adult mothers. As well as perinatal outcomes, the prevalence of preterm delivery and severe neonatal conditions were also significantly increased in younger adolescent mother compared to adult mothers. These complications seem to be the greatest for the youngest adolescent pregnant (Ganchimeg et al., 2014). Adolescent mothers were also increase the risk of preterm delivery, low birth weight and neonatal mortality. Moreover, the adolescent mother may be at an increased risk of anemia, infections, eclampsia and preeclampsia, emergency cesarean delivery, postpartum depression, and inadequate breastfeeding initiation (Jeha et al., 2015).

In Thailand, Areemit et al. (2012) conducted a study to analyze adolescent pregnancy complications, deliveries, outcomes and deaths among 80,523 younger and older adolescent pregnant women (aged 10-14 and 15-19 years, respectively) compared to women aged 20-34 years. The findings found that the preterm birth rate was 13.3 % and 6.6 % per 100 live births in younger and older adolescents, greater than the rate for women in the optimum reproductive age group (Areemit et al., 2012). In addition to adolescent pregnancy, adolescent mothers were also associated with increased risks of adverse maternal and neonatal outcomes. Thaithae and Thato (2011) who conducted a study to determine adverse outcomes after delivery among 1,354 Thai adolescent mothers aged 19 and younger. They found that adolescent mothers had higher risks of anemia, preterm deliveries, low birth weight babies, newborn admission to NICU, and postpartum complications compared to young and adult mothers aged 20-34 years (Thaithae & Thato, 2011).

3.2 Infant developmental problems

The children of adolescent mother are increased risk for premature birth, low birth weight, prenatal death, increase risk of premature birth, and more development problems (Black, Fleming, & Rome, 2012; Kaewjanta, 2012; Thaithae & Thato, 2011). Moreover, these children trend to have increased risks of emotional and

behavioural problems (Kearney & Levine, 2012) such as physical assault, growth and development delays, particularly cognitive, speech and language delays, and also have a probability of having insufficient care in nutrition and development care, poorer physical, psychological and intellectual development or high potential of abandonment than children of adult mothers (Morinis, Carson, & Quigley, 2013; Oxford & Spieker, 2006).

3.3 Psychosocial problems

In psychosocial problem, adolescent mothers face a number of challenges such as transitioning to a new role and new responsibilities as a mother (Angley et al., 2015). Therefore, adolescent mothers experience more difficulty transit to a new maternal role than adult mothers during the early-parenting period (Devito, 2007), and have problems in several aspects of their lives such as lack of support from individuals and societies, stress, low socioeconomic status, and financial problems (Cook & Cameron, 2015; Gyesaw & Ankomah, 2013; Stiles et al., 2008). Early child-bearing may have a profound impact on the well-being of adolescents, being associated with reduced educational attainment and curtailed career prospects (Paniagua & Walker, 2012).

Adolescent mothers who have low educational attainment trend to have low socioeconomics that can causes of consequently adverse outcomes such as long-term poverty, uncertain income and become unemployed. Moreover, adolescent mothers have higher rates of repeat pregnancy (Barnet, Rapp, DeVoe, & Mullins, 2010), substance use (Cavazos-Rehg et al., 2010; Shaw, Lawlor, & Najman, 2006), and domestic violence (Sue Newman & Campbell, 2011). Therefore, in terms of psychosocial problems for early motherhood, a number of studies have suggested that being adolescent mothers may be related to poorer mental health outcomes, such as psychological distress, mood disorders, or postpartum depression (Cook & Cameron, 2015; Pinzon & Jones, 2012).

According to several studies in Thailand, Thai adolescent mothers were also reported as having psychological distress such as feeling shocked, guilty, angry, ashamed, embarrassed, worried and frustrated (Neamsakul, 2008; Srisaeng, 2003; Vongjinda, 2004). Moreover, postpartum depression was found to be very common in Thai adolescent mothers during both antepartum and postpartum periods (Chaisawan

et al., 2011; Moontito et al., 2017; Nirattcharadorn et al., 2005; Srisaeng, 2003; Uthaipaisanwong et al., 2015).

Postpartum depression in adolescent mother and related factors

1. Types of postpartum mood disorders

The postpartum period is a vulnerable time to the rapid hormonal changes posited to contribute postpartum mood disorders. Postpartum mood disorders can be grouped into three categories: Postpartum blues, postpartum depression, and postpartum psychosis (Nonacs, 2005; Vesga-López et al., 2008). It is important to distinguish each category of postpartum mood disorders.

1.1 Postpartum blues

Postpartum blues, also known as maternity blue or baby blues, is considered a normal reaction to the physiological changes that occur following childbirth due to dramatically drop in estrogen and progesterone level after childbirth. Postpartum blues is a phase of emotional lability which occurs within the first ten days, peak around 3 to 5 days after delivery lasting no longer than 2 weeks and usually resolve within a few days without intervention (Beck, 2006; O'Hara, 2009). Postpartum blues is the most common of postpartum mood disorders in women following childbirth which reported to occur in 30-85 % of women, with a peak occur on the fourth to fifth day (O'Hara, 2009). Common symptoms of postpartum blues include frequent crying episode, mood swings, irritability, feelings of sadness, feeling overwhelmed, anxiety, sleep and appetite disturbance, fatigue, and confusion (Pearlstein, Howard, Salisbury, & Zlotnick, 2009). However, if the symptoms persistent for more than 2 weeks and become markedly worse, the woman should be considered to develop postpartum depression (Logsdon, Tomasulo, Eckert, Beck, & Dennis, 2012).

1.2 Postpartum depression

Postpartum depression is one of postpartum mood disorders for women both adolescence and adult mothers during the postpartum period. Postpartum depression, a more serious disorder, usually develops in the weeks to months after childbirth (Chaudron, Szilagyi, Kitzman, Wadkins, & Conwell, 2004) which is

characterized by the symptoms of depressed mood, sleep disturbance, and poor functioning (Patel et al., 2012).

1.3 Postpartum psychosis

Postpartum psychosis [PPP] is refers to a psychiatric and obstetrical emergency, and the most severe disorder of postpartum mood disorders which is a rare incidence with occurs 1-2 cases per 1,000 postpartum women (Patel et al., 2012). Postpartum psychosis is characterized by agitation, severely depressed mood, sleep disturbance, delusions, hallucinations, and other psychotic symptoms (Patel et al., 2012). The onset of postpartum psychosis is generally occurs within 2 to 4 weeks after delivery and usually peaks in the first two weeks after childbirth (Patel et al., 2012). Postpartum psychosis must consider hospitalization to require immediate treatment for the symptoms due to the risk of the dangerous situations of patient and infant such as suicide and infanticide (Patel et al., 2012).

2. Definition of postpartum depression

Postpartum depression [PPD] among adolescent mothers is an important public health problem worldwide both developing and developed countries. The Diagnostic and statistical manual of mental disorders, the fifth edition (DSM-V) defined postpartum depression as “a major depressive disorder with onset during pregnancy or within the first 4 weeks after delivery” (APA, 2013).

However, many previous researches found the onset of postpartum depression occurred within the first 6 months after delivery. For example, O’Hara, Stuart, Gorman, and Wenzel (2000) found that at least one-third of women report the onset of postpartum depression at 2-6 months after delivery. Among adolescent mothers, about one-third and more than half (36.7 % to 57 %) have scores that indicated depression at 3 months after delivery (Brown et al., 2012; Schmidt et al., 2006). Considering the onset of postpartum depression, therefore, most experts in the field defined postpartum depression as a depression that occurs within the first 6 months after delivery (Jones et al., 2010; Miller, 2002; O’Hara & Gorman, 2004; Phipps et al., 2013; Zlotnick et al., 2016).

In the study, therefore, postpartum depression is defined as a major depressive disorder that occurred within the first 6 months after delivery.

3. Prevalence of postpartum depression in adolescent mother

The prevalence of postpartum depression varies, based on the lack of consistent definitions of PPD including unclearly definitions of the onset of symptoms and the time frame of the postpartum period (Beck, 2006). The prevalence of postpartum depression have been reported between 7 % and 15 % in adult women (Anderson & Maes, 2013; Gavin et al., 2005; Rich-Edwards et al., 2006; Vesga-López et al., 2008).

However, the prevalence of postpartum depression in adolescent mothers have a higher rate than adult mothers (Cook & Cameron, 2015; Figueirrdo et al., 2006; Lanzi et al., 2009; Mollborn & Morningstar, 2009). For example, in a large cross-sectional study of 6,421 women in Canada, Kim et al. (2014) found adolescent mothers (14 %) had higher experienced postpartum depression than adult mothers (7.2 %). According to the study in Sweden, Wahn and Nissen (2008) found that adolescent mothers report a rate of postpartum depression higher than adult mothers (32 % and 16 %, respectively). Figueiredo et al. (2007) found a higher rate of postpartum depression among Portugal adolescent mothers (25.9 %) compared to adult mothers (9.3 %) at 2-3 months postpartum. Another study in the United States, Nunes and Phipps (2013) also found that adolescent mothers and young adult mothers (ranged age from 20-24 years) were more depressed than adult mothers over the age of 25 years.

Worldwide, therefore, approximate 10 to 57 % of adolescent mothers reported postpartum depression during postpartum period (Birkeland et al., 2005; Meltzer-Brody et al., 2013; Schmidt et al., 2006; Venkatesh et al., 2014). For example, in the United States, Schmidt et al. (2006) found 36.7 % of adolescent mothers report postpartum depression at 3 months after childbirth, 21.1 % at 48 months, and 57 % for 4 years postpartum. Another study in the United States, Meltzer-Brody et al. (2013) found 10 % of adolescent mothers develop the postpartum depressive symptoms at 6 weeks of postpartum period. Similar to other study in the United States, Venkatesh et al.(2014) also found 19 % of adolescent mothers have postpartum depressive symptoms at 6 months postpartum. In a large cross sectional study of 8,049,088 adolescent mothers in Mexico, Lara et al. (2012) found 2.3 % of mothers report postpartum depression at immediate to 6 months

postpartum, 13.6 % at 7 to12 months postpartum, and 4.6 % at more than 1 year postpartum.

Especially, in Thailand, many results indicated that approximate half of the adolescent mothers had postpartum depression after childbirth. For example, Srisaeng (2003) found the prevalence of postpartum depression in adolescent mothers aged 14-19 year is 54.6 % at 6 weeks postpartum. Similarly, the study of Nirattcharadorn et al. (2005) found 54.7 % of adolescent mothers report postpartum depression at 6 weeks after childbirth. Another study of Chaisawan et al. (2011) found 41.6 % of adolescent mothers had postpartum depression at 6 to 8 weeks after childbirth. According to the study of Moontito et al. (2017) found 42.35 % of adolescent mothers aged younger than 18 years report postpartum depression at 6 weeks postpartum.

Summary, the prevalence of postpartum depression in adolescent mothers have higher rate than adult mothers (14-32 % in adolescent mothers, and 7.2-16 % in adult mothers). Several studies reported that approximate 10-57 % of adolescent mothers were experienced postpartum depression after delivery, and the prevalence of postpartum depression in Thai adolescent mothers was 41.67-54.71 %.

4. The timing of postpartum depression

Based on the American Psychiatric Association (APA, 2013), the onset postpartum depression can occur during pregnancy or within the first 4 weeks after delivery. However, many studies found the onset of postpartum depression can occur within the first three and six months after delivery.

For example, O'Hara and McCabe (2013) found the first six months after childbirth may represent a high-risk time for developing postpartum depression. Similarly, Gjerdingen, Crow, McGovern, Miner, and Center (2011) conducted a prospective study to investigate mothers' changes in prevalence of postpartum depression over 0-9 months postpartum at 0-1, 2, 4, 6, and 9 months after delivery. The findings showed that the proportion of postpartum depression was greatest at 0-1 month (12.5 %), then fell to between 5.0 % and 7.1 % at 2-6 months and rose again to 10.2 % at 9 months postpartum. Therefore, the results indicated that postpartum depression was most frequent at first one month and 9 months after Furthermore, Iwata et al. (2016) conducted a prospective cohort study to examine

changes in the prevalence of depressive symptoms during the first 6 months postpartum at 1, 2, 4, and 6 months after delivery. The results indicated that the highest prevalence of postpartum depression was occurred at the first one month after childbirth, and then slightly decreased from one month to two months and again from four months to six months after birth. Similar to another study, Fiala, Švancara, Klánová, and Kašpárek (2017) conducted a prospective longitudinal cohort study to identify the main risk factors for developing postpartum depression at three time points: before delivery, 6 weeks after delivery, and 6 months after delivery among 3233 mothers. They found the prevalence of depressive symptoms before delivery was 12.8 %, 6 weeks after delivery was 11.8 %, and 6 months after delivery was 10.1 %.

Another study, Lobato, Moraes, Dias, and Reichenheim (2011) reported that a peak onset of postpartum depression existed around three months after delivery. According to other studies, Perfetti, Clark, and Fillmore (2004) found that more than half (40-67 %) of women with postpartum depression occurred within the first three months postpartum, and 30-70 % of mothers may experience depression for longer than one year.

Other studies in adolescent mothers, Brown et al. (2012) conducted a longitudinal study to examine the association between social support and postpartum depressive symptoms among adolescent mothers at one month, three months, and one year after birth. They found the prevalence of postpartum depression in adolescent mothers was 53 % at one month, 57 % at three months, and 57 % at one year. Similarly, Schmidt et al. (2006) conducted a prospective study to examine race/ ethnic differences in depressive symptoms among 623 adolescent mothers during the first four years postpartum. They found that more than half (57 %) of adolescent mothers reported moderate to severe depressive (MSD) symptoms during the four-year period. The prevalence of MSD symptoms was highest at three months (36.7 %) and steadily declined through 48 months (21.1 %) for all race/ ethnic groups (Schmidt et al., 2006).

In conclusion, several studies reported that the prevalence of postpartum depression in adolescent mothers and adult mothers was steadily increased through three months, and then slightly decreased through 12-48 months postpartum. The

prevalence of postpartum depression was 12.5 % at the first month, 11.8 % at 6 weeks, and was highest at three months (36.7-57 %) after delivery.

5. Consequences of postpartum depression in adolescent mother

Postpartum depression has significant consequences not only for adolescent mothers experiencing the depression, but also infants, and significant other. It is associated with poor maternal and infant outcomes. Postpartum depression can negative affect the interpersonal relationship between the mother and the infant, which can impact on the marternal-infant interaction, and the mother's ability to care, transit to the parenthood, make relationships, and cope with the stressors, as well as effect on the child development and health such as cognition, social, and interpersonal functioning (Driscoll, 2006; Jolley & Betrus, 2007; McGarry, Kim, Sheng, Egger, & Baksh, 2009; O'Hara, 2009; Wang & Chen, 2006).

Moreover, postpartum depression also has a significant negative impact on the mother's attitude to select breastfeed, exclusive breastfeeding, and duration of breastfeeding (Thome, Alder, & Ramel, 2006). For example, McLearn et al. (2006) determined the association between maternal depressive symptoms and mothers' early parenting practices at 2 to 4 months after childbirth among 3,412 mothers. They found depressed mothers had lower the rate of continuing breastfeeding at 2 to 4 months compared non-depressed mothers.

The mothers who experienced postpartum depression may be less ability to respond and interact with their infants, and have greater difficulty abilities for infant feeding, learning infants' crying, and overall significant skills than non-depressed mothers (Goodman & Brand, 2008), as well as interrupt the mother's abilities to interpret their infant's cues, utterances, and facial expressions, and may lead to develop insecure attachment and negative relationship and between the mother and the infant (O'Hara, 2009; Tronick & Reck, 2009). For example, McLearn et al. (2006) found that mothers with depressive symptoms had less positive parenting's practices to promote child development such as showing books, playing and talking with the child than non-depressed mothers. Similarly, Reid and Meadows-Oliver (2007) also found depressed adolescent mothers experience psychological and emotional withdrawal, which may lead the mothers to poor interactions with their children and have a more negative attitude of motherhood.

The depressed mothers who have negative relationship with the infants attributed the difficult temperament of the infant, and also have predicted the negative temperament and behavior problems of the infants in eighteen months after childbirth (Forman et al., 2007). Therefore, the mother's negative relationship and interaction with their infants may lead to longer-term consequences for the infant such as emotional and cognitive development of the infant (O'Hara, 2009). The infants of depressed mothers also have a greater incidence of less attachment, colic, sleep problems, temperaments, long term behavioral problems, and also increase the risk of development of anxiety or depressive symptoms in infants later in life than the infants of non-depressed mothers (Goodman & Brand, 2011; Letourneau et al., 2006; Patel et al., 2012).

Furthermore, the infants of depressed adolescent mothers can also experience negative outcomes and negative developmental effects. Meadows-Oliver and Sadler (2010) found children of mothers with more severity of depressive symptoms have higher emotional and social problems and have lower language skills compared to children of mothers with less severity of depressive symptoms. Similarly, Hodgkinson, Beers, Southammakosane, and Lewin (2014) also found the association between maternal depression and insecure attachment in young children.

Postpartum depression have negative impacts on the women both adolescent and adult mothers which can affect ability and quality of caring, parenting, nurturing for the infants (Birkeland et al., 2005; Morrell, 2006; Reid & Meadows-Oliver, 2007). For example, Cox et al. (2008) examined the associations between depressive symptoms and perceived maternal care abilities in adolescent mothers. The adolescent mothers who had postpartum depression were associated with decreased maternal confidence in the parenting abilities to care their infants (Cox et al., 2008).

Moreover, depressive symptoms can effect on poor parenting practices which led to negative feeding and behavioral interactions, and behavioral problems of children in preschool (Reid & Meadows-Oliver, 2007). For example, Huang et al. (2014) investigated the influence of parenting stress and perceived social support on maternal depression at 6 and 18 months after childbirth in 180 African American and Latina adolescent mothers. The adolescent mothers who have higher levels of depression were associated with poorly delayed infants' development at 18 months after delivery

(Huang et al., 2014). According to the study of Lanzi et al. (2009) examined the effect of maternal depression on mother's parenting and children's development among first time adolescent and adult mothers. Adolescent mothers with postpartum depressed have been shown less positive parenting skills to care the infants and the infants have increased negative behaviors to interact with the adolescent mothers (Lanzi et al., 2009). Similarly, Yozwiak (2010) suggested that the first time mothers with postpartum depression can impair the emotional, social, and cognitive development of children.

Furthermore, postpartum depression can also affect the health behaviors of the mothers. The depressed mothers may be a higher risk to develop unhealthy behaviors such as excessive consumption of alcohol and substance abuse including cigarettes and illicit drugs (Ross & Dennis, 2009; Strat, Dubertrat, & Foll, 2011; Whitaker, Orzol, & Kahn, 2007). Moreover, postpartum depression is an important factor of the mother for subsequent risk of depression in later life (Dennis et al., 2012).

6. Measurement of postpartum depression

There are many measurements used to measure depression. Some of the more common scales that were found in the literature on depression in adolescent mothers are presented in this section.

6.1 Edinburgh postnatal depression scale

The Edinburgh postnatal depression scale [EPDS] was specifically developed By Cox et al. (1987) to screen the postpartum depressive symptoms. The EPDS tool was the most common measurement for screening depression related to childbearing. This tool contains 10-item self-report which is a commonly used screening instrument for the symptoms of perinatal and postpartum depression. The 10-item of EPDS measures on a 4-point Likert scale for each item, scored between 0 and 3, a potential score range from 0-30, with higher scores indicating greater severity of depressive symptoms. The items include statements relating to feelings of mothers experienced during the previous seven days and evaluate depressed mood, anhedonia, guilt, anxiety and suicidal ideation. The EPDS tool is self-administered that ask a woman may or may not have experienced in the past week, such as sadness, anxiety or worry, difficulty sleeping, and lack of enjoyment of activities. The tool can be completed in approximately 5 minutes.

The recommended a cut-off score of ≥13 was identified the depressive symptoms during pregnancy and postpartum period. The EPDS score of greater than or equal to 13 can identify approximately 80 % of mothers with major depressive disorder (Cox et al., 1987). However, the EPDS has been translated into many languages and tested in various population samples in a variety of countries. For each translated EPDS version, a cut-off score is recommended (Department of Health & Government of Western Australia, 2006). Moreover, the cut-off score for indicating the positive PPD is not consistent for each translated EPDS version because the sensitivity and specificity was not consistent across the studies (Hilli, 2011). Therefore, it is necessary to consider that the cut-off score should be set at different levels for different countries (Nishimura & Ohashi, 2010).

For using in adolescent mother, Logsdon and Myers (2010) suggested that decreasing the cut-off score of EPDS should be used for screening postpartum depression among adolescent mothers because the EPDS screening instrument behaves differently in adolescent mothers compared to screen postpartum depressive symptoms in adult mothers. Similar, Venkatesh, Zlotnick, Triche, Ware, and Phipps (2014) recommended that the optimal cutoff scores for screening positive for postpartum depression among adolescent mothers may need to be lowered from current standard cutoff scores. Moreover, the EPDS tool was the best measurement to use in screening postpartum depression among adolescent mothers compared to the CES-D (Logsdon & Myers, 2010).

This tool was translated and validated in Thai version by Vacharaporn et al. (2003). In Thailand, however, the EPDS score ≥11 will be considered to have PPD (Vacharaporn et al., 2003).

6.2 The center for epidemiologic studies depression scale

The venter for epidemiologic studies depression scale [CES-D] was developed by Radloff (1977) to screen for evidence of the depressive symptoms in the general population. The CES-D scale contains 20-item self-report depressive symptoms which is a commonly used screening instrument for the current level of depressive symptoms occurring during the past week. This tool contains four major types of depressive symptoms: Depressed affect (item 3, 6, 9, 10, 14, 17, 18), positive

affect (item 4, 8, 12, 16), somatic and retarded activity (item 1, 2, 5, 7, 11, 13, 20), and interpersonal relationship (item 15, 19). The 20-item of CES-D measures on a 4-point Likert scale for each item, scored ranging from 0 to 3: 0 “rarely or none of the time (less than once a week)”, 1 “some or a little of the time (1-2 days a week)”, 2 “occasionally or a moderate amount of time (3-4 days a week)”, or 3 “most or all of the time (5-7 days a week)”.

The 20-item of CES-D scale consist of negative items and positive items, sixteen items (1, 3, 5, 6, 7, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20) of the symptoms are negative items, and the other four items (4, 8, 12, 16) are positive items. A potential score ranges from 0-60, with higher scores indicating greater severity of depressive symptoms (Radloff, 1977). The recommended a cut-off score of ≥16 was indicated the evidence of depressive symptoms (Radloff, 1977). The reliability for the instrument ranged from .84 to .90 (Radloff, 1977). Moreover, the high reliability of the CES-D scale has been also reported in the studies of pregnant and postpartum women both adolescence (Logsdon et al., 2004; Wilcox, Field, Prodromidis, & Scafidi, 1998) and adult (Logsdon, 2002). For example, Logsdon et al. (2005) reported that the coefficient alpha value of the CES-D scale in postpartum adolescent mothers was 0.84.

This tool was translated in Thai version by Trangkasombat, Larpboonsarp, and Havanont (1997). In Thai version of CES-D instrument to screen depression in adolescent mother populations, the CES-D score ≥16 also considered to have depressive symptoms (Chaisawan et al., 2011; Srisaeng, 2003). The reliability for the instrument was ranging from .87 to .88 in Thai postpartum adolescent mothers (Chaisawan et al., 2011; Srisaeng, 2003).

6.3 Beck depression inventory and Beck depression inventory-II

The Beck depression inventory [BDI] is a 21 item self-report questionnaire that used to measures the severity of depression. The 21- item of BDI measures on a 4-point Likert, scored ranging from 0 to 3, a potential score range from 0-63 (Panzarine, Slater, & Sharps, 1995), with higher scores indicating greater severity of depressive symptoms which are categorized into 5 groups including exhibiting no depressive symptoms (0-9 scores), mild symptoms (10-15 scores), mild

to moderate symptoms (16-19 scores), moderate to severe symptoms (20-29 scores) and severe symptoms (30-63 scores) (Panzarine et al., 1995; Secco et al., 2007).

The Beck depression inventory-II (BDI-II) is a revision version of the BDI that was developed to measures the severity of depressive symptoms according to the DSM-IV criteria for diagnosing depressive disorders (Smarr & Keefer, 2011). The BDI-II can be used for screening the severity of depressive symptoms both in adults and adolescents over the age of 13 years, but was not specifically designed to use for screening postpartum depression (Beck & Gable, 2000, 2001). Therefore, the BDI and BDI-II instruments can be used with subjects who are 13 years of age or older. This tool is also contained a 21 item self-report questionnaire and also measures on a 4-point Likert, scored ranging from 0 to 3 with scores range from 0-63. The cut-off point scores >13 are identified as mild depressive symptoms (Meadows-Oliver & Sadler, 2010).

6.4 Postpartum Depression Screening Scale

The Postpartum Depression Screening Scale (PDSS) was developed by Beck and Gable (2000). The PDSS is a 35-item self-report measurement that used to assesses seven domains of depressive symptoms existing in the past two weeks including sleeping/ eating disturbances, anxiety/ insecurity, emotional lability, cognitive impairment, loss of self, guilt/shame, and contemplating harming oneself (Beck & Gable, 2000). The 35-item PDSS measures on a 5-point Likert scale for each item, scores ranged from 1 to 5, where (1) is strongly disagree, and (5) is strongly agree, a potential score range from 35-175. Beck and Gable (2000) reported construct validity and content validity of the PDSS, and found internal consistency reliability of the PDSS were .87.

In conclusion, in the study, postpartum depression among adolescent mothers were screened by using the EPDS in Thai version, and the EPDS score $\geq$13 was considered to have postpartum depression. Because the EPDS tool was too short 10-item self-report questionnaire and can be completed in approximately 5 minutes. Users such as patients and healthcare professionals reported that the EPDS tool was “easy or fairly easy” to complete (Buist et al., 2006). Moreover, the tool was the most commonly used tool for screening postpartum depression in general health surveys and clinical practice (Chaudron et al., 2004; Hilli, 2011), and was the best

measurement to use in screening postpartum depression among adolescent mothers compared to the CES-D (Logsdon & Myers, 2010).

7. Causes of postpartum depression in adolescent mother

The risk factors of postpartum depression are very diverse and multifactorial. Significant risk factors and predictors of postpartum depression have been well reported in previous studies (Beck, 2006) and can be used to encourage early screening and develop appropriate intervention for postpartum depression (Driscoll, 2006). The risk factors for developing postpartum depression include biological factors, psychologial factors, and psychosocial factors.

7.1 Biological factors

The biological factors include reproductive hormones (Douma et al., 2005), hormonal fluctuations during pregnancy (Payne et al., 2009; Schiller et al., 2015), stress hormones (Glynn, Davis, & Sandman, 2013), hypothalamic-pituitary-adrenal dysregulation, inflammatory processes, and genetic vulnerabilities (Yim, Stapleton, Guardino, Hahn-Holbrook, & Schetter, 2015). Several studies suggest that reproductive hormonal imbalances after delivery can cause the development of postpartum depression in women. Patel et al. (2012) suggest that the reproductive hormones levels including estrogen, progesterone, and cortisol which dramatically drop after delivery may be a strong correlation to the development of postpartum depression.

7.2 Psychological factors

Several previous studies found a strong association between the development of postpartum depression and women with a history of depression which included personal history or familial history of depressive symptoms (Bloch, Rotenberg, Koren, & Klein, 2006; Rich-Edwards et al., 2006). Similarly, Henshaw, Foreman, and Cox (2004) found women with a past history of depression are more likely six times to develop postpartum depression. Additionally, several researchers have also indicated that depression during pregnancy is one of the strongest predictors of postpartum depression (Robertson et al., 2004).

According to the meta-analyses which conducted by Robertson et al. (2004) indicated that depression during pregnancy was the strongest predictor of postpartum depression (d = 0.75). Similarly, Figueiredo et al. (2007) examined the prevalence and

risk factors of prenatal and postpartum depression in 54 adolescent and 54 adult Portuguese mothers at 24-36 weeks of pregnancy and at 2-3 months postpartum. Adolescent mothers reported more depressive symptoms with positive depression scores of ≥12 on the EPDS than adult mothers, both in prenatal (25.9 % vs. 11.1 %) and at 2-3 months after delivery (25.9 % versus 9.3 %). Women with depressive symptoms during pregnancy, and ones who are under 18 years old and who live with the partner, were associated with risk factors for the development of postpartum depression with EPDS scores >12 (Figueiredo et al., 2007).

In accordance with the study in Thai adolescent mothers, Nirattcharadorn et al. (2005) conducted a prospective study to determine whether self-esteem, social support and antepartum depression influence on postpartum depression among 340 Thai adolescent mothers ages less than 20 years. The findings suggested that adolescent mothers with antepartum depression had significantly positive direct influence on postpartum depression ($\beta = -.73$, $p < .001$). Moreover, approximately 89.37 % of adolescent mothers who experienced depression during pregnancy also experienced postpartum depression (Nirattcharadorn et al., 2005).

7.3 Psychosocial factors

Based on epidemiological studies and meta-analyses of predictive studies, the importance factors of postpartum depression are consistently highlighted in the psychosocial risk factors (Beck, 2001; O'Hara & Swain, 1996). Many studies have shown psychosocial factors such as antenatal anxiety, antenatal depression, stressful life events, and low/ lack of social support are associated with high risk factors for developing postpartum depression (Matthey et al., 2003; Robertson et al., 2004). Moreover, other psychosocial factors include single marital status, poverty, low socioeconomic status (SES), and unplanned or unwanted pregnancy are also considered as the risk factors of postpartum depression (Beck, 2001; Figueiredo et al., 2007; Fletcher, 2009; Meltzer-Brody et al., 2013; Schmidt et al., 2006; Segre et al., 2007; Sheng, Le, & Perry, 2010; Sorenson & Tschetter, 2010).

Similarly, Dinwiddie, Schillerstrom, Demla, Mendiola, and Schillerstrom (2015) conducted a systematic review conducted in 39 studies to determine the epidemiology, risk factors, long-term impact, and treatment of postpartum depression in adolescent mothers. The prevalence of postpartum depression in adolescent

mothers ranged from 8 %-68 %. Prior depression, physical or sexual abuse, perceived low social support, level of education, low self-esteem, socioeconomic status, and parental stress were significant risk factors of postpartum depression in adolescent mothers (Dinwiddie et al., 2015).

Moreover, several studies have reported the association between stress and severity of depressive symptom in adolescences (Hampel & Petermann, 2006). Logsdon, Ziegler, Hertweck, and Pinto-Foltz (2008) suggested that stress was the strongest predictor of postpartum depression in adolescent mothers among various variables including social support, community violence, mastery, self-esteem, and social network.

7.3.1 Low socioeconomic status

The findings from meta-analytic studies found that low socioeconomic status is related to depression (Lorant et al., 2003). Secco et al. (2007) conducted a longitudinal study on 78 healthy adolescent mothers recruited from two university teaching hospitals in Western Canada. Postpartum depressive symptoms in adolescent mothers were significantly influenced by socioeconomic status and anticipated infant care emotionality (Secco et al., 2007).

According to Bodur, Özdemir, and Ayvaz (2010), who conducted a study to evaluate the incidence of postpartum depression, and its association with gestational age and sociodemographic features in 135 adolescent mothers in Turkey. Approximately 41.4 % of adolescent mothers had positive depression scores of ≥13 on the EPDS. In the logistic regression analysis, maternal age, economic status, living with a small family, prenatal care of baby, and mode of delivery were significantly related factors of postpartum depression in adolescent mothers (Bodur et al., 2010). Another study by Figueiredo et al. (2007) also found that socio-demographic factors were related risk factors of prenatal and postpartum depression in adolescent mothers.

7.3.2 Self-esteem

Self-esteem has also one of the strongest predictors of postpartum depression. Beck's (2001) conducted a meta-analysis of 84 studies to examine the predictors of postpartum depression. The findings reported a moderate relationship between PPD and self-esteem (r = 0.45 to 0.47).

For Thai adolescent mothers, Srisaeng (2003) conducted a study to determine the relationship between self-esteem and stressful life events with postpartum depression among 119 Thai adolescent mothers ages 14 to 19 years. The findings indicated that self-esteem (β = -.368, $p < .000$) and negative stressful life events (β = .451, $p < .000$) were significant predictors of postpartum depression at six weeks postpartum (Srisaeng, 2003). Similarly, Nirattcharadorn et al. (2005) conducted a prospective study to determine whether self-esteem, social support and antepartum depression influence on postpartum depression among Thai adolescent mothers ages. The authors found that self-esteem and social support are significantly negative direct influence on postpartum depression among adolescent mothers (Nirattcharadorn et al., 2005).

7.3.3 Parenting stress

Numerous studies also found the relationship between postpartum depression and parenting stress among adult mothers (Cornish et al., 2007; Forman et al., 2007). For example, Venkatesh et al. (2014), who conducted the study to examine the relationship between parental stress and postpartum depression among 106 primiparous adolescent mothers. The findings suggested that adolescent mothers who reported higher levels of parental stress were at significantly increased risk for developing postpartum depression among adolescent mothers [AOR 1.06 (95 % CI 1.04-1.09); $p < 0.0001$] (Venkatesh et al., 2014).

Especially Thai adolescent mothers, childcare stress had been also reported as a predictor of postpartum depression. Chaisawan et al.(2011) conducted the study to examine the predictors including age, perception of maternal competency, child care stress, and social support on postpartum depression among 84 Thai adolescent mothers. The authors suggested that perception of maternal competency (β = - .39) and child care stress (β = .41) are the significant predictors of postpartum depression in Thai adolescent mothers (Chaisawan et al., 2011).

7.3.4 Stressful life events

Robertson et al. (2004) found that stressful life events during pregnancy and after delivery have a strong predictors of development of postpartum depression (d = 0.61). Beck (2001) also reported that stressful life events have a moderate predictor of postpartum depression (r = 0.36 to 0.41). Similarly, Patel et al.

(2012) also found stressful life events during pregnancy and in the previous 12 months can increase risk for the development of postpartum depression. Unemployment, marital conflict, child-care issues, and infant health-issues have been found to be the stressful life events that contribute the risk factors of postpartum depression (Patel et al., 2012).

For adolescent mothers, pregnancy and parenting roles itself may be associated with a stressful life event, because adolescent mothers may not well prepared to handle the parenting role. More stresses during pregnancy and early postpartum period may lead adolescent mothers to develop high risk for depression compared to adult mothers or non-childbearing women. Therefore, adolescent mothers' perceptions of parenting stress may be associated with postpartum depression (Secco et al., 2007).

7.3.5 Anxiety

Anxiety among adult mothers is recognized as a significant correlate factor of depression, with estimates of prevalence varying from 6.1 to 27.9 % (Britton, 2005; Reck, Stehle, Reinig, & Mundt, 2009; Wenzel, Haugen, Jackson, & Brendle, 2005) and rates of anxiety may be higher among adolescent mothers compared adult mothers. Gilson and Lancaster (2008) found that approximately 41.7 % and 46.8 % of adolescent mothers exhibited elevated anxiety at 6 weeks postpartum and at 6 months postpartum, respectively. Anxiety symptoms during pregnancy may also have associated with depression symptoms. Sutter-Dallay, Giaconne-Marcesche, Glatigny-Dallay, and Verdoux (2004) found that diagnosed prenatal anxiety disorder increases the risk of elevated severity of postpartum depression symptom. Based on the high rates of anxiety among adolescent mothers, adolescents may be more likely to develop depression symptoms, as well as more severe depression symptoms compared to adult mothers. Similarly, Kleiber (2013) suggested that postpartum depression among adolescent mothers was predicted by perceived stress and severity of postpartum anxiety symptom.

7.3.6 Poor partner relations

A poor relationship with the father of the child can lead mothers to stress and sadness which can contribute to depressive symptoms. Beers and Hollo (2009) suggested poor partner relationships are associated with increased rates of

depression. Moreover, several studies also reported that marital conflict or marital dissatisfaction has been correlated with the development of postpartum depression (Robertson et al., 2004). Similarly, Katz et al. (2008) determined the associate risk factors of postpartum depression in 187 African American and Hispanic adolescent mothers in the United States. At postpartum period, approximately 28 % of the minority adolescent mothers reported the postpartum depressive symptomatology. In the logistic regression analysis, conflict with boyfriend was the strongest predictor of postpartum depression (OR 8.9, CI 4.1-19.4) in African American and Hispanic adolescent mothers (Katz et al., 2008).

8. Management of postpartum depression

Untreated maternal depression can have a negative effect on child development, mother-infant bonding, and risk of anxiety or depressive symptoms in infants later in life (Patel et al., 2012). Managements of postpartum depression are a vital part of adequate medical care and have a variety of managements, which include antidepressants, hormone therapy, psychological therapy, psychosocial therapy. Therefore, standard treatments for postpartum depression include pharmacologic therapy and non-pharmacologic therapy (Breese McCoy, 2011).

8.1 Pharmacologic therapy for postpartum depression

8.11 Antidepressants medication

Pharmacologic therapy or antidepressants medication is recommended for women who experienced moderate to severe depressive symptoms during postpartum period or women who failed to treat postpartum depression with psychological therapy or psychotherapy. Postpartum depression can be thought of as a variant of major depression that responds similarly to antidepressant medication (Payne, 2007; Pearlstein, Howard, Salisbury, & Zlotnick, 2009). Concerns unique to pharmacologic treatment of postpartum depression include metabolic changes in the postpartum period, exposure of the infant to medication in breast milk, the effect of depression and treatment on the ability of the depressed mother to care for a new baby, and the perceived stigma for requiring medication (Sit, Perel, Helsel, & Wisner, 2008; Turner, Sharp, Folkes, & Chew-Graham, 2008). These factors, as well as the woman's level of distress, access to care, and experience with past treatment may influence the decision of the patient and her caregiver regarding the choice of

pharmacologic and non-pharmacologic treatments for postpartum depression (Fitelson, Kim, Baker, & Leight, 2011).

Antidepressant medications should be started at a low dose and increased slowly. Mothers starting a medication should be asked to monitor their infants before and after starting the medication to ensure there are no behavioral changes, particularly in infants with any health problems (Guille, Newman, Fryml, Lifton, & Epperson, 2013).

In complex cases of depression with suicidal or homicidal ideation, consultation with a mental health professional is also imperative. Health care professions should inquire about suicidal and homicidal ideation in all postpartum women. Commonly employed questions include “Have you recently had thoughts about harming yourself or your baby?” or “Have you recently had thoughts that you or your baby would be better off dead?” Historical risk factors include previous suicide attempts or a family history of suicide, history of impulsive behaviors, or hospitalization or violence within the last year (Nock et al., 2008). Proximal risk factors include social isolation, current drug abuse, acute psychosis and recent family or romantic conflicts or legal problems (Nock et al., 2008). Women at high risk should be immediately evaluated by a mental health professional or taken to an emergency room for psychiatric evaluation.

8.1.2 Hormone therapy

There is a dramatic drop in maternal levels of estrogen and progesterone at the time of delivery, and this shift has been proposed as one trigger for the onset of postpartum depression in some women. Effects of estrogen in the brain include the promotion of neuronal growth and survival, enhancement of neurotransmitter activity, mitigation of oxidative stress and modulation of the hypophyseal-pituitary axis (Moses-Kolko, Berga, Kalro, Sit, & Wisner, 2009).

8.2 Non-pharmacologic therapy for postpartum depression

8.2.1 Psychological and psychosocial therapy

Many mothers with postpartum depression are hesitant to take antidepressants due to concerns about infant exposure to medication through breast milk or concerns about potential side effects (Dennis & Chung-Lee, 2006), and therefore often prefer psychosocial or psychological treatment (Turner et al., 2008;

Pearlstein et al., 2006). Psychotherapy or psychosocial therapy is considered first-line treatment for women with mild to moderate postpartum depression, whereas psychotherapy is often combined with antidepressant medication in women with severe symptoms (Yonkers, Vigod, & Ross, 2011). Moreover, psychotherapy can also be used as adjunct therapy with antidepressant medication in moderate to severe postpartum major depression. In women with severe postpartum depression that is refractory to medication or who have contraindications to medication use, electroconvulsive therapy is effective (Yonkers et al., 2011). Individual or group psychotherapy is an effective treatment for mild to moderate postpartum major depression (Dennis & Hodnett, 2007).

The most commonly used psychotherapy modalities are interpersonal therapy and cognitive behavior therapy. Several results from previous studies supported both psychotherapy and other psychosocial interventions as effective in mitigating symptoms of postpartum depression. Interpersonal psychotherapy, cognitive behavioral therapy, psychodynamic psychotherapy and other supportive interventions such as telephone-based peer support, counseling by a health visitor, and partner support have also shown benefit over wait-list or usual care controls (Crockett, Zlotnick, Davis, Payne, & Washington, 2008; Fitelson et al., 2011; Grote et al., 2009;).

Interpersonal therapy [IPT] is a short-term psychotherapy focusing on the present and emphasizing the interpersonal context in which depressive symptoms occur. The goal of IPT is to help patients identify and modify interpersonal difficulties by better understanding themselves and their current roles and relationships with others ie, partner, family members, friends (Dennis & Dowswell, 2013; Jones & Shakespeare, 2014). IPT originally was developed to treat major depressive disorder (MDD) in a general adult population, but has been adapted to treat women during the perinatal period (Spinelli & Endicott, 2003).

Cognitive-Behavioral Therapy [CBT] is a short-term psychotherapy combining components from cognitive therapy and behavior therapy (Werner, Miller, Osborne, Kuzava, & Monk, 2015).-Individuals are assisted in identifying maladaptive or faulty thinking patterns that result in negative emotions and behaviors. Treatment

focuses on changing maladaptive thought patterns in order to improve emotional state and behavior. Individuals also work to engage in positive activities that improve mood and thought patterns (Jones & Shakespeare, 2014; Werner et al., 2015). CBT helps individuals recognize the interplay between their thoughts, emotions and behaviors (Langan & Goodbred, 2016).

Other psychosocial interventions such as family support, partner support, telephone-based peer support, and counseling or advice by a health visitor are also considerate as treatment for women with mild to moderate postpartum depression (Langan & Goodbred, 2016). Involving supportive family members to provide care for depressed women can be beneficial. A family member can often provide insights about the patient's behaviors that help the patient recognize the need for treatment. Further, family members are willing to help with childcare or other logistical or practical barriers that often prevent women from getting treatment (Langan & Goodbred, 2016).

8.2.2 Risks and Benefits of Treatment

Women who are pregnant or breastfeeding may be reluctant to start medication for fear of harming their child. A thorough risk-benefit discussion with each patient is essential before deciding on treatment for postpartum major depression. With the physician's help, the patient should be encouraged to make a list of the potential benefits of treatment. This will allow women to envision their own recovery and set appropriate goals. The physician should then explain the risks of pharmacologic treatment, such as the penetrance of medication into breast milk (if applicable for the medication selected), as well as the risks of persistent depressive symptoms, such as infant sleep disturbance (Armitage et al., 2009), poor mother-infant bonding, delays in infant growth and IQ, and an increased risk of anxiety or depressive symptoms for the infant later in life (Brand & Brennan, 2009).

In conclusion, non-pharmacologic therapies including psychotherapy and psychosocial interventions are usually considered as the first line treatment that recommend to women with mild-to-moderate depressive symptoms in the postpartum period (Guille et al., 2013). While women with moderate to severe depression, antidepressant medications alone, or antidepressant medications combine

psychotherapy/ psychosocial therapy are recommended (Guille et al., 2013; Yonkers et al., 2011). Moreover, severe cases of women who experienced postpartum depression with suicidal or homicidal ideation or depression with psychosis, referral to a mental health professional is warranted (Guille et al., 2013).

Social support and postpartum depression in adolescent mothers

The postpartum period is a stressful life event for women. In this period, women tend to have the increased physical and emotional demands of childbearing and parenting, therefore, social support is a significant source to provide assistances for improving mental health in postpartum women (George, 2005). Moreover, social support which received after childbirth may improve maternal and infant well-being, and helping women transit into the new maternal role (Stapleton et al., 2012).

Several studies found that social support is strongly correlated with postpartum depression in women (Eastwood, Jalaludin, Kemp, Phung, & Barnett, 2012; Heh et al., 2004; Xie, He, Koszycki, Walker, & Wen, 2009). For example, O'Hara and Swain (1996) conducted a meta-analysis to investigate the relationship between various aspects of social support and postpartum depression. The findings from the meta-analysis found that social support was a strong negative predictor of postpartum depression (O'Hara & Swain, 1996). Similarly, the findings from a meta-analysis with 27 studies revealed that social support had a moderate effect size to predict postpartum depression in adult women, and had also reported a significant correlation between postpartum depression and lack of social support especially emotional and instrumental supports (Beck, 2001; Beck, 2002).

Heh et al. (2004) conducted a study to examine the association between depressive symptoms and social support among 240 Taiwanese postpartum women at four weeks after childbirth. Approximately 21 % of women had EPDS scores of 10 or above and 42 % of women reported depressive symptoms at four weeks after childbirth. Moreover, the results suggested that social support was very strongly negative associated with postpartum depression, and found that women who received low level of social support were 5 times more likely to experience depressive symptoms compared to women with high level of social support (Heh et al., 2004).

In another study, Xie et al. (2009) who conducted a prospective study to examine the correlation between social support and postpartum depression among 534 Chinese pregnant women at the third trimester and two weeks after delivery. The findings found that 19.29 % of women report postpartum depression, and low level of social support during postpartum period was associated with higher risk for developing postpartum depression (Xie et al., 2009).

In this section, therefore, the researcher reviewed the related literature and researches about social support and postpartum depression in adolescent mothers as follows.

1. Definition of social support

Social support is a multidimensional definition. Social support has been defined and discussed by several researchers. Social support involves the exchange of social resources between individuals (L. S. Cohen & Syme, 1985; R. L. Kahn & Antonucci, 1980; Shumaker & Brownell, 1984; Thoits, 1985) or interpersonal transactions (Kahn, 1979).

For example, House (1981) defined social support as an interpersonal transaction involving one or more of the following: Emotional concern (liking, love, empathy), instrument aid (goods or services), information (about the environment), or appraisal (information relevant to self-evaluation).

Cohen and Hoberman (1983) defined social support as resources ones get from their interpersonal ties.

Hupcey (1998) defined social support as a voluntary act from one individual (the donor) that given willingly to another individual (the recipient) with whom there is a personal relationship and that produce immediate or delayed positive response in the recipient.

Heitman (2004) also defined social support as the positive, potentially health-promoting or stress-buffering aspects of relationships such as instrumental aid, emotional caring or concern, and information.

Eastwood et al. (2012) defined social support as “resources provided by others” and as “the emotional, instrumental, or financial aid” that is obtained from one’s social relationships.

In the study, the operational definition of social support is defined as the assistances during postpartum period regarding information, emotion, instrument and appraisal that the adolescent mothers received from primary family member of adolescent mother and nurses.

2. Types of social support

According to the social support theory (House, 1981), social support consists of functional and structural support. Functional support comprises four types of social support including emotional, instrumental, informational, and appraisal support. Structural support consists of formal (e.g., from clinicians, nurses) and informal (e.g., from family members and friends) support (House, 1981).

2.1 Functional support

Functional of social support consist of four dimensions including emotional, material, informational, and comparison supports (House, 1981). The four types of the functional social support were described as the following.

2.1.1 Emotional support

Emotional support is the most important dimension of social support (House, 1981). House (1981) described emotional support as the expression of caring, esteem, concern, affection, empathy, love, and trust. After childbirth, Beck (2002) also described the emotional support as the support that postpartum women receive from social network such as husband/ mate, family, and friends. Similarly, Logsdon et al. (2005) suggested that emotional support after delivery in adolescent mother means having someone who telling you that you are doing a good job and that you are important.

2.1.2 Instrumental support or material support

House (1981) defined instrumental support as the provision of material support such as financial assistance, tangible goods, service, or assistance with tasks (House, 1981). Instrumental support is described as concrete assistance that person received from another person. During postpartum period, postpartum mother may receive instrumental supports from social network, husband/ partner, family members, or friends such as babysitting, help with household chores (Beck, 2002). According to Logsdon et al. (2005), material support in adolescent mothers consists of help with meals, laundry, money, and having time to take a shower, or answer the phone.

Similarly, Negron, Martin, Almog, Balbierz, and Howell (2013) also found instrumental support plays a significant role to provide basic's need in women for physical and emotional recovery during postpartum period. In another study, Ugarriza, Brown, and Chang-Martinez (2007) suggested that instrumental support including assistance with household tasks and childcare was a significant support in women during postpartum period.

2.1.3 Informational support

House (1981) defined information support as the provision of information, advice, guidance, or feedback on behavior during a time of stress. Information support refers to the advice, guidance, suggestions, direction, and information relevant to the situation which received from other person such as family member, husband/ partner, friends, or health care professions which help the person to understand and manage stressful situations. In adolescent mothers, the information support after delivery in mothers is the information that telling where to buy diapers, how to take care of the cord, what to do if keep bleeding, etc. (Logsdon et al., 2005). Moreover et al. (2015) found that the information support from health professions that provided to mothers during the first week after birth included breastfeeding information, infant feeding advice, health care for the mother, and child health care.

In addition to maternal and child health care information, the health professions were encouraged to provide the information support about postpartum depression for the women during postpartum period (Corrigan et al., 2015). Interestingly, several studies found that providing the information about postpartum depression to mothers at postpartum period, especially during hospitalization immediately after delivery, was effective method to decrease the risk to develop postpartum depression (Hayes & Muller, 2004; Ho et al., 2009). According to Kim et al. (2014), revealed that mothers who received sufficient information support about postpartum depression after delivery were less likely to report postpartum depression.

2.1.4 Appraisal support or comparison support

According to House (1981)appraisal support defined as the provision of information and advice which are relevant to self-evaluation, rather than to

problem solving. Moreover, appraisal support represents affirmation, feedback, and social comparison that person received from another person. During postpartum period, sharing or talking about own experience to similar experience's person is described as comparison support in adolescent mothers. According to Logsdon, Birkimer, Simpson, and Looney (2005) suggested that comparison support in adolescent mother means having someone else who has a new baby giving you advice or talking about your experience.

2.2 Structural support

Structural support is the availability of social network connection which consists of formal and informal support (House, 1981). After childbirth, mothers require a lot of support from various types of support including emotional, instrument, information, and appraisal, and from various types of support's source including family, partners, friends, peers, and health care professions (Figueirrdo et al., 2006; Wahn & Nissen, 2008).

Adolescent mothers can receive social support from many sources of support. The sources of social support were divided into two major sources which included the support from formal support such as health care professions (e.g., nurses, midwives, and physicians) and informal support such as family members, husband/partner or father of the baby, friends, and/or social networks (Corrigan et al., 2015). Moreover, adolescent mothers have needs for emotional, esteem, material, informational, and network support during postpartum period (Logsdon et al., 2004) which is provided by a trusted provider both formal and informal support (Dykes et al., 2003).

2.2.1 Informal support

The informal support from family members and husband are the most important sources for the new mothers to get support (Gao et al., 2015), and many women believed this support should be provided without asking (Negron et al., 2013). Similarly, Corrigan et al. (2015) found that many women reported husband or partner (83.6 %) was the most common primary support person during postpartum period, and following with the support from grandmother (9.8 %).

Especially in adolescent mothers, mother of adolescent mother is one of the family members who has most common support provider and important source to support adolescent mothers during pregnancy and postpartum period for providing assistance when they faced distress (Simpson & Rholes, 2012). For example, Beers and Hollo (2009) found that adolescent mothers identified social support, including both parenting an emotional support, as primarily emanating from family members, particularly their mother, as well as from the father of the baby. According to Hudson et al. (2016), also suggested that mother of adolescent mother were the most frequency primary provider of social support after delivery followed by boyfriend/ partner.

In Thailand, similarly, Sriyasak et al. (2016, 2018) found mother of adolescent mother was a significant source of all supports of adolescent mother from pregnancy to childrearing period. In another study, Sa-ngiamsak (2016) found differences of social support between adolescent mothers in western countries and eastern countries particularly in Thailand. The adolescent mothers in western countries might have greater support from special programs and social welfare (both governments and non-government). Whereas any support received by adolescent mothers in Thailand comes from primary family and the father of baby (Sa-ngiamsak, 2016). Therefore, several studies indicated that mother of adolescent mother was a significant person to provide social support to adolescent mother because many adolescent mothers still live with their mother, and are likely to be dependent on mother for financial and health care resources, as well as for emotional support (Figueirrdo et al., 2006; Stiles, 2008).

In addition to mother of adolescent mother, partner (or father of the baby or husband or boyfriend) of adolescent mother is also an important source of social support to adolescent mother. Adolescent mothers who have partner support or involvement during pregnancy may reduce poor birth outcome (Shah, Gee, & Theall, 2014). Moreover, mothers who received partner support and had positive relationships with their partner were associated with less postpartum depression (Edwards et al., 2012; Stapleton et al., 2012).

Interestingly, having a larger number of available persons for providing social support to pregnant women during pregnancy also a greater effect to prevent postpartum depression. Morikawa et al. (2015) suggested that the women who had prenatal and postpartum depression also reported having fewer available supportive provider and lower levels of received social support's satisfaction compared to the non-depressed women. Therefore, adolescent mothers who received social support from significant person both mother of adolescent mother and partner were had a higher level of social support compared to receive from either adolescent's mother or partner. Hudson et al. (2016) found the combination of social support from mother of adolescent mother and partner provided the highest level of social support to adolescent mothers. Therefore, psychosocial interventions that focus on the social support network are effective in preventing the development of postpartum depression, especially for prenatal depressed mothers (Morikawa et al., 2015).

2.2.2 Formal support

In addition to informal support from family members, most mothers in early postpartum period feel a need for social support during their transition to motherhood from formal support or from health care professionals such as midwives or nurses (Darvill et al., 2010; Teeffelen et al., 2011; Wilkins, 2006). According to Corrigan et al. (2015) found that many women (72 %) received the support from health care professions including lactation consultants, obstetricians and gynecologists, nurses, or pediatricians (listed in order of frequency). Therefore, the health professions including midwives, nurses, and childbirth educator are important person to contact with postpartum mothers for providing emotional and information supports (Corrigan et al., 2015). Similarly, Sorenson and Tschetter (2010) revealed that the good relationship between the mother and obstetrical staff can assist with a smoother transition to motherhood. However, if the relationship is not building the trust and the staff does not provide a guarantee relationship. These may be affected on the mother's confidence which lead to a higher risk to develop postpartum depression (Sorenson & Tschetter, 2010).

In addition to both non-depressed mothers, and depressed mothers also require the support from health care professions. Letourneau et al. (2007) suggested that

postpartum depressed mothers who approach health care providers about their depressive symptoms require the emotional support (e.g., need someone to be listened), informational support (e.g., provide the information to reduce embarrassment, shame, and feeling of inadequate support, and the information about therapy of postpartum depression), and appraisal support (e.g., reassurance that the depressive symptoms will improve).

Social support can promote mental health and physical well-being, especially when face of stressful life events (Heh, 2003), can also reduce the levels of maladaptation, and prevent negative consequences due to life transitions and challenges such as during postpartum period (Tsao, 2007). Therefore, social support is especially important source for preventing women's mental health during postpartum period. Because the increasing physical and emotional demands during childbearing and parenting period may be associated with postpartum depression. Numerous studies reported that the lack of social support associated with postpartum depression. Lack or low levels of social support is one of the strongest psychosocial risk factors for developing postpartum depression both adolescent and adult mothers (Gao et al., 2009; Heh et al., 2004; Milgrom et al., 2008; Robertson et al., 2004).

Although several studies have indicated that mothers who received inadequate social support during pregnancy and/or postpartum period were significantly higher postpartum depression. However, lack of postpartum social support is a more potential predictor of risk factor for developing postpartum depression than lack of social support during pregnancy (Kim et al., 2014; Liabsuetrakul, Vittayanont, & Pitanupong, 2007; Xie et al., 2009). For example, Kim et al. (2014) found adolescent mothers who received insufficient support or lack of support after delivery were approximately five times more experienced postpartum depression. Similarly, Xie et al. (2009) also found that women who had low level of social support during postpartum period were associated with a greater risk to develop postpartum depression.

Social support is more importance to all first-time mothers especially in adolescent mothers (Lanzi et al., 2009). Because primiparous women or first-time mothers have a greater risk for developing postpartum depression compared to multiparous women (Morikawa et al., 2015). Therefore, social support is known as

the source to improve health outcomes for both adolescent mothers and their infant (Logsdon et al., 2002), while social isolation or low social support has been associated with postpartum depression in adolescent mothers (Birkeland et al., 2005; Robertson et al., 2004). Adolescent mother may be expected to need more social support during pregnancy and postpartum period (Furey, 2004). However, adolescent mothers had inadequate or lack of social support than non-pregnant peers and adult mothers, and they had poorer ability to make and maintain relationships with others (Crase et al., 2007; Figueirrdo et al., 2006; Logsdon et al., 2002; Wahn & Nissen, 2008).

Based on the predictive model, therefore, postpartum depression in adolescent mothers was most influenced by lack of social support (Nunes & Phipps, 2013). Adolescent mothers with low levels of social support during pregnancy and after delivery were a high-risk group for developing postpartum depression.

Several studies reported that social support is an important predictor of depressive symptoms in adolescents during pregnancy and postpartum period. For example, Reid and Meadows-Oliver (2007) found the correlation between social isolation and postpartum depression, and suggested that adolescent mothers who have more supportive relationships from family members report lower depressive symptoms compared to mothers with poor supportive relationship. Another study of deCastro, Hinojosa-Ayala, and Hernandez-Prado (2011), who conducted a cross-sectional study of 298 mothers in Mexico was conducted to identify the associate risk factors of postpartum depression and further examine whether any of these risk and protective factors are specific for adolescent mothers. Approximately 27.18 % of the mothers were adolescent mothers aged between 14 and 19 years old. The prevalence of postpartum depression was higher in adolescents than in adult mothers (16.05 % versus 14.29 %, respectively). Social support is significantly associated factor with less possible development of postpartum depression in both adolescent and adult mothers, and this effect is stronger for adolescents (OR=0.81) than for adults (OR=0.92). Therefore, social support is a significantly protective factor associated with postpartum depression, especially for adolescent mothers (deCastro et al., 2011).

Similarly, Brown et al. (2012) also found that higher levels of social support were associated with fewer depressive symptoms among more depressed adolescent

mothers at one year postpartum. According to Nunes and Phipps (2013), who conducted a retrospective cohort study to determine different risk factors of postpartum depression between adolescent and adult mothers. The findings from predictive models suggested that social support and prior depression were significant predictors of postpartum depressive symptoms in adolescent mothers, while postpartum depressive symptoms in adult mothers were associated with risk factors including maternal race, pregnancy intention, SES, prior depression, mental health during pregnancy, stressors, and social support (Nunes & Phipps, 2013). Another study by Huang et al. (2014) found adolescent mothers who have less perceived social support were associated with higher rates of depression compared to mothers who have more perceived support. Similar to another study in Thailand, Nirattcharadorn et al. (2005) also found adolescent mothers who experienced low levels of social support during pregnancy had a high risk for developing postpartum depression.

On the other hand, numerous studies have found that higher levels of social support were associated with less postpartum depression during postpartum period (Brown et al., 2012; Corrigan et al., 2015; Edwards et al., 2012; Gao et al., 2012; Ngai et al., 2010; Quelopana et al., 2011). Increasing higher social support especially after delivery can prevent postpartum depression in adolescent and adult mothers (Brown et al., 2012; Edwards et al., 2012; Kim et al., 2014; Xie et al., 2009).

For example, Bunting and McAuley (2004) found adolescent mothers with higher support from family and friends have greater mental health outcomes than mothers with lower social support. Another study by Logsdon et al. (2004) suggested adolescent mothers who adequately received social support were associated with positive outcomes for both the mothers and infants. According to Cox et al. (2008), found that adolescent mothers who perceived adequate social support have a lower rate of postpartum depression compared to mothers who perceived inadequate social support. Similar to study of Brown et al. (2012), who found that adolescent mothers who have higher social support had a strong inverse association with depressive symptoms.

Interventions for preventing postpartum depression in adolescent mothers

The high prevalence and negative consequence of postpartum depression supported the crucial need to find the more effective interventions to prevent and treat postpartum depression. Social support interventions which delivered to mothers during the immediate postpartum period were more beneficial to prevent postpartum depression than interventions incorporating during pregnancy (Leahy-Warren & McCarthy, 2007; Xie et al., 2009).

A recent systematic review found that the psychological intervention such as cognitive behavioral therapy [CBT], interpersonal psychotherapy [IPT] and psychosocial intervention such as professionally-based postpartum home visits, antenatal and postnatal educational program, social support intervention (e.g., health professional-support, peer-support, telephone-based peer support, support-education), early intervention program (EIP) are significant methods to prevent postpartum depression in mothers who specifically targeting high-risk mothers (Dennis & Dowswell, 2013).

Moreover, a recent meta-analysis and several studies also shown that interventions providing informational support, especially the information about postpartum depression to mothers by a health professional during hospitalization immediately after childbirth has shown to be effective in reducing the risk of postpartum depression than providing this information during pregnancy, because it did not decrease postpartum depression (Dennis & Dowswell, 2013; Hayes & Muller, 2004; Heh & Fu, 2003; Ho et al., 2009; Webster et al., 2003).

In this section, therefore, the details of the psychosocial interventions were described as the following.

Psychosocial interventions

Psychosocial interventions were defined broadly as any non-pharmacological or physical intervention that emphasizes psychological or social factors rather than biological factors (Dagnan, 2007; Ruddy & House, 2005). This definition of psychosocial interventions allows for the inclusion of social interventions, as well as interventions with a focus on social aspects, such as social

support. Therefore, social support intervention is one of the psychosocial interventions.

Based on a recent systematic review, the psychosocial intervention is a simple intervention with the potential to prevent postpartum depression (Dennis & Dowswell, 2013). Several studies found wide variety of psychosocial interventions to prevent postpartum depression such as antenatal/postnatal educational classes, health professional home visits, lay home visits, peer-support, telephone support, early postpartum follow-up, continuity model of care (Dennis & Dowswell, 2013).

Psychosocial interventions could delivered in any form such as delivered via telephone, home or clinic visits, or individual or group sessions during pregnancy and/or within the first month postpartum by a health professional (e.g., nurse, midwife, childbirth educator, physician, psychiatrist, psychologist) or lay person (e.g., specially trained woman from the community, student, research assistant) (Dennis & Dowswell, 2013).

Psychosocial interventions which provided the intensive support by a health professional in the postpartum period can be effective in reducing postpartum depression in adolescent mothers (Dennis, 2003; Dennis, 2005; Dennis & Dowswell, 2013).

The psychosocial intervention for preventing postpartum depression among adolescent were described as the following.

1. Home visits

Home visiting is a community-based strategy for delivering services that aims to improve outcomes for high-risk families through education and support (Gomby, Culross, & Behrman, 1999). For adolescents who are hard to engage, at high risk, and living under adverse conditions, home visiting may be particularly beneficial (Hahn et al., 2003). There are several studies that used a home-visit as an intervention to prevent postpartum depression in adolescent mothers. Barnet et al. (2002) conduct the RCT study to evaluate the impact of a home-visiting intervention on preventing repeat pregnancy, depression, and on linking the adolescents with primary care. The home-visiting intervention was delivered by trained home visitors which provided a parenting curriculum, encouraged contraceptive use, connected the

teen with primary care, and promoted school continuation. A trained home visitor delivered the intervention weekly, one-and-one-half-hour home visits to the intervention group. The results showed that the home-visit intervention did not have any effect on preventing repeat pregnancy and postpartum depression or mental health problems, and did not link the adolescent mothers with primary care

Barnet, Liu, DeVoe, Alperovitz-Bichell, and Duggan (2007) developed a community-based home visiting program to examine the effectiveness of the intervention on adolescent mother's outcomes and linking the adolescents with primary care. The intervention was provided by trained home visitors who had been recruited from local communities. The intervention group received a home-visit program which included parenting curriculum, promoting contraceptive use, linking with primary care and encouraging in school continuation. The findings suggested that the home visiting intervention did not reduce repeat pregnancy, depression, and achieve coordination with primary care.

Barlow et al. (2006) conducted the RCT study to determine the effect of the paraprofessional delivered home-visiting intervention to promote knowledge of child rearing, skills, and maternal involvement in American Indian pregnant adolescents. The intervention group received 41 prenatal and infant care lessons during 25-home visits starting from 28 weeks' gestation until 6 months after delivery. The details of prenatal and infant care lessons cover antenatal care, preparation for childbirth, breastfeeding, nutrition, parenting, home safety for infant, vaccination, child raising, family planning, preventing sexually-transmitted disease, and setting of maternal achievement of personal and family development. The results reported that adolescent mothers in the intervention group had greater decrease in depressive symptoms at two and six months postpartum.

Barlow et al. (2013) and Barlow et al. (2015) examined the effectiveness of the Family Spirit intervention on parental competence, maternal behavioral problems that impede effective parenting through early childhood, early childhood emotional and behavioral outcomes. The Family Spirit home-visiting intervention delivered by paraprofessional and comprised home-visiting during prenatal through early child-period together with optimized standard care. At 2, 6 and 12 months after childbirth, the findings suggested that the intervention group did not have significant differences

in depressive symptoms and mean scores for CES-D when compared with the control group. At 36 months postpartum follow-up, the home visiting group had significantly higher parenting's knowledge and parental locus of control, lower depressive symptoms and externalizing problems, and less use of marijuana and illegal drugs in past month compared with the control group.

2. Antenatal/ Postnatal educational support programs

Werner et al. (2015) summarized six RCTs antenatal and postnatal educational program or group-based psychoeducational interventions to prevent postpartum depression, and found these interventions have a significant effect to decrease in depressive symptoms. Moreover, they also found common topics that taught in antenatal and postnatal educational program including a general introduction to postpartum depression and how to identify and treat it, discussion of the social and emotional challenges of pregnancy, and education about self-care, social support, and problem-solving skills.

The intervention in the Thomas and Looney (2004) study consisted of a two phase parenting education program. Phase I, entitled the "Nurturing Program," was a group intervention that focused on strength-based, relational parenting education, and occurred in weekly sessions for the duration of 12 weeks. Each session was conducted by a trained therapist and parenting expert, who combined psychoeducational and group counseling techniques into each session. Phase II was a follow-up option for those who completed Phase I, and consisted of weekly psycho-educational/ counseling parenting support groups, lasting for an additional 12 to 14 weeks. The Thomas and Looney (2004) study was a non-experimental intervention research study, and therefore lacked a control group. The results show that most of participants (70 %) were identified as being depressed by the CES-D Scale at 6 months. The two phases parenting educational program was not an effective intervention for treating depression.

Walkup et al. (2009) conducted the RCT study to evaluate the efficacy of a "paraprofessional-delivered-home-visiting" intervention among young American Indian mothers at reservation-based on parenting knowledge, involvement and maternal-infant outcomes. The intervention group received para-professional-delivered home-visiting interventions which included the 25-time visit "Family Spirit"

intervention focusing antenatal and infant care with life skills of mothers. The control intervention was called the Breastfeeding Nutrition Control Group which received education program about breastfeeding nutrition together with home visits. Home visits took place from 28 weeks of pregnancy to 6 months after delivery. The outcomes were measured at baseline, and two, six, and 12 months after delivery. Post-intervention at 6 and 12 months postpartum, the results showed that the intervention group had non-significant differences in depressive symptoms, maternal stress, maternal involvement, home environment, social support and substance use when comparing to the control group.

Ickovics et al. (2011) developed two programs which consists of the "Centering Pregnancy Plus (CP+)" and the "Centering Pregnancy (CP)" programs. Trained health care provides (e.g. midwife, obstetrician) provided the CP+ program to participants during prenatal care in ten structured-group classes, approximately two hours each class. The findings reported that adolescent mothers who had "high stress" have a significantly decrease in depression from baseline to one year postpartum after receiving the CP+ intervention.

3. Social support interventions

Lack of support can be associated with the development of postpartum depression and can compromise both the mother and infant (Corrigan et al., 2015). Social support can come from society/community or from a professional source. Depressive symptoms were common among adolescent mothers, but increased level of social support had a strong association with lower depressive symptoms (Brown et al., 2012).

Logsdon et al. (2005) examined the effectiveness of a social support intervention which provide by nurses to prevent postpartum depression among 128 pregnant adolescents. The informational social support intervention consists of three interventions including a pamphlet, a video, or the combination of the pamphlet and the video. The content of the intervention was based on literature that described the social support needed of adolescent mothers after delivery. The intervention was delivered to participants between 32 and 36 weeks' gestation, and data was collected at 6 weeks postpartum. At post-intervention, the findings showed non-significant differences in postpartum depression between both groups at six weeks after delivery.

4. Early intervention programs

Early intervention program (EIP) is a comprehensive nursing care program which included a unique combination of "Preparation for Motherhood" classes, maternal- fetal interactive activities, and prenatal/postal home visits by public health nurses for counseling, social support, and facilitation of mother-infant interactions. The EIP intervention will begin during the second trimester of pregnancy and continue through the first year of motherhood (Koniak-Griffin, Mathenge, Anderson, & Verzemnieks, 1999).

Koniak-Griffin, Anderson, Verzemnieks, and Brecht (2000) and Koniak-Griffin et al. (2002) studies used EIP as intervention in the intervention group and traditional public health nursing care (TPHN) in control group. The EIP was developed to help young mothers manage their lives and tailored to have a positive impact on prenatal health behaviors and perinatal outcomes of young mothers, infant and maternal health, maternal educational achievement and social competence. The intervention group received approximately 17 home-visits from public health nurses (PHNs) beginning from the second or third trimester to the first year postpartum. The results showed a non-significant difference of the EIP program on the internal social competence including self-esteem, sense of mastery, perceived stress and postpartum depression. At the one-year follow-up, the results also showed non-significant differences in depressive symptoms between two groups from pregnancy through one year postpartum. However, the results also showed a significant decrease in CES-D scores that was noted in both groups at one year postpartum.

5. Interventions for preventing the development of postpartum depression in Thai adolescent mothers

Currently, in Thailand, not found experimental studies have been conducted to prevent postpartum depression among adolescent mother particularly single adolescent mother. The most studies were cross-sectional study which focused on examining the prevalence and associated risk factors of postpartum depression among adolescent pregnant women or adolescent mother (Chaisawan et al., 2011; Moontito et al., 2017; Nirattcharadorn et al., 2005; Srisaeng, 2003; Uthaipaisanwong et al., 2015).

However, Bureau of Reproductive Health (2015a) published the “handbook of adolescent mother caring guideline” to use as a protocol for healthcare professions to provide care for adolescent mother during postpartum period until 2 year after delivery. The caring guideline for adolescent mother during postpartum period consists of 3 components and activities covering hospitalization and after discharge from hospital.

The three components of postpartum care for adolescent mother, infant and family consist of healthcare providers, service place, and encourage family for caring adolescent mother (Bureau of Reproductive Health, Thailand, 2015, p. 40). The activities for caring adolescent mother, infant and family during hospitalization includes postpartum health assessment, mental health and postpartum depression assessment, postpartum and infant care education, breastfeeding promotion, encourage family member and husband to care adolescent mother, and discharge planning education (Bureau of Reproductive Health, Thailand, 2015, p. 41-47). After discharge from hospital, the activities include telephone contact within 7 days after delivery and home visit by multidisciplinary teams or health promotion hospital staffs at least 2 times within 4-6 weeks postpartum (Bureau of Reproductive Health, Thailand, 2015, p. 47-54).

However, the caring guideline for adolescent mother is not focus on the prevention of postpartum depression especially in the role of social support from family members. Because the most guidelines emphasized on the postpartum health care and infant care for adolescent mothers during hospitalization and after discharge from hospital.

Summary

Postpartum depression, a major depressive disorder that occurred within the first 6 months after delivery, is a major public health problem worldwide both developing and developed countries. Postpartum depression can affect not only adolescent mothers but also their infants and is associated with poor maternal and infant outcomes. Approximate 10 %-57 % of adolescent mothers worldwide experienced postpartum depression after delivery, especially approximate 42 %-55 % among Thai adolescent mothers.

Lack or low of social support is one of the significant risk factors for developing postpartum depression in adolescent mothers. However, increasing higher social support especially after childbirth can prevent postpartum depression in adolescent mothers.

Based on a recent systematic review, the psychosocial intervention is a simple intervention with the potential to prevent postpartum depression. Social support is one of the psychosocial interventions. Social support interventions which delivered to mothers during the immediate postpartum period were more beneficial to prevent postpartum depression than interventions incorporating during pregnancy.

CHAPTER 3
RESEARCH METHODOLOGY

The purpose of this study was to examine the effectiveness of the nurse-led social support program to prevent the development of postpartum depression in adolescent mothers. This chapter presents the research methodology including the research design, population and sample, setting of the study, instruments, protection of human subjects, data collection procedure, and data analysis.

Research design

A randomized controlled trial (RCT) design was used to test the effectiveness of the nurse-led social support program to prevent the development of postpartum depression in adolescent mothers. The total 42 participants were randomly assigned to either the intervention group or the control group of 21 participants each. Participants in the intervention group received the nurse-led social support program plus usual nursing care. Participants in the control group received only the usual nursing care. The outcomes in both groups were measured at baseline, immediately after intervention, and follow-up at 6-week postpartum and 3-month postpartum.

Population, sample, and randomization

Population

The population of this study comprised of adolescent mothers who received postpartum care at the Postpartum Care Unit, Chonburi Hospital, Chon Buri Province, Thailand.

Sample

The sample in this study consisted of adolescent mothers and primary family members of adolescent mothers. First, the sample of adolescent mother was selected from adolescent mothers who met the inclusion criteria as follows:

1. age 10-19 years old,
2. first-time mother,
3. normal delivery and being the 1st day hospitalization at postpartum unit

4. having the EPDS score < 13 which is considered to not have PPD before participating in the program,

5. having primary family members such as husband or other family members (e.g. mother, father, grandmother, or friend) to provide care and social support during postpartum period, and

6. able to communicate in Thai language

Primary family members were selected from the primary family members of adolescent mothers in the experimental group who met the inclusion criteria as follows:

1. age older than 18 years old,

2. being primary family members of adolescent mother such as partner/ husband, mother, father, grandmother, or friend who were selected by adolescent mother, and

3. able to communicate in Thai language

Exclusion criteria

Adolescent mothers and primary family members who cannot participate in all sessions of the NLSS program, or the adolescent mothers who had infant with congenital anomalies or serious health conditions were excluded from the study.

Sample size

The sample size was calculated by using power calculation with the G*power program version 3.1.9.2 (Faul, Erdfelder, Buchner, & Lang, 2009). Power analysis will involve *F tests* for ANOVA: Repeated measures within-between factors with a power = 0.80, a significance level = 0.05, and an effect size = 0.21 based on a previous social support intervention on the prevention of PPD in adolescent mothers (Logsdon et al., 2005). These measures will be repeated 4 times. Therefore, a total minimum sample size for both groups is 34 participants, including 17 participants in the nurse-led social support program group and 17 participants in the control group. To prevent the participants loss to follow-up, however, the expected drop-out of the sample from the study intervention is about 20 % (Polit & Gillespie, 2009). Therefore, a total of 42 adolescent mothers will be recruited for this study, including 21 participants in each group.

Sampling method

The convenience sampling method was used for sample recruitment in the study. The 1st research assistant (RA) screened for the eligibility of adolescent mothers from medical record chart at the Postpartum Care Unit. After that, the 1st RA informed the details of the study to adolescent mothers who met the inclusion criteria. Potential participants were invited to ask questions, and those who agreed to participate were asked to sign the written inform consent before starting the groups. Thereafter, randomized assignment was performed to allocate participants into the experimental or the control group by the 1st RA.

Randomization

The researcher registered the research protocol at www.clinicaltrials.in.th before starting the protocol. The total 42 adolescent mothers who met the inclusion criteria were randomly allocated by using a computer-generated number into two groups: The intervention group (21 participants) and the control group (21 participants). Before the study had begun, the 1st RA who did not involve with care of the participants used the www.randomizer.org/form.htm (2018) to prepare the numbered sealed opaque envelopes which was used to perform a block randomization to allocate participants into each group. After written informed consent forms were obtained, the 1st RA randomly drew up and opened the envelope for each participant to ensure that the participant equally allocated into two groups based on the group number of each code: group 1 (the intervention group), and group 2 (the control group). Therefore, the researcher was blinded to the group allocation.

Setting of the study

The setting of this study was the Postpartum Care Unit, Chonburi Hospital, Chon Buri Province, Thailand. The hospital is a general hospital with a capacity of 850 beds. Especially in PP unit, the maximum capacity of beds is 40. The average numbers of patients at PP unit are 350-400 cases each month. The PP unit is available for patients 24 hours a day, 7 days a week, and has a visiting time from 10:00 am to 20:00 pm. Two hours after delivery, mothers were transferred from delivery unit to PP unit. Generally, the mothers stay approximately 3 days hospitalization (within 48-72 hours). In case of the mothers who have medical complications after delivery,

lengths of hospitalization are longer than 3 days. All of the adolescent mothers who were under the postpartum care service of the PP unit received postpartum care by nurses including group education related to general practice after delivery, abnormal symptoms, breastfeeding, family planning, nutrition, postpartum exercise, infant care, and vaccination.

Research instruments and intervention

In this study, the research instruments were divided into two parts. The first part was instruments for data collection and the second part was instruments for the implementation. A self-report questionnaire of Thai version of the Edinburgh postnatal depression scale [EPDS] was used to assess postpartum depressive symptoms among adolescent mothers. The nurse-led social support program and the booklet were used for the implementation of the intervention. The instruments were described in the following section.

1. Instruments for data collection

1.1 Personal information form

The personal information form was developed by the researcher. This form was used to collect data concerning maternal age, education, employment status, occupation, family income, marital status, planned pregnancy, number of family members, living with, the most social support provider after childbirth.

1.2 The Edinburgh postnatal depression scale [EPDS]

The Edinburgh postnatal depression scale [EPDS] was specifically developed by Cox et al. (1987) to screen the postpartum depressive symptoms. This tool contains 10-item self-report which was a commonly used screening instrument for the symptoms of perinatal and postpartum depression. The tool was a self-report questionnaire which can be completed in approximately 5 minutes. The 10-item of EPDS measures on a 4-point Likert scale for each item, scored between 0 and 3, a potential score range from 0-30, with higher scores indicating greater severity of depressive symptoms. The items included statements relating to feelings of mothers experienced during the previous seven days and evaluated depressed mood, anhedonia, guilt, anxiety and suicidal ideation. The recommended a cut-off score of ≥13 was identified the depressive symptoms (Cox et al., 1987).

This tool was translated and validated in Thai version by Vacharaporn et al. (2003). The EPDS Thai version was one of the most frequently used tools to screen postpartum depression in Thai adolescent mothers. Several previous studies about postpartum depression in Thai adolescent mothers found the Cronbach's alpha coefficient of the EPDS Thai version was .81 to .87 (Moontito et al., 2017; Phummanee & Roomruangwong, 2015).

2. Instruments for implementation

The instruments for intervention were the nurse-led social support program and the booklet of the nurse-led social support program for adolescent mother and the primary family members of adolescent mother.

2.1 The nurse-led social support program

The nurse-led social support program was developed by the researcher based on a social support theory (House, 1981), and a review of related literature describing social support needed for adolescent mothers during postpartum period (Logsdon et al., 2002; Logsdon et al., 2005) that combines both functional support and structural support. The nurse-led social support program was delivered to adolescent mother and the primary family members of adolescent mother between the 1st and the 2nd day after childbirth at hospital by researcher (nurse). The program consisted of four components in two individual implementation phases over a period of 4 weeks and provided support to adolescent mothers and the primary family members of adolescent mother at postpartum unit and the participants' home.

The components of the nurse-led social support program

The four components of the nurse-led social support program consist of 1) providing health information about postpartum depression and social support; 2) training adolescent mother to express her need for support after childbirth that necessary and consistent with her own needs, and training the primary family members of adolescent mother to provide social support that necessary and consistent with the needs of adolescent mothers; 3) encouraging adolescent mother to express her need for support after childbirth and encouraging the primary family members of adolescent mother provide social support to adolescent mother; and 4) monitoring and consultation via home visit and telephone contacts. The nurse-led social support program consists of four components as follows:

1. Providing health information of postpartum depression and social support

The researcher provided informational support to adolescent mother and the primary family members of adolescent mother about the knowledge of postpartum depression and the importance of social support in preventing the development of postpartum depression to recognize adolescent mother for the need of social support after childbirth. The researcher also provided an educational booklet to reinforce what had been learned.

2. Training adolescent mother to express her need for support after childbirth that necessary and consistent with her own needs, and training the primary family members of adolescent mother to provide social support that necessary and consistent with the needs of adolescent mothers

The researcher trained adolescent mother to express her need for support after childbirth from mother of adolescent mother, and trained the primary family members of adolescent mother for providing the four dimensions social support need (included information, emotional, instrument and appraisal support) after delivery to adolescent mother via many methods including demonstrate, role-paly, and feedback. The four dimensions of social support were described as follows:

2.1 Informational support: The primary family members of adolescent mother were encouraged to provide the informational support to adolescent mother by advising about postpartum care (e.g. normal postpartum bleeding, care of episiotomy wound, use of pads, nutrition) and infant care (e.g. breastfeeding, holding, how to take care of the cord and eyes, bathing, cloths and diapers changing).

2.2 Emotional support: The primary family members of adolescent mother were encouraged to provide the emotional support to adolescent mother by asking to share feeling about delivery and infant. The primary family members of adolescent mother also provided a good listening, and expression of love, understand and concern together with sharing previous owns' experience to adolescent mother.

2.3 Instrumental support: The primary family members of adolescent mother were encouraged to involve in providing the material and economic supports to adolescent mother by providing the practical assistance. The practical assistance from the primary family members of adolescent mother consisted of help with meals,

laundry, money, housekeeping, having time to take a follow-up at hospital. The primary family members of adolescent mother were also encouraged to involve in alleviation of the infant care responsibility of adolescent mother by holding an infant, taking an infant to sleep, caring of cord and eyes, bathing, cloths and diapers changing, etc.

2.4 Appraisal support: The primary family members of adolescent mother provided the appraisal support to adolescent mother by giving information for positive feedback, giving confidence to adolescent mothers for practicing postpartum care and infant care.

3. encouraging adolescent mother to express her need for support after childbirth and encouraging the primary family members of adolescent mother provide social support to adolescent mother

After adolescent mother and the primary family members of adolescent mother were educated about postpartum depression, social support, trained adolescent mother to express her need for support after childbirth, and trained the primary family members of adolescent mother to provide social support to adolescent mother after childbirth. The researcher encouraged adolescent mother to express her need for support after childbirth that necessary and consistent with her own needs, and encouraged the primary family members of adolescent mother to provide four dimensions of social support need to adolescent mother after hospital discharge over a period of 4 week (the 4th day to the 4th week after delivery) at the participants' home.

4. Monitoring and consultation via home-visit and telephone contact

The researcher conducted 1-time home visit (at the 7th day after delivery) to provide the informational support to adolescent mothers under real-living conditions at their home. The researcher conducted 2-time telephone contact (at the 14th and 21st day after delivery) to ask adolescent mothers regarding the support need after childbirth. As well as adolescent mothers, the telephone contacts were also delivered to the primary family members of adolescent mother in order to monitor and ensure that they enable to provide four dimensions of social support to adolescent mothers following the social support guidance. In case of the primary family members of

adolescent mother did not provide all dimensions of social support, the researcher provided a consultation.

The phases of the nurse-led social support program

The nurse-led social support program was composed of two individual implementation phases (four components) over a period of 4 weeks after delivery at postpartum unit and the participants' homes. The two phases of nurse-led social support program as follow:

Phase 1: Providing health information, training adolescent mother to express her need for support after childbirth and training the primary family members of adolescent mother to provide social support

Phase 1 of the program consisted of the 1st and the 2nd component which started providing social support to the participants after delivery to hospital discharge (meeting 1 and 2 at the 1st and 2nd day of hospitalization, respectively) at postpartum unit (60-90 minutes in each meeting). This phase purposed to understand the development of PPD in adolescent mother and the importance of social support in the prevention of PPD. Moreover, another purpose of this phase was trained the primary family members of adolescent mother to provide four dimensions of social support need after delivery (included information, emotional, instrument and appraisal support) to adolescent mother.

Phase 2: Encouraging adolescent mother to express her need for support after childbirth and encouraging the primary family members of adolescent mother provide social support to adolescent mother

Phase 2 of the program consisted of the 3rd and the 4th component which started from immediately after hospital discharge to the fourth week of postpartum period (the 4th day to the 4th week after delivery) at the participants' home. In this phase, after adolescent mother and the primary family members of adolescent mother were educated about postpartum care, infant care, and how to provide social support to adolescent mother after childbirth. The researcher encouraged the primary family members of adolescent mother to provide four dimensions of social support need to adolescent mother over a period of 4 week (the 4th day to the 4th week after delivery) at the participants' home. This phase purposed to encourage the primary family members of adolescent mother involvement to provide four dimensions of social

support need after delivery in order to alleviate the responsibility to infant care of adolescent mother via home-visiting and telephone contact.

During this phase, the researcher conducted 1-time home visit (approximately 60-90 minutes) for providing the informational support to adolescent mothers under real-living conditions at their home, and conducted 2-time telephone contacts (approximately 15-20 minutes each contact) to ask adolescent mothers regarding the support need after childbirth, and monitor the primary family members of adolescent mother for providing all dimensions of social support to adolescent mothers.

2.2 The booklet of the nurse-led social support program

The booklet of the nurse-led social support program developed by the researcher for adolescent mother and the primary family members of adolescent mother which based on literature reviews describing social support needed for adolescent mothers during postpartum period (Logsdon et al., 2002; Logsdon et al., 2005). The booklet contained the health information of postpartum depression (definition, prevalence, symptoms, risk factors, and impact of postpartum depression), the benefit of social support to prevent the development of postpartum depression, the role of the primary family members of adolescent mother to provide social support (including informational, emotional, instrumental and appraisal supports) for adolescent mother, the methods to ask for help from mother of adolescent mother, and knowledge about postpartum care and infant care (e.g. breastfeeding, family planning, medical complications of mother and infant, vaccination, postpartum check-up).

Control group (the usual nursing care)

At postpartum unit, adolescent mothers received usual nursing care during postpartum period by staff nurses. Adolescent mothers in the control group received health information about maternal health throughout the early postpartum period, nutrition, medication, breastfeeding, preparation for infant care to home, maternal-infant complications, family planning, breastfeeding-skill training, and infant care-skill training (e.g. bathing, shampooing, cord care, eyes care) by staff nurses. After discharge from hospital, adolescent mothers received postpartum care by multidisciplinary teams or health promotion hospital staffs from health promoting hospitals. Health promotion hospital staffs provided caring activities to adolescent

mother during postpartum period until 4-6 weeks after delivery by telephone contact within 7 days after delivery and home visit at least 2 times within 4-6 weeks postpartum at participants' home.

Psychometric properties of the instruments

Psychometric properties of the instruments were assumed by content validity, reliability, and pilot study.

Content validity and pilot study of the intervention

The validity of the NLSS program, a booklet, and personal information form were validated in terms of content and processes, appropriate language, and arrangement by a panel of three experts consisting of three maternal-child and midwifery nursing instructors. The researcher and major advisor revised content and others in the intervention following the experts' comments and suggestions. After that, the researcher conducted the pilot study with 5 adolescent mothers to test the feasibility of the NLSS program and found out that this intervention had a possibility for implementation.

Reliability

Generally, the reliability of the instrument will be evaluated by using internal consistency which Cronbach's alpha is .80 or above for acceptable reliability (Hair, Black, Babin, Anderson & Tatham, 2006). However, several previous studies about postpartum depression in Thai adolescent mothers found the Cronbach's alpha coefficient of the EPDS Thai version was .81 to .87 (Moontito et al., 2017; Phummanee & Roomruangwong, 2015). In this study, therefore, the EPDS Thai version is not required to re-test its reliability.

Protection of human subjects

The research proposal was submitted for the approval of the Institutional Review Committee of the Faculty of Nursing, Burapha University and the Committee of Chonburi Hospital Research Center. The researcher protected the rights of the sample group by explaining the objectives and procedures of the research prior to the beginning of the study. Participation in the study was voluntary and had the right to

refuse participation in the research at any time and without advance notice. All collected data was kept strictly confidential with the access limited to the researcher alone and the research findings would be reported as group data. When the subjects agreed to participate in the study, they were asked to sign an informed consent form, after which the researcher proceeded with the study.

Outcome measurements

The primary outcome of this study was postpartum depression scores which were measured by the EPDS.

The EPDS was measured at before intervention and after the intervention (the 4th week) to measure the outcomes immediately before and after the intervention implementation period (Sidani & Braden, 2011), and was measured the maintaining outcomes of the intervention at the 6th week and the 3rd month after delivery. Because the prevalence of postpartum depression in adolescent mothers was steadily increased through three months postpartum. The prevalence of postpartum depression was 12.5 % at the first month, and 11.8 % at 6 weeks after delivery. Furthermore, approximately one-third and more than half (36.7 % to 57 %) of adolescent mothers report the prevalence of postpartum depression was highest at three months after delivery (Brown et al., 2012; Schmidt et al., 2006). Moreover, all women will be appointed to follow up at the 6th week after delivery, it was a good opportunity for nurses to use EPDS as a tool to screen PPD at this period.

Experiment and data collection procedures

The data collection procedures consisted of preparation phase and implementation phase which conducted in the following manner:

1. Preparation phase

The preparation phase was the training the research assistants (RAs).

Training the research assistants

The researcher selected two research assistants (RAs) who were registered nurses with experience in caring for adolescent mothers. The researcher trained

the RAs with the method to allocate participants into each group, usage of the instruments, and methods for collecting data. This training consisted of the discussion session about (a) objectives, risks; and benefits of the proposed study; (b) the method for preparing the numbered sealed opaque envelopes and randomly allocating participants into each group; and (c) methods for administering the research instruments, providing instruction for the participants to complete the instruments and answering additional questions such as clarification definitions for words or phrases.

The 1st RA had a responsibility to prepare the numbered sealed opaque envelopes which were used to perform a block randomization, and randomly allocated participants into the experimental group and the control group. While the 2nd RA had a responsibility to administer the personal information form and EPDS at baseline, posttest, and follow-up together with provided instruction of the instruments to the participants.

2. Implementation phase

The implementation phase consisted of the nurse-led social support group and the control group, the details of this phase described as follows:

1. After receiving approval for the data collection from the Institutional Review Committee of the Faculty of Nursing, Burapha University and the Committee of Chonburi Hospital Research Center. The researcher requested an introduction letter from the Faculty of Nursing, Burapha University to request the permission from Postpartum Care Unit, Chonburi Hospital to collect data at the hospital.

2. The researcher and the RAs met with the Head Nurse of the Postpartum Unit, Chonburi Hospital, introduced themself and explained the purposes of the study and the data collection procedures.

3. The researcher and the RAs gathered data at Postpartum Care Unit, Chonburi Hospital, from Monday to Sunday, between 8.00 A.M. and 18.00 P.M.

4. The 1st RA screened the eligibility of adolescent mothers from medical record chart. After that, the 1st RA invited the adolescent mothers and significant providers to voluntarily participate and informed about the research objectives, data collection procedures, duration of the study benefits of the study, potential risks, withdrawal and confidentiality.

5. All participants were free to make decisions whether to participate and

asked any question or raised any concern about participating in this study.

6. After the participants had decided to participate in the study, the adolescent mothers aged below 18 years old signed the assent form and the guardians of adolescent mothers signed the consent form to permit the participation of their adolescent mothers. However, adolescent mothers aged below 18 years old who had registered the marriage registration could sign the consent form by self. For those who did not register the marriage registration, these adolescents signed the assent form. In case of adolescent mothers aged between 18-19 years old, they could sign the consent form. All participants signed the consent form before started data collection.

7. The data were simultaneously collected in the adolescent mothers both the experimental group and the control group upon randomization.

8. The 2nd RA had a responsibility to administer the personal information form and EPDS to the participants both in the experimental group and the control group at baseline, posttest, and followed-up.

9. The researcher had a responsibility to conduct the NLSS program to the participants in the experimental group.

10. The details of the implementation phase in the control group and the experimental group were as follows:

The control group

1. The 1st day hospitalization at postpartum unit (Baseline)

Adolescent mothers in the control group were asked to complete the personal information form and EPDS at baseline by the 2nd RA. After that, adolescent mothers received 3 EPDSs for screening postpartum depression at participants' home by self-report at the 4th week, the 6th week and the 3rd month after delivery, respectively.

2. The 1st day hospitalization at postpartum unit until 4 weeks after delivery at participants' home (Usual nursing care)

At postpartum unit, adolescent mothers received usual nursing care during postpartum period by staff nurses. Adolescent mothers received health information about maternal health throughout the early postpartum period, nutrition, medication, breastfeeding, preparation for infant care to home, maternal-infant complications, family planning, breastfeeding-skill training, and infant care-skill training

(e.g. bathing, shampooing, cord care, eyes care) by staff nurses. After discharge from hospital, adolescent mothers received postpartum care by multidisciplinary teams or health promotion hospital staffs from health promoting hospitals. Health promotion hospital staffs provided caring activities to adolescent mother during postpartum period until 4-6 weeks after delivery by telephone contact within 7 days after delivery and home visit at least 2 times within 4-6 weeks postpartum at participants' home.

3. The 4th week after delivery (Posttest)

Adolescent mothers received telephone contact from the 2nd RA in order to ask to complete the EPDS for screening postpartum depression at the 4th week after delivery at participants' home. The EPDS could be completed in approximately 5 minutes. After that, the 2nd RA required adolescent mothers to send photograph of the EPDS via Line®. In case of adolescent mothers could not contact the 2nd RA via Line®, telephone contact by the 2nd RA to ask the total score of EPDS was applicable.

4. The 6th week and the 3rd month after delivery (Follow-up)

Adolescent mothers received telephone contact from the 2nd RA in order to ask to complete the EPDS for screening postpartum depression at the 6th week and the 3rd month after delivery, respectively at participants' home. The EPDS could be completed in approximately 5 minutes. After that, the 2nd RA required adolescent mothers to send photograph of the EPDS via Line®. In case of adolescent mothers could not contact the 2nd RA via Line®, telephone contact by the 2nd RA to ask the total score of EPDS were applicable.

5. During data collection process, when the researcher found that the adolescent mothers in the control group had experienced postpartum depression which EPDS scores more than 13 scores at post-intervention (4 week postpartum) and follow-up period (6 week and 3 month postpartum). The researcher assessed problems and depressive symptoms such as depressed mood, loss of interest or pleasure, guilt feeling, anxiety, irritability, sleep disturbance, disturbed appetite, low energy, fatigue, lack of or excessive concern for the baby, or suicidal ideation. After that, the researcher encouraged adolescent mothers to share their problems with close family members or friends and consult nurses at hospital. In addition, at the end of the intervention, the researcher provided the booklet "social support for preventing postpartum depression in

adolescent mothers" to adolescent mothers in the control group, and encouraged adolescent mothers to ask for the need of social support and encouraged the primary family members of adolescent mother provided social support to adolescent mother.

The experimental group

1. The 1st day hospitalization at postpartum unit (Baseline)

Adolescent mothers in the experimental group were asked to complete the personal information form and EPDS at baseline by the 2nd RA. After that, adolescent mothers received 3 EPDSs for screening postpartum depression at participants' home by self-report at the 4th week, the 6th week and the 3rd month after delivery, respectively.

2. The 1st day hospitalization at postpartum unit until 4 weeks after delivery at participants' home (Intervention)

Adolescent mothers received the NLSS program by the researcher. The NLSS program consisted of four components in two individual implementation phases over a period of 4 weeks and provided support to adolescent mothers and the primary family members of adolescent mother at postpartum unit and the participants' home.

Phase 1: Providing health information, training adolescent mother to express her need for support after childbirth and training the primary family members of adolescent mother to provide social support

Phase 1 of the program started providing social support to the participants after delivery to hospital discharge (during the 1st and 2nd day hospitalization) at postpartum care unit.

Time 1: At the 1st day hospitalization (within 12-24 hours after delivery) when the primary family members of adolescent mother came to visit

The researcher provided 60-90 minutes informational support to adolescent mother and the primary family members of adolescent mother about the knowledge of postpartum depression and the importance of social support in preventing the development of postpartum depression. The researcher delivered postpartum depression and social support information in order to recognize adolescent mother for the need of social support after childbirth, and raise awareness of the primary family members of adolescent mother for providing social support to adolescent

mother. As well as educate about the signs and symptoms of postpartum depression for the detection of early symptoms of postpartum depression in adolescent mother.

Time 2: At the 2nd day hospitalization (within 24-48 hours after delivery) when the primary family members of adolescent mother came to visit

The researcher provided 60-90 minutes informational support to adolescent mother and the primary family members of adolescent mother which focused on details of information support, emotional support, instrument support and appraisal support as well as the methods to ask for help from the primary family members of adolescent mother. In this time, the researcher trained adolescent mother to ask for the need of social support after childbirth from the primary family members of adolescent mother via many methods including demonstrate, role-play, and feedback. In addition to adolescent mother, the researcher also trained the primary family members of adolescent mother for providing the social support need after delivery to adolescent mother via many methods including demonstrate, role-play, and feedback.

Phase 2: Encouraging adolescent mother to express her need for support after childbirth and encouraging the primary family members of adolescent mother provide social support to adolescent mother

Phase 2 of the program, after adolescent mother and the primary family members of adolescent mother were educated about postpartum depression, social support, trained adolescent mother to express her need for support after childbirth, and trained the primary family members of adolescent mother to provide social support to adolescent mother after childbirth. The researcher encouraged adolescent mother to express her need for support after childbirth that necessary and consistent with own needs, and encouraged the primary family members of adolescent mother to provide four dimensions of social support need to adolescent mother after hospital discharge over a period of 4 week (the 4th day to the 4th week after delivery) at the participants' home. During this phase of the program, the researcher conducted 1-time home visit and 2-time telephone contacts to adolescent mother and the primary family members of adolescent mother, the details of home visit and telephone contact as follows:

Time 3: Encouraging adolescent mother to express her need for support after childbirth and encouraging the primary family members of adolescent mother provide social support to adolescent mother

After discharge from hospital, adolescent mother were encouraged to express her need for support after childbirth that necessary and consistent with own needs under real-living conditions at their home, and the primary family members of adolescent mother were encouraged to provide social support that necessary and consistent with the needs of adolescent mothers.

Time 4: Home visiting at the 7th day after delivery

During a 1-time home visit with 90-120 minutes, the researcher had many roles to prevent postpartum depression in adolescent mothers including provider, monitor and facilitator. In the provider and monitor roles, the researcher provided the informational support about postpartum care and infant care to adolescent mothers and the primary family members of adolescent mother under real-living conditions at their home. As well as assessed adolescent mother for the need of social support after childbirth and ask for help from the primary family members of adolescent mother, and assessed activities of the primary family members of adolescent mother when provided social support to adolescent mothers after delivery under real-living conditions at their home.

In facilitator role, the researcher facilitated the primary family members of adolescent mother in the provision of social support for adolescent mother by raising awareness of the primary family members of adolescent mother as an important role for providing four dimensions of social support to adolescent mothers. In case of the primary family members of adolescent mother could not provide all dimensions of social support, the researcher provided a consultation with an appropriate resource for information support, and encouraged the primary family members of adolescent mother to continuously provide four dimensions to adolescent mothers.

Time 5: Telephone contact 1 at the 14th day after delivery

During telephone contact with 15-20 minutes, the researcher had many roles to prevent postpartum depression in adolescent mothers including provider, monitor and facilitator. The researcher conducted monitoring via telephone contact

to ask adolescent mothers regarding the support need after childbirth, monitor to ensure that the primary family members of adolescent mother enabled to provide all dimensions of social support to adolescent mothers. In case of the primary family members of adolescent mother could not provide all dimensions of social support, the researcher provided a consultation and facilitated the primary family members of adolescent mother to continuously provide four dimensions to adolescent mothers. The researcher conducted the telephone contact to adolescent mothers and the primary family members of adolescent mother of adolescent mother following telephone script form.

Time 6: Telephone contact 2 at the 21st day after delivery

During telephone contact with 15-20 minutes, the researcher had many roles to prevent postpartum depression in adolescent mothers including provider, monitor and facilitator. The researcher conducted monitoring via telephone contact to ask adolescent mothers regarding the support need after childbirth, monitor to ensure that the primary family members of adolescent mother enabled to provide all dimensions of social support to adolescent mothers. In case of the primary family members of adolescent mother could not provide all dimensions of social support, the researcher provided a consultation and facilitated the primary family members of adolescent mother to continuously provide four dimensions to adolescent mothers. The researcher conducted the telephone contact to adolescent mothers and the primary family members of adolescent mother following telephone script form.

3. The 4th week after delivery (Posttest)

Adolescent mothers received telephone contact from the 2nd RA in order to ask to complete the EPDS for screening postpartum depression at the 4th week after delivery at participants' home. The EPDS could be completed in approximately 5 minutes. After that, the 2nd RA required adolescent mothers to send photograph of the EPDS via Line®. In case of adolescent mothers could not contact the 2nd RA via Line®, telephone contact by the 2nd RA to ask the total score of EPDS was applicable.

4. The 6th week and the 3rd month after delivery (Follow-up)

Adolescent mothers received telephone contact from the 2nd RA in order to ask to complete the EPDS for screening postpartum depression at the 6th week and the 3rd month after delivery, respectively at participants' home. The EPDS could be completed in approximately 5 minutes. After that, the 2nd RA required adolescent mothers to send photograph of the EPDS via Line®. In case of adolescent mothers could not contact the 2nd RA via Line®, telephone contact by the 2nd RA to ask the total score of EPDS was applicable.

The summary of the data collection procedure will be shown in the Figure 2.

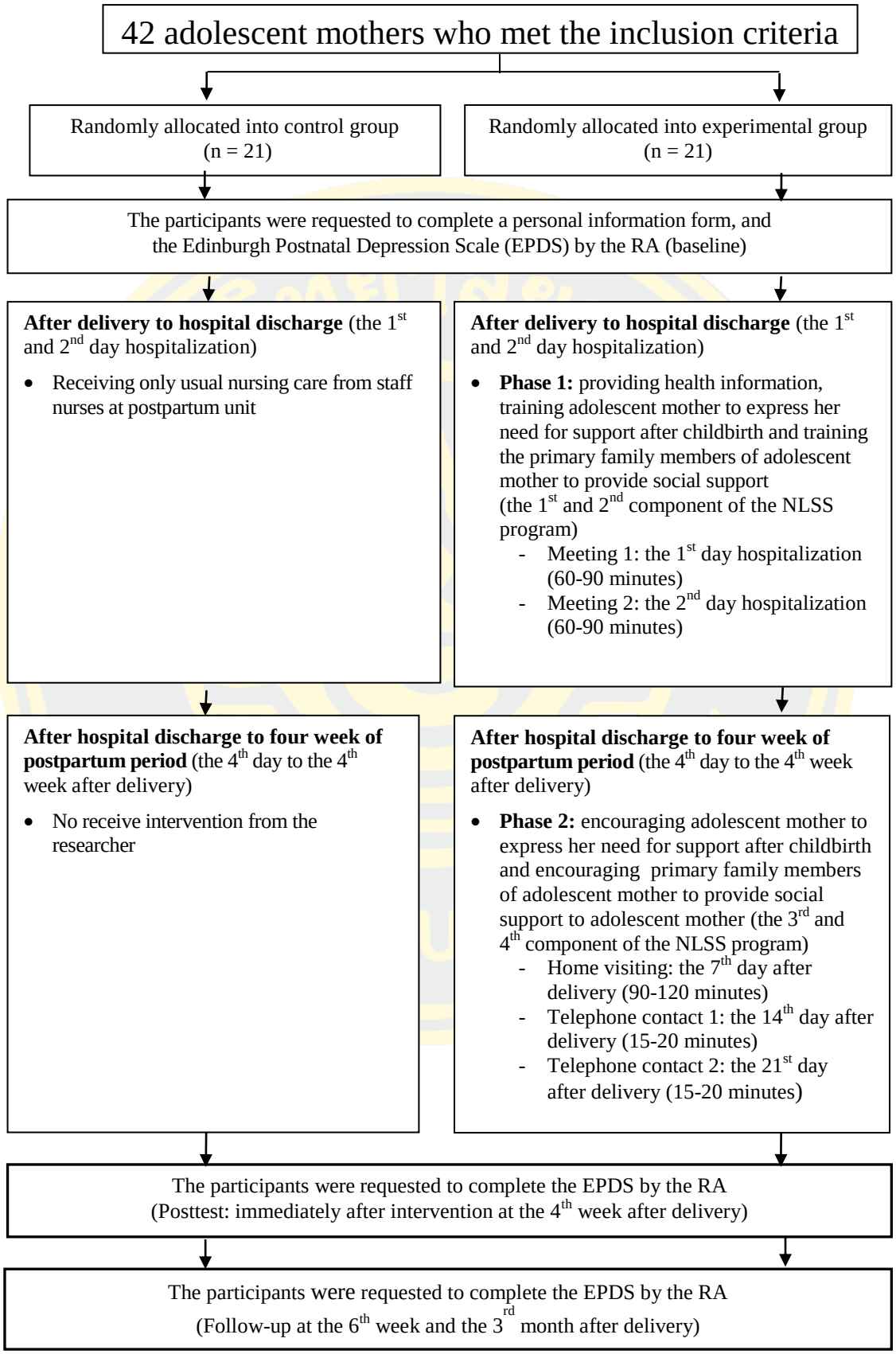

Figure 2 Summary of the data collection procedure of the study.

Data analysis

The sample's comprehensive response to the questionnaire was confirmed and only data from complete questionnaires was analyzed. Data analysis was conducted by a statistical software package program with a statistically significant level of .05 as follows:

1. The participants' characteristics were analyzed by using descriptive statistics presented in terms of frequency, percent, mean, standard deviation and range.

2. The differences in demographic characteristics between the experimental and the control groups were compared by using Chi-square test on categorical variables and *t*-test on continuous variables. If more than 20 % of the cells have the expected frequencies of less than 5, using Fisher's exact test to determine their differences in categorical variables.

3. Repeated measures ANOVA (one within-subjects variable and one between-subjects variable) with 2 x 4 design (group x time) was used to evaluate the effectiveness of the NLSS program on the mean scores of EPDS between the experimental group and the control group across four time points (at baseline, post-intervention, 6-week postpartum, and 3-month postpartum).

CHAPTER 4
RESULTS

This chapter presents the research findings which were divided into four parts. The first part describes the participants' characteristics and the comparison of the participants' characteristics between the experimental and the control groups. The second part presents the characteristics of the dependent variable. The third part reports the evaluation of assumptions of repeated measures ANOVA (one within-subjects variable and one between- subjects variable). Lastly, the final part reported the hypotheses testing

Part 1: The characteristics of participants

The characteristics of participants in both groups were analyzed by descriptive statistics including frequency, percentage, mean, standard deviations and range. The comparison any difference of baseline participants' characteristics between two groups were performed by using Chi-square test on variables which are categorical variables and using *t*-test on variables which are continuous variables. If more than 20 % of the cells have the expected frequencies of less than 5, using Fisher's exact test to determine their differences in categorical variables.

Forty-two adolescent mothers who met the inclusion criteria were divided into experimental and the control groups. Each group consisted of 21 participants. The experimental group participated in the NLSS program in combination with usual nursing care while the control group received only usual nursing care. In the 21 participants of the experimental group, one adolescent mother was not completely participated in the data collection at the follow-up period (3-month postpartum) because the researcher couldn't contact this participant at three months after delivery. While in the control group, one adolescent mother was not also completely participated in the data collection at the follow-up period (3-month postpartum) because the researcher couldn't contact this participant at three months after delivery.

Therefore, the participants' characteristics, the comparison of the participants' characteristics, the characteristics of the dependent variable and the

examine of the effectiveness of the NLSS program were analyzed based on the 40 adolescent mothers, 20 adolescent mothers in the experimental group and 20 adolescent mothers in the control group. The flow diagrams of the participants through each stage of the procedure of the study comparing the experimental and the control group are shown in the Figure 4-1.

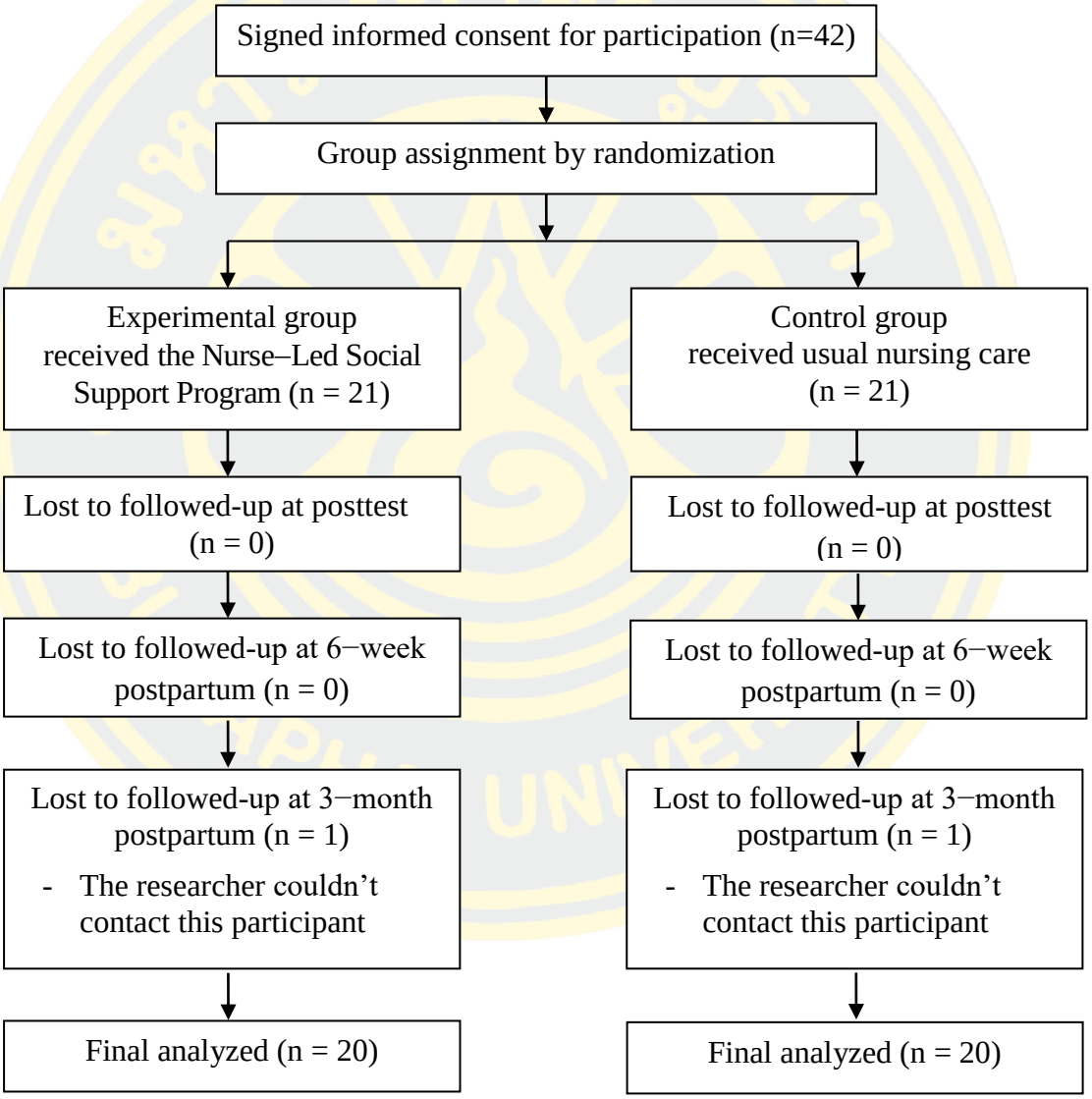

Figure 3 The flow diagrams of the participants through each stage of the procedures of the study group

1. Characteristics of adolescent mothers

Table 4-1 showed the participants' characteristics of the adolescent mothers in the experimental and the control groups. An average age of the adolescent mothers in the experimental group was 17.15 years (*SD* = 1.81, Range = 14-19), whereas the average age of the adolescent mothers in the control group was 17.65 years (*SD* = 1.46, Range = 14-19). Nearly half of the adolescent mothers in the experimental group (45.0 %) and nearly half in the control group (45.0 %) had completed primary school and lower secondary school, respectively. Most of the adolescent mothers in both groups were unemployed and worked as a housewife (60.0 % in the experimental group and 40.0 % in the control group, respectively). An average family income per month in the experimental group was close to the corresponding results of the control group (*M* = 18,000.00, *SD* = 9,558.68, Range = 10,000-50,000 and *M* = 20,050.00, *SD* = 13,188.81, Range = 8,000-50,000, respectively).

Most of the adolescent mothers in both groups were living with partner and unplanned pregnancy (70.0 % and 70.0 % in the experimental group, 75.0 % and 60.0 % in the control group, respectively). The average number of family members in both groups were 5 persons (*M* = 5.45, *SD* = 1.05, range 3-7 in the experimental group and *M* = 5.55, *SD* = 1.19, Range = 3-8 in the control group). Most of adolescent mothers in the experimental group living together mother, father and family members, followed by living with partner and partner's family (45.0 % and 35.0 %, respectively). Whereas nearly half of adolescent mothers in the control group living together partner and partner's family, followed by living with mother, father and family members (45.0 % and 30.0 %, respectively).

The comparative analysis of the characteristics of adolescent mothers between the experimental group and the control group was performed by *t*-test, Fisher's exact test and Chi-square test which found no significant difference in age, education level, occupation, family income, marital status, planned pregnancy, number of family members, and living with at a statistical level of .05 (Table 1).

Tables 1 Comparisons the demographic characteristics of adolescent mothers between the experimental and the control groups (N = 40).

Characteristics	Experimental group (n = 20)		Control group (n = 20)		t /F /χ^2	p-value
	n	%	n	%		
Age (years)					-.960[a]	.343
11-14	1	5.0	1	5.0		
15-19	19	95.0	19	95.0		
	Range = 14-19		Range = 14-19			
	M = 17.15 SD = 1.81		M = 17.65 SD = 1.46			
Education level					5.021[b]	.252
Primary school	9	45.0	3	15.0		
Lower secondary school	7	35.0	9	45.0		
Upper secondary school	3	15.0	5	25.0		
Vocational Certificate	1	5.0	3	15.0		
Occupation					2.400[c]	.301
Student	5	25.0	5	25.0		
Housewife	12	60.0	8	40.0		
Private company employee/ Laborers	3	15.0	7	35.0		
Family Income (Baht/month)					-.563[a]	.577
< 20,000	17	85.0	14	70.0		
20,001-40,000	2	10.0	4	20.0		
> 40,001	1	5.0	2	10.0		
	Range = 10,000-50,000		Range = 8,000-50,000			
	M = 18,000.00 SD = 9,558.68		M = 20,050.00 SD = 13,188.81			

[a] = t-test, [b] = Fisher's exact test, [c] = Chi-square

Table1 1 (continued)

Characteristics	Experimental group (n = 20)		Control group (n = 20)		t /F /χ^2	p-value
	n	%	n	%		
Marital status					.125[c]	.723
Single	6	30.0	5	25.0		
Living with partner	14	70.0	15	75.0		
Planned pregnancy					.440[c]	.507
Yes	6	30.0	8	40.0		
No	14	70.0	12	60.0		
Number of family members					-.282[a]	.780
	Range = 3-7		Range = 3-8			
	M = 5.45 SD = 1.05		M = 5.55 SD = 1.19			
Living with					3.531[b]	.850
Mother, father and family members	9	45.0	6	30.0		
Mother, father, family members and partner	3	15.0	4	20.0		
Partner	1	5.0	1	5.0		
Partner and partner's family	7	35.0	9	45.0		

[a] = t-test, [b] = Fisher's exact test, [c] = Chi-square

2. Characteristics of the primary family member who provided social support for adolescent mothers

Most of the primary family members who provided social support for adolescent mothers in both groups were mother, followed by partner or father of baby (50.0 % and 25.0 % in the experimental group, 45.0 % and 25.0 % in the control group, respectively). An average age of the primary family members of adolescent

mothers in the experimental group was 39.60 years (*SD* = 15.94, Range = 18-80), whereas the average age of the primary family members of adolescent mothers in the control group was 43.30 years (*SD* = 11.63, Range = 21-70). Nearly half of the primary family members of adolescent mothers in the experimental group and more than half in the control group had completed primary school (45.0 % and 60.0 %, respectively). Most of the primary family members of adolescent mothers in both groups worked as private company employee or laborers (55.0 % in the experimental group and 50.0 % in the control group). Most of the primary family members of adolescent mothers in both groups were married (60.0 % in the experimental group and 75.0 % in the control group).

The comparative analysis of the characteristics of primary family members of adolescent mothers in the experimental and the control groups was performed by *t*-test, Fisher's exact test and Chi-square test which found no significant difference in primary family members of adolescent mother, age, education level, occupation, and marital status at a statistical level of .05 (Table 2).

Tables 2 Comparisons the demographic characteristics of primary family member who provided social support for adolescent mothers between the experimental and the control groups (*N* = 40)

Characteristics	**Experimental group (*n* = 20)**		**Control group (*n* = 20)**		***t* /*F***	***p*-value**
	n	**%**	**n**	**%**		
Relationship with adolescent mother					4.225[b]	.601
Mother	10	50.0	9	45.0		
Brother or sister	2	10.0	0	0		
Grandmother	0	0	2	10.0		
Partner/ Father of baby	5	25.0	5	25.0		
Mother/ Father in law	3	15.0	4	20		

[a] = *t*-test, [b] = Fisher's exact test

Table 2 (continued)

Characteristics	Experimental group (*n* = 20)		Control group (*n* = 20)		*t* /*F*	*p*-value
	n	%	n	%		
Age (years)					-.839[a]	.407
18-30	5	25.0	3	15.0		
31-45	9	45.0	8	40.0		
46-60	4	20.0	8	40.0		
> 61	2	10.0	1	5.0		
	Range = 18-80		Range = 21-70			
	M = 39.6 *SD* = 15.94		*M* = 43.3 *SD* = 11.63			
Education level					6.361[b]	.339
Primary school	9	45.0	12	60.0		
Lower secondary school	5	25.0	2	10.0		
Upper secondary school	3	15.0	5	25.0		
Vocational certificate	1	5.0	0	0.0		
High vocational certificate	2	10.0	1	5.0		
Occupation					2.729[b]	.670
Housewife	4	20.0	4	20.0		
Merchant	4	20.0	4	20.0		
Agriculturist	1	5.0	2	10.0		
Private company employee/ Laborers	11	55.0	10	50.0		
Marital status					1.757[b]	.679
Single	2	10.0	1	5.0		
Married	12	60.0	15	75.0		
Widowed/ Divorced/ Separated	6	30.0	4	20.0		

[a] = *t*-test, [b] = Fisher's exact test

Part 2: Postpartum depression scores in the study

The dependent variable in this study was postpartum depression which was measured by using the EPDS at four times; pretest, posttest at 4 week postpartum, followed-up at 6-week postpartum and 3-month postpartum.

Table 4-3 showed the EPDS scores of the adolescent mothers in the experimental and the control groups. Before participating in the NLSS program, the mean EPDS scores of the adolescent mothers in the experimental group and the control group were similar (7.10 scores and 7.00 scores, respectively).

After participating in the NLSS program, the mean EPDS scores of the adolescent mothers in the experimental group were decreased over three time periods at posttest, and followed-up at 6-week postpartum and 3-month postpartum (5.25 scores, 4.00 scores and 3.65 scores, respectively).

In contrast, the mean EPDS scores of the adolescent mothers in the control group were increased over three time periods at posttest, and followed-up at 6-week postpartum and 3-month postpartum (11.10 scores, 11.90 scores and 13.05 scores, respectively).

Tables 3 Description of EPDS score among the adolescent mothers in the experimental and control groups at baseline, posttest at 4 week postpartum, and follow-up at 6 week postpartum and 3 month postpartum (N = 40)

EPDS scores	**Experimental group (n = 20)**			**Control group (n = 20)**		
	M	***SD***	**Range**	***M***	***SD***	**Range**
Pretest	7.10	2.10	3-10	7.00	2.36	1-10
Posttest	5.25	2.73	1-11	11.10	3.92	5-19
6 week postpartum	4.00	3.76	1-13	11.90	3.78	8-20
3 month postpartum	3.65	4.15	0-14	13.05	4.02	8-21

Table 4-4 presents the number of adolescent mothers who experienced postpartum depression. The adolescent mothers who have the EPDS scores more than or equal 13 scores were considered to have postpartum depression during postpartum

period (Cox et al., 1987). At baseline, none of all adolescent mothers in both groups experienced postpartum depression. At posttest (the 4th week postpartum), none of all adolescent mothers in the experimental group experienced postpartum depression, and one-fourth (25.0 %, *n* = 5/20) of the adolescent mothers in the control group experienced postpartum depression. At follow-up (the 6th week postpartum), a few adolescent mothers in the experimental group (5.0 %, *n* = 1/20) and about one-third (30.0 %, *n* = 6/20) of the adolescent mothers in the control group experienced postpartum depression. Lastly, at follow-up (the 3rd month postpartum), a few adolescent mothers in the experimental group (10.0 %, *n* = 2/20) and nearly half (40.0 %, *n* = 8/20) of the adolescent mothers in the control group experienced postpartum depression.

Considering new-onset of postpartum depression, the findings found one adolescent mother in the experimental group was indicated as having new-onset of postpartum depression during follow-up period at 6 week postpartum and 3 month postpartum, respectively. In the control group, five, two and two adolescent mothers were indicated as having new-onset of postpartum depression during posttest at 4 week postpartum and during follow-up period at 6 week postpartum and 3 month postpartum, respectively.

Tables 4 Description the rate of adolescent mothers who experienced postpartum depression at baseline, posttest at 4 week postpartum, and follow-up at 6 week postpartum and 3 month postpartum (N = 40)

Variables	**Experimental group (n = 20)**		**Control group (n = 20)**	
	n	**%**	**n**	**%**
Postpartum depression at baseline	0	0	0	0
Postpartum depression at posttest	0	0.00	5	25.00
Postpartum depression at 6 week postpartum	1	5.00	6	30.00
Postpartum depression at 3 month postpartum	2	10.00	8	40.00

For interpreting EPDS scores, many previous studies recommended cut-off criteria to indicate the severity of postpartum depression by using EPDS scores as following: An EPDS score less than 13 interpreting “non-depressed”; a score of 13 to 14 interpreting “moderate depression”, a score of 15 to 16 interpreting “marked depression”, and a score of 17 or more interpreting “severe depression” in postpartum mothers (Netsi et al., 2018; Putnam et al, 2017).

Table 4-5 shows that adolescent mothers in the experimental group experienced moderate depression 5 % at 6 week postpartum follow-up and 3 month postpartum follow-up, and marked depression 5 % at 3 month postpartum follow-up.

In the control group, adolescent mothers experienced moderate depression 10.0 %, 15.0 % and 10.0 % at posttest, 6 week postpartum follow-up and 3 month postpartum follow-up, respectively. Marked depression was found to be 10.0 %, 10.0 % and 15.0 % at posttest, 6 week and 3 month postpartum follow-up, respectively. Severe depression was found to be 5.0 %, 5.0 % and 15.0 % at posttest, 6 week postpartum follow-up and 3 month postpartum follow-up, respectively. These results indicated that most of depressed adolescent mothers experienced “moderate

depression” and “marked depression” during posttest at 4 week postpartum and during follow-up period at 6 week postpartum.

Considering in ethical issue, although the adolescent mothers in the control group who experienced postpartum depression at posttest and follow-up period did not received the NLSS program from the researcher during data collection process. However, the depressed adolescent mothers were assessed problems and depressive symptoms by the researcher and were encouraged to share their problems with close family members/friends and consult nurses at hospital.

Consequently, when the researcher found and advised five adolescent mothers in the control group who reported EPDS score more than 13 during posttest at 4 week postpartum. The findings found that one adolescent mother still experienced “moderate depression”, one adolescent mother still experienced “marked depression”, one adolescent mother decreased severity of postpartum depression from “moderate depression” to “non-depression”, one adolescent mother decreased severity of postpartum depression from “severe depression” to “moderate depression”, and only adolescent mother increased severity of postpartum depression from “moderate depression” to “severe depression” during follow-up period at 6 week postpartum. However, none of those depressed adolescent mothers reported suicidal ideation.

Similar to depressed adolescent mothers at 4 week postpartum, when the researcher found and advised six depressed adolescent mothers during follow-up period at 6 week postpartum. The findings found that one adolescent mother decreased severity of postpartum depression from “moderate depression” to “non-depression”, one adolescent mother still experienced “severe depression”, two adolescent mother increased severity of postpartum depression from “marked depression” to “severe depression” and two adolescent mother increased severity of postpartum depression from “moderate depression” to “marked depression” during follow-up period at 3 month postpartum. However, none of those depressed adolescent mothers reported suicidal ideation.

In addition to advise, at the end of the intervention at 3 month postpartum, the researcher provided the booklet “social support for preventing postpartum depression in adolescent mothers” to the participants in the control group both non-depressed and depressed adolescent mothers, and encouraged adolescent mothers to

ask for the need of social support and encouraged the primary family members of adolescent mother provided social support to adolescent mother. Moreover, the researcher emphasized the impacts of postpartum depression, emphasized the importance of treatment of postpartum depression and encouraged the depressed adolescent mothers to consult psychiatrists or psychiatric nurses at hospital.

Therefore, the researcher continued to remain the adolescent mothers in the control group who experienced postpartum depression at posttest (4 week postpartum) and during follow-up period at 6 week postpartum throughout the data collecting process.

Tables 5 Description frequency of EPDS scores of postpartum depression in the adolescent mothers in both groups at baseline, posttest at 4 week postpartum, and follow-up at 6 week postpartum and 3 month postpartum (N = 40)

Variables	**Experimental group (n = 20)**		**Control group (n = 20)**	
	n	**%**	**n**	**%**
Baseline				
- Non-depression	20	100.00	20	100.00
- Moderate depression	0	0.00	0	0.00
- Marked depression	0	0.00	0	0.00
- Severe depression	0	0.00	0	0.00
Posttest				
- Non-depression	20	100.00	15	75.00
- Moderate depression	0	0.00	2	10.00
- Marked depression	0	0.00	2	10.00
- Severe depression	0	0.00	1	5.00
Follow-up at 6 week postpartum				
- Non-depression	19	95.00	14	70.00
- Moderate depression	1	5.00	3	15.00
- Marked depression	0	0.00	2	10.00
- Severe depression	0	0.00	1	5.00
Follow-up at 3 month postpartum				
- Non-depression	18	90.00	12	60.00
- Moderate depression	1	5.00	2	10.00
- Marked depression	1	5.00	3	15.00
- Severe depression	0	0.00	3	15.00

EPDS < 13 = non-depression; EPDS 13-14 = moderate depression; EPDS 15-16 = marked depression; EPDS ≥17 = severe depression

Part 3: Testing assumptions of repeated measures ANOVA

Repeated measures ANOVA (one within-subjects variable and one between-subjects variable) which used to evaluate the effectiveness of the NLSS program on postpartum depression requires the test of assumption before analyzing the data as well as other univariate statistics. The assumptions of repeated measures ANOVA include missing data, normality distribution, homogeneity of the variance (one between-subject variable) and sphericity (one within-subject variable). The following assumptions were examined to ensure the validity of statistical calculations.

1. Missing data of EPDS scores of the adolescent mothers in both groups was tested. All EPDS scores which measured 4 times at pretest, posttest (4 week postpartum), and followed-up (6-week postpartum and 3-month postpartum) was accepted as no missing data.

2. Normality distribution of EPDS scores of the adolescent mothers in both groups was tested. EPDS scores of adolescent mothers in the experimental group and the control group at pretest, posttest (4-week postpartum), and followed-up (6-week postpartum and 3-month postpartum) were accepted as a normal distribution by using Fisher skewness coefficient. The Fisher skewness coefficient is calculated by dividing the measure of skewness by the standard error of skewness. The value is less than 1.96 or greater than -1.96 indicated that the distribution is significantly normal.

3. Homogeneity of the variance of EPDS scores in both groups was tested by using the Levene's test for the between-subject design. The assumption of homogeneity of the variance of EPDS scores was met. Because the EPDS scores in both groups which measured at pretest, posttest at 4 week postpartum), followed-up at 6 week postpartum and followed-up at 3 month postpartum have significance value more than .05 (.617, .064, .447 and .578, respectively). Therefore, the results indicated that the variances of EPDS scores are equal across the groups.

4. Sphericity or compound symmetry assumption of EPDS scores in both groups was tested by using the Mauchly's Test of sphericity. Sphericity is the test of equality of the variance testing within-subjects effect. In this case, Mauchly's Test of Sphericity indicated that the assumption of sphericity was violated (Mauchly's W = .115, Chi square = 79.554, $df = 5$, $p < 0.001$). Next, the researcher should consider using either the Greenhouse-Geisser correction or Huynh-Feldt to adjust

the degrees of freedom in the ANOVA test. If the Greenhouse-Geisser Sphericity Epsilon estimate is less than .75, it's recommended to use the Greenhouse-Geisser correction to assess the sphericity (Howell, 2010). In this study, the Greenhouse-Geisser was .492. Therefore, the Greenhouse-Geisser was selected to report the tests of Within-Subjects Effects to determine the interaction between times and groups of EPDS scores in the experimental group and the control group across all three time periods.

Part 4: The evaluation of the effectiveness of the NLSS program on preventing postpartum depression among adolescent mothers

Repeated measures ANOVA (one within-subjects variable and one between-subjects variable) with 2 x 4 design (group x time) was used to evaluate the change overtime of the effectiveness of the NLSS program on postpartum depression between the experimental group and the control group across four time periods at pretest, posttest at 4 week postpartum, followed-up at 6 week postpartum and followed-up at 3-month postpartum as followed.

Part 4.1 The analysis of variances of the mean EPDS scores between group and time

With reference to the aforementioned, the assumption of sphericity (compound symmetry) was violated (Mauchly's W = .115, Chi square = 79.554, $df = 5$, $p < 0.001$). Therefore, "Greenhouse-Geisser" was used to test the main effect of within-subjects variable (time). Table 4-6 showed the results of main effect of time by using a repeated measures ANOVA with a Greenhouse-Geisser correction determined that the mean scores of EPDS were statistically significant difference across the four time periods ($F_{(1.476, 56.094)} = 3.558$, $p < 0.05$).

For testing the main effect of between-subjects variable (group), Table 4-6 showed the results of main effect of group by using a repeated measures ANOVA with a Greenhouse-Geisser correction determined that the mean scores of EPDS were statistically significant difference between the experimental group and the control group ($F_{(1, 38)} = 36.803$, $p < 0.001$). The results indicated that the different groups had a statistically sig nificant effect on the mean scores of EPDS.

For the interaction effect between time and group, Greenhouse-Geisser correction determined that there were statistically significant interaction effect between the four time periods and two groups ($F(1.476, 56.094) = 46.335$, $p < 0.001$). The statistically significant interaction effect between time and group (Time x Group) means that the effect of time depends on whether the adolescent mothers received the NLSS program or the usual care. In contrast, the interaction effect also means that the effect of group depends on each time point at pretest, posttest, follow-up at 6 week postpartum and follow-up at 3 month postpartum. The findings were presented in Table 6.

Tables 6 The analysis of variances for testing the main effect of group (treatment), the main effect of time and the interaction effect between group and time

Source of Variation	***df***	***SS***	***MS***	***F***	***p*-value**
Between subjects	39	2696.994			
Group	1	1328.256	1328.256	36.803	.000***
SS w/ in groups	38	1368.738	36.091		
Within subjects	59.046	989.75			
Time	1.476	40.069	27.144	3.558	.048*
Time x Group	1.476	521.769	353.463	46.335	.000***
Time x SS w /in groups	56.094	427.912	7.628		
Total	98.046	3686.744			

*p<.05, ***p<.001

In addition, the interaction effect between time and group (Time x Group) could present in graph as shown in Figure 4.

The graph in Figure 4-2 showed that the lines on the plots are non-parallel. This indicates that there is significant interaction effect. The graph presents that the mean EPDS scores between the experimental group and the control group were similar at baseline (7.10 scores and 7.00 scores, respectively). After participating in the NLSS program, the graph showed the mean EPDS scores changed over time.

The mean scores of EPDS in the experimental group were lower than the control group at posttest 4 week postpartum (5.25 scores and 11.10 scores, respectively). Moreover, the mean scores of EPDS in the experimental group were lower than the control group at follow-up 6 week postpartum (4.00 scores and 11.90 scores, respectively) and follow-up 3 month postpartum (3.65 scores and 13.05 scores, respectively).

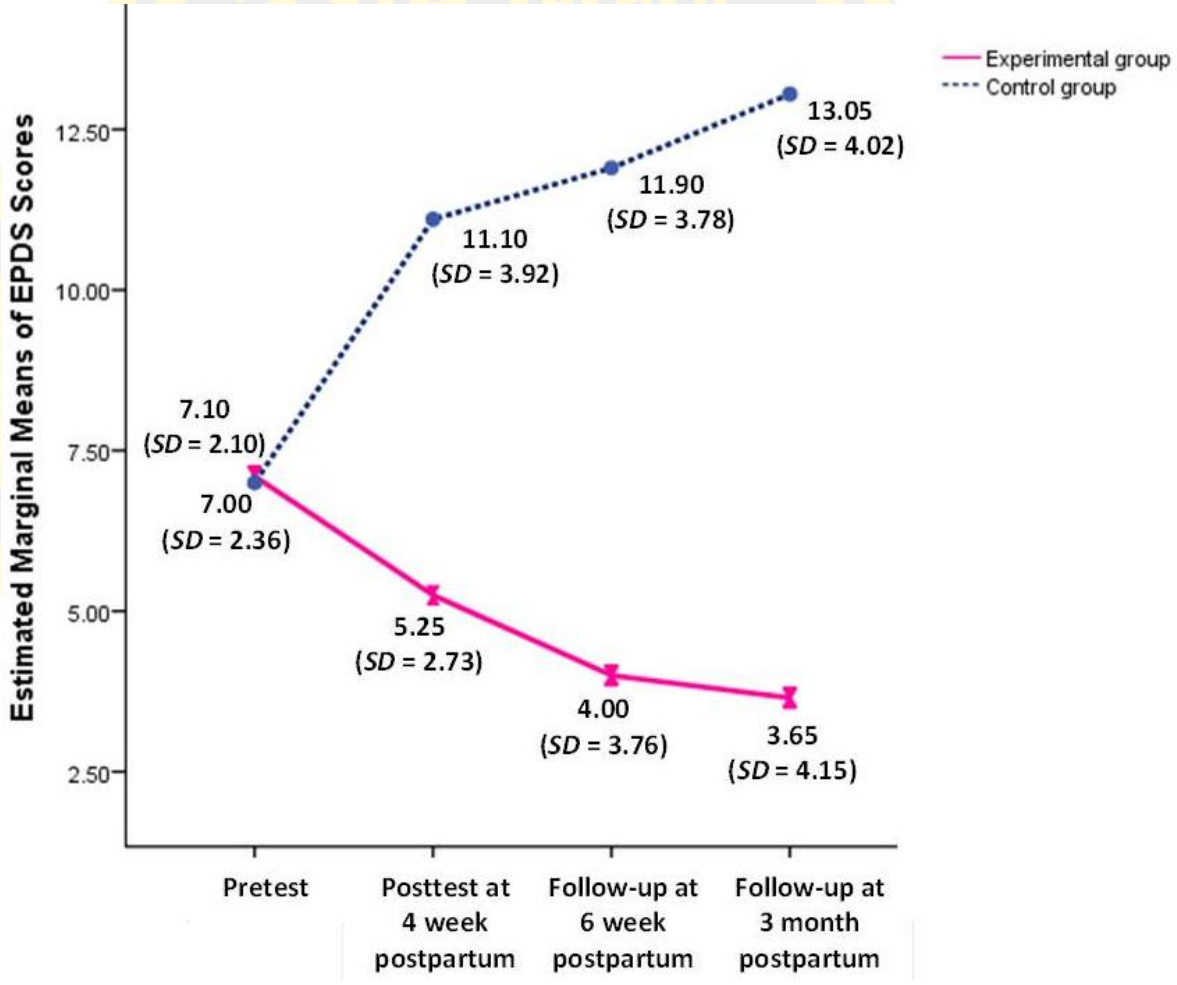

Figure 4 The graph showed the interaction effect between group (treatment) and time point (Time x Group)

Again, a repeated measures ANOVA for analyzing the interaction effect between time and group (Time x Group) in Table 4-6 showed a statistically significant interaction effect between time and group ($F_{(1.476,\ 56.094)} = 46.335$, $p < 0.001$).

This could indicate that the effect of time depended on the level of group. Conversely, the results could also indicate that the effect of group depended on the level of time. However, the results from a significant interaction effect couldn't determine the difference between variables at each level of variable. Therefore, the simple effect tests were performed after a statistically significant interaction effect from a repeated measures ANOVA. The simple effect test is the test to examine the effect of one independent variable at one level of the other independent variable (Howell, 2010).

Part 4.2 The simple effect of group at each time point

In this study, the simple effect of group at each time point is the test to examine the mean EPDS scores between adolescent mothers in the experimental group and the control group at each time point (baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum).

The mean EPDS scores at baseline between two groups was not statistically significant difference ($F_{(1, 94.094)} = .005$, $p > 0.05$). The results indicated that the mean scores of EPDS between two groups were similar at baseline, as shown in Table 4-7.

However, the mean scores of EPDS between the experimental group and the control group were statistically significant difference at posttest 4-week postpartum ($F_{(1, 94.094)} = 17.923$, $p < 0.01$), follow-up at 6 week postpartum ($F_{(1, 94.094)} = 32.686$, $p < 0.01$) and follow-up at 3 month postpartum ($F_{(1, 94.094)} = 46.276$, $p < 0.01$). The findings were presented in Table 4-7.

Therefore, considering the results from Table 4-3 and Figure 4-2, it could be indicated that the mean scores of EPDS among adolescent mothers in the experimental group were statistically significant lower than those scores in the control group over three time points at posttest (5.25 scores and 11.10 scores, respectively, $p < 0.01$), follow-up at 6 week postpartum (4.00 scores and 11.90 scores, respectively, $p < 0.01$) and follow-up at 3 month postpartum (3.65 scores and 13.05 scores, respectively, $p < 0.01$). This finding supported research hypothesis 1 of this study.

Tables 7 The simple effect of group at baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum

Source of Variation	*Df*	*SS*	*MS*	*F*
Baseline				
Between Group	1	.100	.100	.005
Within Group	94.094	1796.65	19.094	
Posttest at 4-week postpartum				
Between Group	1	342.225	342.225	17.923**
Within Group	94.094	1796.65	19.094	
Follow-up at 6-week postpartum				
Between Group	1	624.100	624.100	32.686**
Within Group	94.094	1796.65	19.094	
Follow-up at 3-month postpartum				
Between Group	1	883.600	883.600	46.276**
Within Group	94.094	1796.65	19.094	

**p<.01

$F_{.01}(1, 94.094) = 6.91$

Part 4.3 The simple effect of time in the experimental group

In this study, the simple effect of time in the experimental group is the test to examine the mean EPDS scores of adolescent mothers in the experimental group across all four time periods (baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum).

The findings showed that the mean EPDS scores of adolescent mothers in the experimental group were statistically significant difference at baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum ($F(3, 57) = 11.841$, $p < 0.01$). Therefore, the results from the simple effect of time in the experimental group indicated that the mean scores of EPDS in the experimental group were statistically significant difference across all four time periods. The findings were presented in Table 8.

Tables 8 The simple effect of time among adolescent mothers in the experimental group

Source of Variation	*Df*	*SS*	*MS*	*F*
Between Subjects	19	586.0		
Time	3	145.9	48.633	11.841**
Error	57	234.1	4.107	
Total	79	966.0		

**p<.01

$F_{.01}(3,57) = 4.15$

The results from Table 8 presented that the mean EPDS scores of adolescent mothers in the experimental group were statistically significant difference across all four time periods ($F_{(3, 57)} = 11.841$, $p < 0.01$). Therefore, the results indicated that the NLSS program could affect on postpartum depression among adolescent mothers in the experimental group at least one pair of the four times periods. Consequently, the pairwise comparisons were performed as shown in Table 9.

When comparing each pair of times, Table 4-9 presented the mean scores of EPDS in the experimental group were statistically significant difference across all four time periods from pretest to posttest at 4 week postpartum (*Mdiff* = 1.850, *SE* = .649, p <.05), from pretest to follow-up at 6 week postpartum (*Mdiff* = 3.100, *SE* = .804, p <.01), from pretest to follow-up at 3 month (*Mdiff* = 3.450, *SE* = .867, p <.01), from posttest at 4 week postpartum to follow-up at 6 week postpartum (*Mdiff* = 1.250, *SE* = .314, p <.01), and from posttest at 4 week postpartum to follow-up at 3 month postpartum (*Mdiff* = 1.600, *SE* = .492, p <.05). However, the mean scores of EPDS in the experimental group were not statistically significant difference from follow-up at 6 week postpartum to follow-up at 3 month postpartum (*Mdiff* = .350, *SE* = .302, p >.05).

Therefore, considering the results from Table 4-9, it could be indicated that the mean scores of EPDS among adolescent mothers in the experimental group at posttest 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum were statistically significant lower than those scores before participating

in the program (p <.05, p <.01 and p <.01, respectively). This finding supported research hypothesis 2 of this study.

Tables 9 Pairwise comparisons the mean EPDS scores among adolescent mothers in the experimental group at baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum

(I) time	**(J) time Comparisons**	**Mean difference (I-J)**	***SE***	***p*-value**
pretest	4 week postpartum	1.850	.649	.042*
	6 week postpartum	3.100	.804	.003**
	3 month postpartum	3.450	.867	.002**
4 week postpartum	6 week postpartum	1.250	.314	.002**
	3 month postpartum	1.600	.492	.014*
6 week postpartum	3 month postpartum	.350	.302	1.000^{ns}

^{ns}= Not significant (p>.05), *p<.05, **p<.01

Part 4.4 The simple effect of time in the control group

In this study, the simple effect of time in the control group is the test to examine the mean EPDS scores of adolescent mothers in the control group across all four time periods (baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum).

The findings showed that the mean EPDS scores of adolescent mothers in the control group were statistically significant difference at baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum ($F_{(3, 57)}$ = 40.777, p < 0.01). Therefore, the results from simple effect of time in the control group indicated that the mean scores of EPDS in the control group were statistically significant difference across all four time periods. The findings were presented in Table 10.

Tables 10 The simple effect of time among adolescent mothers in the control group

Source of Variation	*Df*	*SS*	*MS*	*F*
Between Subjects	19	782.738		
Time	3	415.938	138.645	40.777**
Error	57	193.813	3.400	
Total	79	1392.489		

**p<.01

$F_{.01}(3, 57) = 4.15$

The results from Table 10 presented that the mean EPDS scores of adolescent mothers in the control group were statistically significant difference across all four time periods ($F_{(3, 57)} = 40.777$, $p < 0.01$). Therefore, the results indicated that the usual care could affect on postpartum depression among adolescent mothers in the control group at least one pair of the four times periods. Consequently, the pairwise comparisons were performed as shown in Table 11.

When comparing each pair of times, Table 11 presented the mean scores of EPDS in the control group were statistically significant difference across all four time periods from pretest to posttest at 4 week postpartum (*Mdiff* = -4.100, *SE* = .649, p <.001), from pretest to follow-up at 6 week postpartum (*Mdiff* = -4.900, *SE* = .804, p <.001), from pretest to follow-up at 3 month postpartum (*Mdiff* = -6.050, *SE* = .867, p <.001), from posttest at 4 week postpartum to follow-up at 3 month postpartum (*Mdiff* = -1.950, *SE* = .492, p <.01), and from follow-up at 6 week postpartum to follow-up at 3 month postpartum (*Mdiff* = -1.150, *SE* = .302, p <.01). However, the mean scores of EPDS in the control group were not statistically significant difference from posttest at 4 week postpartum to follow-up at 6 week postpartum (*Mdiff* = -.800, *SE* = .314, p >.05).

Therefore, considering the results from Table 11, it could be indicated that the mean scores of EPDS among adolescent mothers in the control group at posttest 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum were statistically significant higher than those scores before participating in the program (p <.001, p <.001 and p <.001, respectively).

Tables 11 Pairwise comparisons the mean EPDS scores among adolescent mothers in the control group at baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum

(I) time	(J) time Comparisons	Mean difference (I-J)	*SE*	*p*-value
pretest	4 week postpartum	-4.100	.649	.000***
	6 week postpartum	-4.900	.804	.000***
	3 month postpartum	-6.050	.867	.000***
4 week postpartum	6 week postpartum	-.800	.314	.090^{ns}
	3 month postpartum	-1.950	.492	.002**
6 week postpartum	3 month postpartum	-1.150	.302	.003**

^{ns}= Not significant (p>.05), *p<.05, **p<.01**,** ***p<.001

Summary

The findings of the study indicated that the mean scores of EPDS among adolescent mothers in the experimental group who participated in the NLSS program were statistically significant lower than those scores in the control group at posttest, and follow-up at 6 week and 3 month postpartum.

After participating in the NLSS program, the mean scores of EPDS among adolescent mothers in the experimental group at posttest, and follow-up at 6 week and 3 month postpartum were statistically significant lower than those scores before participating in the program. While in the control group, the mean scores of EPDS among adolescent mothers in the control group at posttest, and follow-up at 6 week and 3 month postpartum were statistically significant higher than those scores before participating in the program.

Moreover, the rates of adolescent mothers in the experimental group who experienced postpartum depression were lower than those in the control group at posttest, and followed-up at 6 week and 3 month postpartum.

Therefore, the findings of the study indicated that the NLSS program was effective in the prevention of postpartum depression in adolescent mothers.

CHAPTER 5
CONCLUSION AND DISCUSSION

This chapter includes three sections. The first section presents the summary and research findings of the study. The second section presented the discussion on the effects of the NLSS program on the prevention of postpartum depression in adolescent mothers. Lastly, strengths and limitations, implications and recommendations of the study are also presented in this chapter.

Summary of the study findings

A randomized controlled trial (RCT) was conducted to examine the effectiveness of the NLSS program on the prevention of the development of postpartum depression in adolescent mothers. The NLSS program was developed by the researcher based on a social support theory and a review of related literature describing social support needed for adolescent mothers during postpartum period. The study was conducted at Postpartum Care Unit, Chonburi Hospital in Chon Buri Province, Thailand from March 2019 to August 2019. Forty-two adolescent mothers who met the inclusion criteria were randomly assigned by using a computer-generated numbers and blocked randomization into either intervention group or control group of 21 participants each. Participants in the intervention group received the NLSS program plus usual care, whereas the control group received only usual care.

The effectiveness of the NLSS program was measured at baseline, immediately after intervention, 6-week and 3-month postpartum follow-up. Postpartum depression in adolescent mothers was measured by using the EPDS which was translated in Thai version. The EPDS score ≥13 was considered to experience PPD. At the last follow-up, 20 participants were remained in the NLSS program and the control groups, respectively; the attrition rate was 4.76 %. Therefore, the data were analyzed based on the 40 adolescent mothers in both groups.

Analysis of the characteristics of participants in both groups was performed .by using descriptive statistics. A Chi-square test, Fisher's exact test and independent *t*-test were used to test the differences in demographic characteristics in both groups.

A repeated measures ANOVA (one within-subjects variable and one between-subjects variable) was used to compare the mean scores of EPDS between two groups over four times at before and after participating in the NLSS program (posttest at 4 week postpartum, followed-up at 6-week postpartum and 3-month postpartum).

The research findings of the study

1. The participants' characteristics and their primary family member in both groups were not statistically significant differences at a statistical level of .05.

2. At baseline, the mean scores of EPDS in both groups were no statistically significant differences ($F_{(1, 94.094)} = .005$, $p > 0.05$). Moreover, at baseline, none of participants in both groups reported postpartum depression.

3. For testing the main effect of time, the mean scores of EPDS were statistically significant difference across the four time periods ($F_{(1.476, 56.094)} = 3.558$, $p < 0.05$). The findings indicated that the different times had a significant effect on the mean scores of EPDS.

4. For testing the main effect of group, the mean scores of EPDS were statistically significant difference between the experimental group and the control group ($F_{(1,38)} = 36.803$, $p < 0.001$). The findings indicated that the different groups had a significant effect on the mean scores of EPDS.

5. For testing the interaction effect between time and group (Time x Group), the results show a statistically significant interaction effect between time and group ($F_{(1.476, 56.094)} = 46.335$, $p < 0.001$). This could indicate that the effect of time depends on whether the adolescent mothers received the NLSS program or the usual care. In contrast, the interaction effect also means that the effect of group depends on each time point (pretest, posttest, follow-up at 6 week postpartum and follow-up at 3 month postpartum).

6. For testing the simple effect of group at each time period, the mean EPDS scores at baseline between two groups was not statistically significant ($F_{(1, 94.094)} = .005$, $p > 0.05$). However, the mean scores of EPDS between the experimental group and the control group were statistically significant difference at posttest 4-week postpartum ($F_{(1, 94.094)} = 17.923$, $p < 0.01$), follow-up at 6 week

postpartum ($F_{(1, 94.094)} = 32.686$, $p < 0.01$) and follow-up at 3 month postpartum ($F_{(1, 94.094)} = 46.276$, $p < 0.01$).

7. The mean scores of EPDS in the experimental group were statistically significant lower than those scores in the control group across three time points at posttest 4 week postpartum (5.25 scores and 11.10 scores, respectively, $p < 0.01$), follow-up 6 week postpartum (4.00 scores and 11.90 scores, respectively, $p < 0.01$) and follow-up 3 month postpartum (3.65 scores and 13.05 scores, respectively, $p < 0.01$).

8. For testing the simple effect of time in the experimental group, the mean EPDS scores of adolescent mothers in the experimental group were statistically significant difference at baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum ($F_{(3, 57)} = 11.841$, $p < 0.01$). The findings indicated that the mean scores of EPDS in the experimental group were statistically significant difference across the four time periods.

9. When comparing each pair of times, the mean scores of EPDS in the experimental group were statistically significant difference across four time periods from pretest to posttest at 4 week postpartum (*Mdiff* = 1.850, *SE* = .649, $p < .05$), from pretest to follow-up at 6 week postpartum (*Mdiff* = 3.100, *SE* = .804, $p < .01$), from pretest to follow-up at 3 month (*Mdiff* = 3.450, *SE* = .867, $p < .01$), from posttest at 4 week postpartum to follow-up at 6 week postpartum (*Mdiff* = 1.250, *SE* = .314, $p < .01$), and from posttest at 4 week postpartum to follow-up at 3 month postpartum (*Mdiff* = 1.600, *SE* = .492, $p < .05$). However, the mean scores of EPDS in the experimental group were not statistically significant difference from follow-up at 6 week postpartum to follow-up at 3 month postpartum (*Mdiff* = .350, *SE* = .302, $p > .05$).

10. For testing the simple effect of time in the control group, the mean EPDS scores of adolescent mothers in the control group were statistically significant difference at baseline, posttest at 4 week postpartum, follow-up at 6 week postpartum and follow-up at 3 month postpartum ($F_{(3, 57)} = 40.777$, $p < 0.01$). The findings indicated that the mean scores of EPDS in the control group were statistically significant difference across the four time periods.

11. When comparing each pair of times, the mean scores of EPDS in the control group were statistically significant difference across all four time periods from pretest to posttest at 4 week postpartum (*Mdiff* = -4.100, *SE* = .649, $p < .001$), from

pretest to follow-up at 6 week postpartum (*Mdiff* = -4.900, *SE* = .804, *p* <.001), from pretest to follow-up at 3 month postpartum (*Mdiff* = -6.050, *SE* = .867, *p* <.001), from posttest at 4 week postpartum to follow-up at 3 month postpartum (*Mdiff* = -1.950, *SE* = .492, *p* <.01), and from follow-up at 6 week postpartum to follow-up at 3 month postpartum (*Mdiff* = -1.150, *SE* = .302, *p* <.01). However, the mean scores of EPDS in the control group were not statistically significant difference from posttest at 4 week postpartum to follow-up at 6 week postpartum (*Mdiff* =-.800, *SE* = .314, *p* >.05).

12. After participating in the NLSS program, the number of adolescent mothers in the experimental group reported postpartum depression symptoms lower than those in the control group at posttest (the 4th week postpartum), follow-up at the 6th week postpartum, and follow-up at the 3rd month postpartum (0.00 %, 5.00 %, and 10.00 % in the experimental group and 25.00 %, 30.00 %, and 40.00 % in the control group, respectively).

Discussion on the effectiveness of the NLSS program on the prevention of postpartum depression in adolescent mothers

After participating in the NLSS program, the findings of this study revealed that the NLSS program was effective in the prevention of postpartum depression in adolescent mothers by decreasing the mean scores of EPDS over time periods at posttest 4 week postpartum and follow-up at 6 week and 3 month postpartum when compared with the control group. The adolescent mothers in the experimental group reported more decreasing the mean scores of EPDS over time, while those in the control group reported more increasing the mean scores of EPDS over time. Moreover, the rate of postpartum depression among adolescent mothers in the experimental group decreased over time. Therefore, the effectiveness of the NLSS program on the prevention of postpartum depression were discussed based on the research hypotheses as follows

Research hypothesis 1: the mean scores of postpartum depression in the experimental group are significantly lower than those in the control group at post-intervention (4-week postpartum) and the follow-up period (6-week and 3-month postpartum).

The results of this study showed that the mean scores of EPDS in the experimental group were statistically significant lower than those scores in the control group across three time points at posttest 4 week postpartum (5.25 scores and 11.10 scores, respectively, $p < 0.01$), follow-up 6 week postpartum (4.00 scores and 11.90 scores, respectively, $p < 0.01$) and follow-up 3 month postpartum (3.65 scores and 13.05 scores, respectively, $p < 0.01$). This finding supported the research hypothesis 1 and can be explained as follows:

Adolescent and young mothers may be particularly vulnerable to the psychosocial problems during pregnancy and postpartum period because adolescent mothers face a number of challenges compared with adult mothers, such as transitioning to a new role and new responsibilities as a mother (Angley et al., 2015). Moreover, adolescent mothers experience more difficult transition to a new maternal role than adult mothers during the early-parenting period (Devito, 2007), which result adolescent mothers may be related to poorer mental health outcomes, such as psychological distress or postpartum depression (Cook & Cameron, 2015; Pinzon & Jones, 2012). However, social support can reduce the levels of maladaptation, and prevent negative consequences due to life transitions and challenges such as during postpartum period (Tsao, 2007). Social support which provided by family members, husband/ partner, friends, nurses or health care professions after childbirth is more important to all first-time mothers especially in adolescent mothers (Lanzi et al., 2009) and is known as the source to improve health outcomes for both adolescent mothers and their infant (Logsdon et al., 2002). Increasing higher social support especially after delivery can prevent postpartum depression in adolescent mothers (Brown et al., 2012; Edwards et al., 2012; Kim et al., 2014; Xie et al., 2009).

In this study, the NLSS program was designed to (1) encourage adolescent mothers to ask for the need of social support after childbirth; and (2) encourage primary family members to provide social support to adolescent mother. Therefore, the adolescent mothers who participated in the program could be received the support need after childbirth that necessary and consistent with their own needs from their primary family member. Consequently, the NLSS program could be prevent postpartum depression. The effectiveness of the NLSS program that consisted of four components could be explained following each component of the program.

The first component: Providing health information about postpartum depression and social support

The informational support was the advice, guidance, suggestions, direction, and information relevant to the situation which adolescent mothers received from other person such as family members or health care professions which help the adolescent mothers to understand and manage stressful situations. In this component, the researcher provided informational support by delivered postpartum depression and social support information in order to recognize adolescent mother for the need of social support after childbirth and raise awareness of the primary family members of adolescent mother for providing social support to adolescent mother. As well as educate about the signs and symptoms of postpartum depression for the detection of early symptoms of postpartum depression in adolescent mother. The first component of the NLSS program aimed to increase adolescent mother's knowledge about postpartum depression and social support by presenting visual displays both traditional educational source such as the booklet and electronic source such as QR code book which delivered via Line®.

During participation in the program, the researcher assessed the adolescent mothers' understanding of postpartum depression and social support, then provided additional information about these topics. When misconceptions were discovered, the researcher reviewed the information in the booklet with the adolescent mothers to correct the misunderstanding. Furthermore, the adolescent mothers' had opportunities to ask questions of the researcher and about misconceptions. The booklet contained simple and clear instructions, illustrations in order to stimulate interest and attract the attention of the adolescent mothers. The instructions and the booklet helped participants understand the causes and treatment of postpartum depression, the importance of social support during postpartum period while enhancing their understanding of the benefits of provide social support to adolescent mothers in order to prevent postpartum depression.

Subsequent to receiving verbal instructions about postpartum depression and social support, the adolescent mothers were trained to ask for the need of social support after childbirth from the primary family members of adolescent mother via many methods including demonstrate, role-play, and feedback. As well as the adolescent

mothers, the primary family members of adolescent mother were trained to provide the social support need after delivery to adolescent mother via many methods including demonstrate, role-play, and feedback. The adolescent mothers and the primary family members of adolescent mother practiced until they were competent in performing ask for support help and provide of support need so that the participants felt confidence in their abilities to perform the skills in their homes after completion of the training.

After receiving the social support training, the adolescent mothers received a booklet of the NLSS program which contained content similar to the verbal instruction. This booklet was provided for the adolescent mothers to review at home until they clearly understood the information therein.

During postpartum period, women have a high demand for health information and social support from formal and informal sources (Sword & Watts, 2005). Interestingly, several studies found that most people have poor knowledge about postpartum depression (Guy, Sterling, Walker, & Harrison, 2014; Highet, Gemmill, & Milgrom, 2011; Kingston et al., 2014; Sealy, Fraser, Simpson, Evans, & Hartford, 2009). In the NLSS program, therefore, the informational support from health professionals could be enhanced understanding of postpartum depression and the importance of social support to prevent postpartum depression. According to the study of Branquinho, Canavarro, and Fonseca (2019), they suggested that education intervention about postpartum depression can increase the level of knowledge and positive attitudes towards postpartum depression. Moreover, the participants who received health education from health care professionals (e.g., physicians, nurses) presented significantly higher levels of knowledge about postpartum depression (Branquinho et al., 2019). Providing health knowledge about postpartum depression in the topics as following symptoms, risk factors, causes and treatments can help postpartum women identify depressive symptoms, give them about information and emotional support, and encourage them to seek treatment and professional help (Highet et al., 2011; Sealy et al., 2009).

Similar to several studies found that providing the information about postpartum depression to mothers at postpartum period, especially during hospitalization immediately after delivery, was effective method to decrease the risk to develop postpartum depression (Hayes & Muller, 2004; Ho et al., 2009). According to

Kim et al. (2014), revealed that mothers who received sufficient information support about postpartum depression after delivery were less likely to report postpartum depression. Therefore, the development of educational programs for family members (parents, in-law) and couples (partner) to promote social support during pregnancy and postpartum period among postpartum women in order to decrease the development of postpartum depression should be recommended (Vaezia, Soojoodib, Banihashemic, & Nojomic, 2019). Moreover, Vaezia et al. (2019) recommended that education the family about the significant role of social support and improve social support in every aspect of health care is appropriate ways to prevent postpartum depression. Likewise, a systematic review of Vanderpuije (2014), the author suggested that the clinical interventions focusing on providing adequate prenatal and perinatal care to adolescent mothers and infants were successful on reducing repeat pregnancy, increased the frequency of healthy child clinic visits, and improved maternal mental health outcomes. Furthermore, informational support was provided by health care professionals at the medical setting in the form of education and resources to enable adolescent mothers to be successful (Vanderpuije, 2012).

Additionally, several studies of the psycho-educational intervention which focused on the informational support from health care professionals also reported the effectiveness in the prevention of postpartum depression in adult mother populations. For example, Heh and Fu (2003) conducted the study to examine the effectiveness of informational support in reducing the severity of postnatal depressive symptoms in 70 Taiwanese women. The women in the experimental group received informational support about postnatal depression from nurses during the sixth week postpartum. After intervention, the women in the intervention group who received informational support about postpartum depression were less likely to have experience EPDS scores at 3 months postpartum compared to those in the control group. The findings indicated that the informational support about postpartum depression which provided to women in the postpartum period may contribute to psychological well-being and reduce the depressive symptoms (Heh & Fu, 2003).

Similarly et al. (2009) conducted an RCT study to evaluation the effectiveness of a hospital discharge education program including informational support on postnatal depression among 200 Taiwanese first-time mothers.

The intervention group received discharge informational education program on postnatal depression provided by postpartum ward nurses. The results indicated that the mothers who received discharge education intervention on postnatal depression were less likely to have high depression scores than the control group at three months postpartum.

Other studies, Glavin, Smith, Sørum, and Ellefsen (2010) examined the effect of supportive counseling by public health nurses on postpartum depression among 228 postpartum women. All mothers in the experimental group had one supportive counselling session with the PHN with focus on the women's mental health between 6 weeks and 3 months postpartum. The PHN used active listening and empathic communication (non-directive counselling) in the counselling sessions. The results showed that the women in the supportive counseling group had significantly decreased the depressive symptoms compared to the control group both at 3 and 6 months postpartum. Ngai, Chan, and Ip (2009) examined the effect of a childbirth psycho-education program based on the concept of learned resourcefulness on maternal role competence and depressive symptoms in 184 Chinese childbearing women with gestation between 12 and 35 weeks. After intervention, the women in the intervention group who received the childbirth psycho-education program had significant improvement in learned resourcefulness at 6 weeks postpartum ($p = 0.004$) and an overall reduction in postpartum depressive symptoms ($p = 0.01$) from baseline to 6 months postpartum compared to those women in the control group (Ngai et al., 2009).

Similarly, Lara, Navarro, and Navarrete (2010) conducted the RCT study to determine the effectiveness of an antenatal psycho-educational intervention to prevent postpartum depression in 377 Mexican women who at high risk for depression. The results found that the rate of major depression in the intervention was statistically significantly lower compared to those in the control group over three time points (10.7 % and 25 %, respectively, $p < 0.05$). Another study, Howell et al. (2012) conducted the study to examine the effectiveness of a behavioral educational intervention to reduce postpartum depressive symptoms among 540 African American, Latina or Hispanic mothers. The findings of the study shown that the

mothers in the behavioral educational group were less likely to have positive depressive symptoms screening compared to the mothers in the control group at 3-weeks (8.8 % vs. 15.3 %, p = .03), 3-months (8.4 % vs. 13.24 %, p = .09) and 6-months (8.9 % vs.13.7 %, p = .11).

However, the results of this study contrast with the study of Thomas and Looney (2004) which examined the effect of two phase parenting education program among adolescent mothers. Phase I, entitled the "Nurturing Program," was a group intervention that focused on strength-based, relational parenting education, and occurred in weekly sessions for the duration of 12 weeks. Phase II was a follow-up option for those who completed Phase I, and consisted of weekly psycho-educational/ counseling parenting support groups, lasting for an additional 12 to 14 weeks. The results show that most of participants (70 %) were identified as being depressed by the CES-D Scale at 6 months. The two phases parenting educational program was not an effective intervention for treating depression (Thomas and Looney, (2004). Another antenatal/ postnatal educational support program, Walkup et al. (2009) conducted the RCT study to evaluate the efficacy of a "paraprofessional-delivered-home-visiting" intervention among American Indian adolescent mothers on parenting knowledge, involvement and maternal-infant outcomes. The intervention group received para-professional-delivered home-visiting interventions which included the 25-time visit "Family Spirit" intervention focusing antenatal and infant care with life skills of mothers. Home visits took place from 28 weeks of pregnancy to 6 months after delivery. After intervention, the results showed that the intervention group had non-significant differences in depressive symptoms, maternal stress, maternal involvement, home environment, social support and substance use when comparing to the control group at 6 and 12 months postpartum (Walkup et al., (2009).

The second component: The researcher trained adolescent mother to express her need for support after childbirth that necessary and consistent with own needs, and trained the primary family members of adolescent mother to provide social support that necessary and consistent with the needs of adolescent mothers

Numerous studies indicated that the lack of social support associated with postpartum depression. Lack or low levels of social support is one of the strongest psychosocial risk factors for developing postpartum depression both

adolescent and adult mothers (Gao et al., 2009; Heh et al., 2004; Milgrom et al., 2008; Robertson et al., 2004). Adolescent mother may be expected to need more social support during pregnancy and postpartum period (Furey, 2004). Moreover, adolescent mothers may have inadequate of social support compared to adult mothers, and they had poorer ability to make and maintain relationships with others (Crase et al., 2007; Figueirrdo et al., 2006; Logsdon et al., 2002; Wahn & Nissen, 2008). Importantly, poor relationship between family members and adolescent mothers, particularly the relationship with their mothers, are associated with increased distress in adolescent mothers (Edwards et al., 2012).

Moreover, several studies found the relationship between lack of interpersonal or communication skills with others in adolescents and social support. For example, Hammen, Brennan, and Le Brocque (2011) indicated that adolescent mothers have a higher risk to develop interpersonal skill difficulties compared to non-childbearing adolescents. Similarly, Yurdakul (2018) found that the difference of cognitive abilities, communication and social skills between adolescent mothers and adult mothers could affect adolescent mothers not only their motherhood roles but also their skills for requiring social support from other people. According to Nilsen, Karevold, Roysamb, Gustavson, and Mathiesen (2013) recommended that adolescent mothers who have poor interpersonal skills may reduce their perceived and actual social support from others.

Therefore, when adolescent mothers lack of communication with family members, they cannot ask for the need of social support during postpartum period that consistent with own needs from other people in their family. Consequently, adolescent mothers had experience lower levels of social support or inadequate social support. As a result, adolescent mothers have a high rate of postpartum depression. For this reason, the intervention that enhanced relationship and communication between adolescent mothers and family members in order to promote social support is crucial.

For example, Phipps et al. (2013) developed the intervention based on IPT intervention, called the REACH program which aimed to develop the effective communication skills to manage relationships and reduce conflicts before and after childbirth. After intervention, the results reported that the overall rate of postpartum

depression in the REACH group had lower than the control group (12.5 % and 25 %, respectively) at six months after delivery. According to the study of Miller, Gur, Shanok, and Weissman (2008), they conducted the two different groups of IPT interventions on depressive symptoms among 14 African American and Hispanic pregnant adolescents. At 12 weeks after intervention, thirteen out of the 14 adolescents showed that the depressive symptoms significantly decreased by 50 %, and the second intervention showed a 40 % decrease in the levels of depressive symptoms compared to baseline before intervention.

Accordingly, the training adolescent mother to express her need for support after childbirth, and training the primary family members of adolescent mother to provide social support needs for adolescent mothers could be promoted communication between adolescent mothers and family members, and also informed the adolescent mothers to know about four dimensions of social support after childbirth that necessary and consistent with own needs. Consequently, this component of the NLSS program could be also encouraged the adolescent mothers increasing the expression of her need for support after childbirth, and encouraged the primary family members increasing provide social support needs for adolescent mothers.

For instance, more than half of adolescent mothers (n = 13) before participating in the NLSS program told the researcher that they could not tell whether they require social support needs or assistances from others in the field? But after participating in the NLSS program, the researcher found all adolescent mothers (n = 20) could tell whether they require social support needs or assistances from the primary family members in the field? Interestingly, the significant of dimensions of social support that required by the adolescent mothers in the NLSS group were instrumental support particularly in assistance with childcare and household tasks, followed by information support, emotional support and appraisal support, respectively.

The third component: Encouraging adolescent mother to express her need for support after childbirth and encouraging the primary family members of adolescent mother provide social support to adolescent mother

After adolescent mother and the primary family members of adolescent mother in the experimental group were educated about postpartum depression, social support, trained adolescent mother to express her need for support after childbirth, and trained the primary family members of adolescent mother to provide social support to adolescent mother after childbirth. The researcher encouraged adolescent mother to express her need for support after childbirth that necessary and consistent with own needs, and encouraged the primary family members of adolescent mother to provide four dimensions of social support need to adolescent mother after hospital discharge over a period of 4 week (the 4th day to the 4th week after delivery) at the participants' home.

During motherhood period, adolescent mothers experience many challenges, more negative feelings and difficulty associated with transition into a new maternal role and mothering responsibilities (Devito, 2007; Erfina, Widyawati, McKenna, Reisenhofer, & Ismail, 2019; Mangeli et al., 2017; Mohammadi et al., 2016).Many studies indicated that social support positively influenced transition of adolescent mothers (Copeland, 2017; DeVito, 2007; Ngum Chi Watts, Liamputtong, & McMichael, 2015; Wahn, Nissen, & Ahlberg, 2005; Wilson-Mitchell, Bennett, & Stennett, 2014). Moreover, social support was also associated with the development of maternal identity in the transition period of adolescent mothers (Erfina et al., 2019). Therefore, adolescent mothers who receive social support could better-prepare to deal with difficulties during maternity and assist adolescent mothers to manage the stress of parenting during postpartum period (Letourneau, Stewart, & Barnfather, 2004; Simpson & Rholes, 2012).

With reference to the reasons, this effectiveness of the encouraging adolescent mothers to express her need for support after childbirth would be acceptable for several reasons. First, when the adolescent mothers have been discharged from the hospital, they have to care the infants by themselves and gradually transited to new maternal role. These will cause the adolescent mothers some frustration to have another major role, the maternal role. Therefore, each adolescent mother needs to figure out which perspectives are needed to support her maternal role and find someone for help and support her in the perspectives.

The sufficient social support in the needed perspectives can help prevent postpartum depression in adolescent mothers. In this research, the results have been shown that the adolescent mothers who participated in the NLSS program can ask her mother for taking care of her infant, ask her mother for preparing some food and doing household chores. These social supports from their significant providers will provide some free time to the adolescent mothers. Most importantly, the adolescent mother also needs some advices in take care the infant, bathing her infant, breast feeding and other common conditions, skin lesion, hiccups, bloating from her mother or grandmother.

Second, as well as adolescent mothers, sometimes the primary family members of adolescent mother or the supporter also need some support. The supporter needs to notice which perspectives are requested by the adolescent mother and which perspectives have to be offered to them. These will synchronize the need and help in individual circumstance. For example, the findings of the study found the mothers have promised with the researcher to help care the infant in order to provide some free time to the adolescent mother. The other mothers promised to prepared food for the adolescent mother in order to keep them nourished and can do breastfeeding well.

Therefore, the NLSS can help the participated adolescent mothers to find their needs and request that from the mothers. If the mothers' help fulfilled the adolescent needs, these will help her to success in the new maternal role and prevent them from postpartum depression.

In addition, requiring or seeking for social support from significant sources may contribute to a reduction of postpartum depression (O'Neill, Cycon, & Friedman, 2019). In the NLSS program, moreover, the researcher found the most of the primary family members who provided social support after childbirth for adolescent mothers were mother, followed by partner or father of baby (50.0 % and 25.0 %, respectively). These findings of the study are consistent with several studies that found mother of adolescent mother is one of the family members who have most common support provider and important source to support adolescent mothers during pregnancy and postpartum period (Buzi, Smith, Kozinetz, Peskin, & Wiemann, 2015; Coelho et al., 2013; Kumar et al., 2018; Pires, Araujo-Pedrosa, & Canavarro, 2014).

For example, Hudson et al. (2016), also suggested that mother of adolescent mother were the most frequency primary provider of social support after delivery

followed by boyfriend/ partner. According to Beers and Hollo (2009) found that adolescent mothers indicated the mother were the significant provider who provide social support to adolescent mothers, followed by the father of the baby. Letourneau et al. (2004) indicated that the most significant source of social support in adolescent mothers are their mothers and family members, followed by the father of their baby (Letourneau et al., 2004). In Thailand, similarly, Sriyasak et al. (2016, 2018) also reported that mother of adolescent mother was a significant source of all supports of adolescent mother from pregnancy to childrearing period.

The fourth component: monitoring and consultation via home visiting and telephone contacts.

The NLSS program that integrated between providing health information, training for asking and providing social support, home visiting, and telephone follow-up could prevent the development of postpartum depression in adolescent mothers in the experimental group. This effectiveness of the home visiting component in the NLSS program would be acceptable for several reasons. First of all, during a 1-time home visiting at the first 7^{th} day after delivery with 90 minutes, the researcher has many roles to prevent postpartum depression in adolescent mothers including provider, monitor and facilitator. In the provider and monitor roles, the researcher provides the informational support about postpartum care and infant care to adolescent mothers and the primary family members of adolescent mother under real-living conditions at their home. Second, as well as assess adolescent mother for the need of social support after childbirth and ask for help from the primary family members of adolescent mother, and assess activities of the primary family members of adolescent mother when provide social support to adolescent mothers after delivery under real-living conditions at their home.

Third, the researcher facilitates the primary family members of adolescent mother in the provision of social support for adolescent mother by raising awareness of the primary family members of adolescent mother as an important role for providing social support to adolescent mothers. In case of the primary family members of adolescent mother cannot provide social support, the researcher provided a consultation with an appropriate resource for information support, and encouraged the primary family members of adolescent mother to continuously provide to adolescent

mothers. Lastly, the researcher conducted monitoring via 15-20 minutes telephone contact at the 14th and 21th day after delivery to ask adolescent mothers regarding the support need after childbirth and monitor to ensure that the primary family members of adolescent mother enable to provide social support to adolescent mothers following telephone script form. Therefore, in this study, the results found instrumental support was the kind of supports that most required by adolescent mothers. All adolescent mothers expressed their need for support after childbirth by requesting instrumental support from their mother particularly in the assistance with childcare and household tasks. Moreover, most adolescent mothers requested the informational support and emotional support from family member especially from their mother and following from their husband/partner. However, appraisal support was the kind of support that less required by adolescent mothers.

With reference to the above details of the home visiting in the program, it may be conclude that the monitoring of social support via home visiting could not only enhance awareness for asking social support needs from others in the family particularly from mother, but also improve health information of adolescent mothers for caring newborn and reduce stressful life events due to transition to a new maternal role. Therefore, the adolescent mothers in the NLSS program could receive sufficient social support during postpartum period from the primary family members. Consequently, the program could prevent postpartum depression in adolescent mothers. These findings are consistent with those of a study conducted by Barlow et al. (2006) who conducted the RCT study to determine the effect of the paraprofessional delivered home-visiting intervention to promote knowledge of child rearing, skills, and maternal involvement in American Indian pregnant adolescents. They reported that adolescent mothers in the intervention group had greater decrease in depressive symptoms at two and six months postpartum. According to the findings of the study of Barlow et al. (2013) and Barlow et al. (2015) who examined the effectiveness of the Family Spirit home-visiting intervention on parental competence, maternal behavioral problems that impede effective parenting through early childhood, early childhood emotional and behavioral outcomes. They found that the intervention group had significantly higher parenting's knowledge and parental locus of control, lower

depressive symptoms and externalizing problems, and less use of marijuana and illegal drugs compared with the control group at 36 months postpartum follow-up.

Moreover, this finding is consistent with studies in different populations. For example, Milani et al. (2017), they investigate the effect of home visiting on postpartum depression among 276 adult mothers. The mothers in the intervention group received health care by home visiting and control group had no intervention. After the intervention, the results showed that the occurrence of depression was 7.6 % in intervention group and 19 % in control group, and there was a significant difference between two groups ($p < 0.05$). Therefore, they suggested that home visiting by health care providers after delivery are an effective way for improving social support and decreasing the incidence of postpartum depression. It can also resolve many problems for new mothers who experience many stressful and critical psychological problems, and it may play the important role for protecting the development of postpartum depression. Moreover, providing home visiting after childbirth could positive affect on postpartum depression and could improve mothers' and infants' health (Milani et al., 2017).

Furthermore, several studies found important connection between home visiting and social support during postpartum period. Dolatian, Maziyar, Alavi Majd, and Yazdjerdi (2006) found providing social support for mothers during postpartum period could play important roles in preparing them to cope with the new situation for motherhood. According to the finding of Chung and Chich (2001), they suggested that home visiting can help mothers to better cope with their new role, stressful life and empowers them to better manage taking care of themselves and their infants. Moreover, Sit, Seltman, and Wisner (2011) reported home visit during postpartum period is a suitable method to obviate the educational and supportive needs of mothers because this time is often difficult for them to go somewhere during the 1st week after delivery and it would be best if they could be provided with care services at the convenience of their home.

On the other hand, the results of this study inconsistent with the study of Barnet et al. (2002), they conducted the RCT study to evaluate the impact of a home-visiting intervention on preventing repeat pregnancy, depression, and on linking the adolescents with primary care. The home-visiting intervention was delivered by

trained home visitors which provided a parenting curriculum, encouraged contraceptive use, connected the teen with primary care, and promoted school continuation. The results showed that the home-visit intervention did not have any effect on preventing repeat pregnancy and postpartum depression or mental health problems in adolescent mothers. Similarly, Barnet et al. (2007) examined the effectiveness of the community-based home visiting intervention on adolescent mother's outcomes and linking the adolescents with primary care. The intervention group received a home-visit program which included parenting curriculum, promoting contraceptive use, linking with primary care and encouraging in school continuation. At the end of intervention, the findings suggested that the home visiting intervention did not reduce repeat pregnancy, depression, and achieve coordination with primary care. Another study, Koniak-Griffin et al. (2000) studies EIP as intervention in the intervention group and traditional public health nursing care (TPHN) in control group.
The intervention group received approximately 17 home-visits from public health nurses (PHNs) beginning from the second or third trimester to the first year postpartum. The results showed a non-significant difference of the EIP program on the internal social competence including self-esteem, sense of mastery, perceived stress and postpartum depression.

Again, with reference to the aforementioned reasons, adolescent mothers in the experimental group who participated in the NLSS program possessed sufficient understanding of postpartum depression and the significant role of social support, together with were able to ask for requesting support needs from the primary family members, particularly the mothers. Thus, the finding indicated that the NLSS program can effectively prevent the development of postpartum depression in adolescent mothers in the experimental group compared with those in the control group.

Conversely, adolescent mothers in the control group received only usual nursing care during postpartum period by staff nurses. They were instructed about maternal health throughout the early postpartum period on the topic of nutrition, medication, breastfeeding, preparation for infant care to home, maternal-infant complications, family planning, breastfeeding-skill training, and infant care-skill training (e.g. bathing, shampooing, cord care, eyes care). After discharge from hospital, adolescent mothers received postpartum care by multidisciplinary teams or

health promotion hospital staffs from health promoting hospitals by telephone contact within 7 days after delivery and home visit at least 2 times within 4-6 weeks postpartum at participants' home. These adolescent mothers, however, did not receive information about postpartum depression and the significant role of social support and had no training to ask the support need from others.

Hence, the mean scores of EPDS and the rates of postpartum depression of adolescent mothers in the control group who received only usual nursing care steadily increased over three time points. The findings of the study reported that the mean scores of EPDS were statistically significant increased from pretest to posttest at 4 week postpartum (7.00 and 11.10, p <.001), from pretest to follow-up at 6 week postpartum (7.00 and 11.90, p <.001), from pretest to follow-up at 3 month postpartum (7.00 and 13.05, p <.001), from posttest at 4 week postpartum to follow-up at 3 month postpartum (11.10 and 13.05, p <.01), and from follow-up at 6 week postpartum to follow-up at 3 month postpartum (11.90 and 13.05, p <.01). However, the mean scores of EPDS in the control group were not statistically significant difference from posttest at 4 week postpartum to follow-up at 6 week postpartum (11.10 and 11.90, p >.05). Moreover, the rates of postpartum depression of adolescent mothers in the control group were steadily increased over three time points and higher than those in the experimental group at posttest (the 4th week postpartum), follow-up at the 6th week postpartum, and follow-up at the 3rd month postpartum (25.00 %, 30.00 %, and 40.00 % in the control group and 0.00 %, 5.00 %, and 10.00 % in the experimental group, respectively).

Interestingly, the findings of the study indicated that the incidence of postpartum depression in the control group steadily increased over time periods. These findings in the study are congruent with several previous studies that found steadily increased through three months postpartum. For example, Schmidt et al. (2006) found that 36.7 % of adolescent mothers in the United States reported postpartum depression at 3 months after childbirth, 21.1 % at 48 months, and 57 % for 4 years postpartum. In a large cross- sectional study of 8,049,088 adolescent mothers in Mexico, Lara et al. (2012) presented that 2.3 % of mothers reported postpartum depression at immediate to 6 months postpartum, 13.6 %

at 7 to12 months postpartum, and 4.6 % at more than 1 year postpartum. Another study, Brown et al. (2012) found the prevalence of postpartum depression in adolescent mothers was 53 % at one month, 57 % at three months, and 57 % at one year.

Moreover, this finding is consistent with studies in different populations. For example, Gjerdingen et al. (2011) reported that the proportion of postpartum depression was greatest at 0-1 month (12.5 %), then fell to between 5.0 % and 7.1 % at 2-6 months, and rose again to 10.2 % at 9 months postpartum. The results indicated that postpartum depression was most frequent at first one month and 9 months after childbirth (Gjerdingen et al., 2011). Furthermore, Iwata et al. (2016) found that the highest prevalence of postpartum depression was occurred at the first one month after childbirth, and then slightly decreased from one month to two months and again from four months to six months after birth. Similar to another study, Fiala et al. (2017) showed that the prevalence of depressive symptoms was 12.8 % before delivery, 11.8 % at 6 weeks after delivery, and 10.1 % at 6 months after delivery.

Research hypothesis 2: the mean scores of postpartum depression in the experimental group at post-intervention (4-week postpartum) and the follow-up period (6-week and 3-month postpartum) are significantly lower than those score before participating in the program.

According to the findings of this study, the mean EPDS scores of the adolescent mothers in the experimental group who received the NLSS program steadily decreased over three time points. At post-intervention, the findings of the study indicated that the mean scores of EPDS at 4 week postpartum were statistically significant lower than those scores at baseline (7.10 vs. 5.25 score, p <.05). At follow-up period, the mean scores of EPDS at 6 week postpartum and 3 month postpartum were statistically significant lower than those scores at baseline (7.10 vs. 4.00 score, p <.01, and 7.10 vs. 3.65 score, p <.01, respectively). Moreover, when comparing postpartum depression scores between post-intervention and follow-up period, the findings also found that the mean scores of EPDS at 6 week postpartum and 3 month postpartum were statistically significant lower than those scores at post-intervention (5.25 vs. 4.00 score, p <.01 and 5.25 vs. 3.65, p <.05). Therefore, these

findings supported the research hypothesis 2 of the study and affirmed that the NLSS program was the effective to prevent postpartum depression in adolescent mothers. The preventive effect of the NLSS program can be explained as follows:

After participating in the NLSS program, the adolescent mothers in the experimental group could be received the support need after childbirth that necessary and consistent with their own needs from their primary family member. As a result, the NLSS program could be prevent postpartum depression. Therefore, the effectiveness of the NLSS program that consisted of four components could be briefly explained following each component of the program as well as the discussion in the research hypothesis 1.

In brief, the informational support from health professionals (component 1) could be enhanced understanding of postpartum depression and the importance of social support to prevent postpartum depression. Therefore, providing health information about postpartum depression from health professionals could help postpartum women identify depressive symptoms, give them about information and emotional support, and encourage them to seek treatment and professional help (Highet et al., 2011; Sealy et al., 2009). This reason is supported by the study conducted by Branquinho et al. (2019) which found the mothers who received health information about postpartum depression from health care professionals (e.g., physicians, nurses) were significantly higher levels of knowledge about postpartum depression. Another study conducted by Kim et al. (2014) found that mothers who received sufficient information support about postpartum depression after childbirth were less likely to report postpartum depression.

The training adolescent mother to ask for the support needs, and training the primary family members to provide social support needs for adolescent mothers (component 2) could be promoted communication between adolescent mothers and family members, and also informed the adolescent mothers to know about four dimensions of social support after childbirth that necessary and consistent with own needs. Therefore, this component of the NLSS program could be also encouraged the adolescent mothers increasing ask for the social support needs, and also encouraged the primary family members increasing provide social support needs

for adolescent mothers. These findings were consistent with the study conducted by Miller et al. (2008). At 12 weeks after intervention, thirteen out of the 14 adolescents showed the depressive symptoms were significantly decreased by 50 %, and the second intervention showed a 40 % decrease in the levels of depressive symptoms compared to baseline before intervention (Miller et al., 2008).

After discharge from hospital, the researcher encouraged adolescent mother to ask for the need of social support after childbirth that necessary and consistent with own needs, and encouraged the primary family members of adolescent mother to provide four dimensions of support need to adolescent mother over a period of 4 week at the participants' home (component 3). Consequently, the NLSS can help the adolescent mothers to find their needs and request that from the primary family member. If the mothers' help fulfilled the adolescent needs, these will help her to success in the new maternal role and prevent them from postpartum depression. These findings of the study affirmed that the adolescent mothers who had adequate social support could better-prepare to deal with difficulties during maternity and assist adolescent mothers to manage the stress of parenting during postpartum period (Letourneau et al., 2004; Simpson & Rholes, 2012).

The researcher monitors and consults the adolescent mothers to ask for the support need and primary family member to provide support help via home visiting and telephone contacts (component 4). In this component, the monitoring of social support via home visiting and telephone contact could not only enhance awareness for asking support needs from others in the family, but also improve health information of adolescent mothers for caring newborn and reduce stressful life events due to transition to a new maternal role. Consequently, the adolescent mothers in the NLSS program can receive sufficient social support during postpartum period from the primary family members and can decrease the depressive score over three time points. These findings of the study were consistent with the study conducted by Barlow et al. (2006) which reported that adolescent mothers in the experimental group had greater decrease the depressive symptoms at two and six months postpartum compared with those scores at baseline.

With reference to the aforementioned reasons, therefore, the findings of

the study could be indicated that the mean scores of EPDS in the adolescent mothers in the experimental group who participated in the NLSS program at 4 week, 6 week and 3 month postpartum were statistically significant lower than those scores before participating in the program.

Strengths and limitations

There are several strengths in this study. First, the study used a randomized controlled trail (RCT) design to test the effect of the NLSS program to prevent postpartum depression in adolescent mothers. RCT design is considered the most powerful experimental design in clinical study for investigating the cause and effect relationship between variables (Polit & Beck, 2004). Moreover, all participants in this study will have equal chance to randomly assign into two groups to reduce allocation bias from the researcher. Therefore, the outcomes from any differences can contribute the strongest empirical evidence of a treatment's efficacy and the outcomes can be generalized into clinical practice and the general population (Spieth et al., 2016). Secondary, this study used a double-blind method which the researcher, the participants and the assessors (research assistants: RAs) are blinded to the allocation of the intervention. Moreover, the researcher was not involved in the outcome measurements. This could minimize bias.

The third strength of the study is the first intervention for preventing PPD in adolescent mothers that focused on providing social support from family members to adolescent mothers. Fourth, the study used EPDS to measure postpartum depression. The EPDS was specifically developed to measure postpartum depressive symptoms (Cox et al., 1987). Moreover, this tool was the best measurement to use in screening postpartum depression among adolescent mothers compared to the CES-D (Logsdon & Myers, 2010). The other strength, this study used longitudinal times to measure postpartum depression in the participants that measured four times during the first three months postpartum periods. Therefore, the research can examine the effectiveness of the NLSS program both after the implementation period and the maintaining outcomes of the program.

Although the NLSS program in this study was found to has a significant effectiveness to prevent PPD in adolescent mothers. This present study had some

limitations that should be taken into consideration when interpreting the results. Most of the adolescent mothers in this study lived in urban area more than rural area. The adolescent mothers who lived in urban area have adequate access to resources for supporting during postpartum period, such as support from health centers. These circumstances may be promoted social support to the participants. Therefore, the results may not be generalized to other adolescent mothers who living in the rural area.

Implications and recommendations

The findings of this study show that the adolescent mothers who participated in the NLSS program had a lower mean score of EPDS than the adolescent mothers who received usual care only at each time point over three time points. These can indicate that the program can prevent postpartum depressive symptoms in adolescent mothers until two months after completion the intervention. Moreover, the findings of the study emphasized the important role of social support in preventing the development of postpartum depression in adolescent mothers. Therefore, the program is able to prevent the development of postpartum depression in adolescent mothers. The following actions are recommended:

Implication for nursing practice

The findings from the study contributed the effective intervention to prevent the development of postpartum depression adolescent mothers. The intervention can prevent and alleviate PPD during postpartum period in adolescent mothers.

Therefore, the NLSS program can apply in nursing interventions for nurses in postpartum units to prevent the development of PPD. Nurse professions can apply the NLSS program to implement in nursing care for adolescent mothers and family members of adolescent mothers such as mother, father, husband/ partner, and other relatives by 1) assessing the postpartum depression symptoms in adolescent mothers after delivery and before discharge from hospital, 2) adding the health information about PPD (e.g. definition, risk factors, impact, prevention, and treatment) by verbal instruction combined with handbooks or E-handbook, and 3) promoting the social support together with the routine health information about healthcare and infant care

such as prenatal and postpartum healthcare, infant care, infant feeding, family planning, etc.

Importantly, nurses or midwifery in postpartum care unit should encourage adolescent mother to ask for the need of social support and encourage the primary family members of adolescent mother for adequately providing social support to adolescent mother. Moreover, the public health nurses can apply the NLSS program for home visiting of adolescent mothers within the first week of postpartum period to promote the social support in the home situation.

Implication for health policy

The findings from the study emphasized the importance of social support covering every sector of society such as healthcare profession, family members, friends and society for reducing the development of PPD in adolescent mothers. Because social support can be seen as an essential key to overcome stress and challenges in life, and it is recognized as a mediating or buffering factor for PPD.

Therefore, the NLSS program may be used by policy makers. For example, the findings can be used as data in jointly determining health policies and developing policy guidelines to provide antenatal and postpartum care for all adolescent pregnant and adolescent mothers in order to prevent PPD by 1) screening the risk of PPD, 2) more concerning about PPD, 3) promoting the social support need in all dimensions, and 4) home visiting during the first week postpartum.

Recommendations for future research

1. In the study, the findings indicated that the NLSS program could prevent the development of postpartum depression in non-depressed adolescent mothers. Therefore, in order to cover depressed adolescent mothers, researchers may also be conducted studies to examine the effectiveness of the NLSS program in the alleviation of postpartum depression symptoms among depressed adolescent mothers.

2. The further studies of the effectiveness of the NLSS program should be conducted in other high-risk adolescent mothers to develop postpartum depression, such as single adolescent mothers, poverty adolescent mothers, or adolescent mothers who lack of social support.

3. The findings of this study measured the outcomes only during the first three months after delivery. Therefore, the further research should be determined the long-term effects of the NLSS program over 6 months to 1 year after delivery.

4. The future researches should be conducted to determine the NLSS program in multi-settings such as rural areas or other regions of the country in order to generalize the findings to various populations.

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APPENDICES

APPENDIX A

Inviting documents of experts

สำเนา
บันทึกข้อความ

ส่วนงาน มหาวิทยาลัยบูรพา คณะพยาบาลศาสตร์ งานบริการการศึกษา (บัณฑิตศึกษา) โทร.๒๘๓๖
ที่ ศธ ๖๒๐๖/ ๓๐๙๑ **วันที่** ๒๗ พฤศจิกายน พ.ศ.๒๕๖๑
เรื่อง ขอเชิญเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.วรรณทนา ศุภสีมานนท์

ด้วย นางสาวบุศรา แสงสว่าง รหัสประจำตัว ๕๙๘๑๐๐๑๐ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา ได้รับอนุมัติเค้าโครงดุษฎีนิพนธ์เรื่อง "THE EFFECTIVENESS OF A NURSE-LED SOCIAL SUPPORT PROGRAM TO PREVENT POSTPARTUM DEPRESSION AMONG ADOLESCENT MOTHERS : A RANDOMIZED CONTROLLED TRIAL" โดยมี รองศาสตราจารย์ ดร.วรรณี เดียวอิศเรศ เป็นประธานกรรมการควบคุมดุษฎีนิพนธ์ ซึ่งอยู่ในขั้นตอนการเตรียมเครื่องมือการวิจัย เนื่องจากท่านเป็นผู้มีความเชี่ยวชาญเกี่ยวกับการวิจัยดังกล่าวอย่างดียิ่ง คณะฯ จึงขออนุญาตเชิญเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัยของนิสิต ในการนี้นิสิตได้ประสานงานพร้อมทั้งมอบเอกสารให้กับท่านเรียบร้อยแล้ว

จึงเรียนมาเพื่อโปรดพิจารณาให้เกียรติเป็นผู้ตรวจสอบฯ ดังกล่าวด้วย จะเป็นพระคุณยิ่ง

(ผู้ช่วยศาสตราจารย์ ดร.พรชัย จูลเมตต์)
คณบดีคณะพยาบาลศาสตร์

ร่าง.....
พิมพ์.....
ทาน.....

สำเนา
บันทึกข้อความ

ส่วนงาน มหาวิทยาลัยบูรพา คณะพยาบาลศาสตร์ งานบริการการศึกษา (บัณฑิตศึกษา) โทร.๒๘๓๖
ที่ ศธ ๖๒๐๖/ ๓๐๙๐ **วันที่** ๒๗ พฤศจิกายน พ.ศ.๒๕๖๑
เรื่อง ขอเชิญเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.ตติรัตน์ เตชะศักดิ์ศรี

ด้วย นางสาวบุศรา แสงสว่าง รหัสประจำตัว ๕๙๘๑๐๐๑๐ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา ได้รับอนุมัติเค้าโครงดุษฎีนิพนธ์เรื่อง "THE EFFECTIVENESS OF A NURSE-LED SOCIAL SUPPORT PROGRAM TO PREVENT POSTPARTUM DEPRESSION AMONG ADOLESCENT MOTHERS : A RANDOMIZED CONTROLLED TRIAL" โดยมี รองศาสตราจารย์ ดร.วรรณี เดียวอิศเรศ เป็นประธานกรรมการควบคุมดุษฎีนิพนธ์ ซึ่งอยู่ในขั้นตอนการเตรียมเครื่องมือการวิจัย เนื่องจากท่านเป็นผู้มีความเชี่ยวชาญเกี่ยวกับการวิจัยดังกล่าวอย่างดียิ่ง คณะฯ จึงขออนุญาตเชิญเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัยของนิสิต ในการนี้นิสิตได้ประสานงานพร้อมทั้งมอบเอกสารให้กับท่านเรียบร้อยแล้ว

จึงเรียนมาเพื่อโปรดพิจารณาให้เกียรติเป็นผู้ตรวจสอบฯ ดังกล่าวด้วย จะเป็นพระคุณยิ่ง

(ผู้ช่วยศาสตราจารย์ ดร.พรชัย จูลเมตต์)
คณบดีคณะพยาบาลศาสตร์

ร่าง.....
พิมพ์.....
ทาน.....

- สำเนา -

ที่ ศธ ๖๒๐๖/๖๓๐๐

มหาวิทยาลัยบูรพา คณะพยาบาลศาสตร์
๑๖๙ ถนนลงหาดบางแสน ตำบลแสนสุข
อำเภอเมือง จังหวัดชลบุรี ๒๐๑๓๑

๖๗ พฤศจิกายน ๒๕๖๑

เรื่อง ขออนุญาตเชิญบุคลากรในสังกัดเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัย

เรียน คณบดีคณะพยาบาลศาสตร์ มหาวิทยาลัยธรรมศาสตร์

สิ่งที่ส่งมาด้วย ๑. เค้าโครงดุษฎีนิพนธ์ (ฉบับย่อ) จำนวน ๑ เล่ม
๒. โปรแกรม Nurse-Led Social Support จำนวน ๑ เล่ม
๓. คู่มือให้ความรู้การสนับสนุนทางสังคมเพื่อป้องกันภาวะซึมเศร้าฯ จำนวน ๑ เล่ม

ด้วย นางสาวบุศรา แสงสว่าง รหัสประจำตัว ๕๙๘๑๐๐๑๐ นิสิตหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาวิชาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา ได้รับอนุมัติเค้าโครงดุษฎีนิพนธ์เรื่อง "THE EFFECTIVENESS OF A NURSE-LED SOCIAL SUPPORT PROGRAM TO PREVENT POSTPARTUM DEPRESSION AMONG ADOLESCENT MOTHERS : A RANDOMIZED CONTROLLED TRIAL" โดยมี รองศาสตราจารย์ ดร.วรรณี เดียวอิศเรศ เป็นประธานกรรมการควบคุมดุษฎีนิพนธ์ ซึ่งอยู่ในขั้นตอนการเตรียมเครื่องมือการวิจัย เนื่องจาก รองศาสตราจารย์ปิยะพร ศิษย์กุลอนันต์ บุคลากรในสังกัดของท่าน เป็นผู้มีความเชี่ยวชาญเกี่ยวกับการวิจัยดังกล่าวอย่างดียิ่ง คณะฯ จึงขออนุญาตเชิญเป็นผู้ตรวจสอบความตรงตามเนื้อหาของเครื่องมือการวิจัยของนิสิต ในการนี้นิสิตได้ประสานงานพร้อมทั้งมอบเอกสารให้กับผู้ตรวจสอบความตรงฯ เรียบร้อยแล้ว

จึงเรียนมาเพื่อโปรดพิจารณาอนุญาตด้วย จะเป็นพระคุณยิ่ง

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ ดร.พรชัย จูลเมตต์)
คณบดีคณะพยาบาลศาสตร์ ปฏิบัติการแทน
ผู้ปฏิบัติหน้าที่อธิการบดีมหาวิทยาลัยบูรพา

งานบริการการศึกษา (บัณฑิตศึกษา)
โทร. ๐ ๓๘๑๐ ๒๘๓๖
โทรสาร ๐ ๓๘๓๙ ๓๔๗๖
สำเนาเรียน รองศาสตราจารย์ปิยะพร ศิษย์กุลอนันต์

ร่าง.....
พิมพ์.....
ทาน.....

APPENDIX B

Intervention and instruments English version

INTERVENTION

THE NURSE-LED SOCIAL SUPPORT PROGRAM

Study Title: The effectiveness of the nurse-led social support program to prevent postpartum depression among adolescent mothers: A randomized controlled trial

Student's name: Miss Bussara Sangsawang

Major advisor's name: Associate Professor Dr. Wannee Deoisres

The nurse-led social support program was developed by the researcher based on a social support theory (House, 1981), and the review of the related literatures describing social support needed for adolescent mothers during postpartum period (Logsdon et al., 2005; Logsdon et al., 2002) that combined both functional support and structural support. The nurse-led social support program was designed to cover four dimensions of social support (including informational, emotional, instrumental and appraisal supports), and included formal support from nurse profession (the researcher) and informal support from mother of adolescent mother.

Objectives:

The objectives of the nurse-led social support program were to:

1. educated adolescent mothers and the primary family members of adolescent mother on postpartum depression and the role of social support to prevent postpartum depression;
2. .....
3. .....

Components of the program

The nurse-led social support program delivered to adolescent mother during the 1st to the 2nd day hospitalization after childbirth by the researcher (nurse). The NLSS program consisted of four components as following 1) providing health information about postpartum depression and social support; 2) training adolescent mother to ask for the need of social support after childbirth that necessary and consistent with her own needs, and training the primary family members of adolescent mother to provide social support that necessary and consistent with the needs of

adolescent mothers; 3) encouraging adolescent mother to ask for the need of social support and encouraging the primary family members of adolescent mother provide social support to adolescent mother; and 4) monitoring and consultation via home visit and telephone contacts.

The NLSS program consisted of four components in two individual implementation phases over a period of 4 weeks, and provided social support to adolescent mothers and the primary family members of adolescent mother at postpartum unit (60-90 minutes each time) and the participants' home via 1-time home visit (90-120 minutes) and 3-time telephone contact (15-20 minutes each time).

Duration of implementation: 4 weeks

Participants: 21 adolescent mothers, and 21 the primary family members of adolescent mother in the experimental group

Setting: Postpartum unit, Chonburi Hospital, Chonburi Province

Outline of the nurse-led social support program

No.	Activities	Time-Period
1.	Providing health information about postpartum depression and social support (Phase 1 of the program)	During the 1st day and the 2nd day hospitalization
2.	Training adolescent mother to ask for the need of social support after childbirth that necessary and consistent with her own needs, and training the primary family members of adolescent mother to provide social support that necessary and consistent with the needs of adolescent mothers (Phase 1 of the program)	During the 1st day and the 2nd day hospitalization

Outline of the nurse-led social support program (Cont.)

No.	Activities	Time-Period
3.	Encouraging adolescent mother to ask for the need of social support and encouraging the primary family members of adolescent mother provide social support to adolescent mother (Phase 2 of the program)	After discharged from the hospital
4.	Monitoring and consultation via home visit and telephone contacts (Phase 2 of the program)	During the 7th, 14th, and 21st day after delivery

Outline of the phase 1 of the program (During the 1st day to the 2nd day hospitalization)

Phase 1: How did the primary family members of adolescent mother provide social support to adolescent mother?

- .....
- .....
- .....
- .....

Outline of the phase 2 of the program (After discharge from hospital and the 7th, 14th, and 21st day after delivery)

Phase 2: Encouraging adolescent mother to ask for the need of social support and encouraging the primary family members of adolescent mother provide social support to adolescent mother

- .....
- .....
- .....

Details of the activities of the nurse-led social support program

The details of the activities of the NLSS program were as follows:

Activity 1: Provided health information of postpartum depression and social support

The researcher provided informational support to adolescent mother and the primary family members of adolescent mother about the knowledge of postpartum depression and the importance of social support in preventing the development of postpartum depression to recognize adolescent mother for the need of social support after childbirth. The researcher also provided an educational booklet to reinforce what had been learned.

. .....

. .....

. .....

Activity 2 .....

Activity 3 .....

Activity 4 .....

Contents of the booklet

The booklet of the NLSS program developed by the researcher for adolescent mother and mother of adolescent mother which based on literature reviews describing social support needed for adolescent mothers during postpartum period (Logsdon et al., 2005; Logsdon et al., 2002). The main contents of the booklet included information on:

1. The information of postpartum depression
    - Definition
    .
    .
2. The benefits of social support to prevent postpartum depression
    - Definition and types of social support
    .
    .
3. .....
4. .....
5. .....

INSTRUMENTS

Part I. Personal Information form

For each Question, please fill in ..... and cross (X) one of the options that appropriate with you.

1. Adolescent mother

1. Age: ..... (Years)
2. Education level:
   - ☐ Primary education ☐ Lower secondary education
   - ☐ Upper secondary education ☐ Higher education
3. .....
4. Family Income: ..... (Bath/month)
5. Marital status:
   - ☐ Single ☐ Living with partner
6. Planned pregnancy:
   - ☐ Yes ☐ No
7. .....
8. .....

2. Mother of adolescent mother

1. Primary family members of adolescent mother
   - ☐ Mother ☐ Brother or sister
   - ☐ Grandmother ☐ Partner / Father of baby
   - ☐ Mother/ Father in law ☐ Others .....
2. Age: ..... (Years)
3. Education level:
   - ☐ Primary education ☐ Lower secondary education
   - ☐ Upper secondary education ☐ Higher education
4. .....
5. Marital status:
   - ☐ Single ☐ Married
   - ☐ Widowed ☐ Divorced/ Separated

Part II. The Edinburg Postnatal depression scale [EPDS]

As you have recently had a baby, we would like to know how you are feeling. Please check the answer and cross (X) the answer which comes closest to how you have felt IN THE PAST 7 DAYS, not just how you feel today.

Here is an example, already completed.

I have felt happy:

☐ Yes, all the time
☒ Yes, most of the time
☐ No, not very often
☐ No, not at all

This would mean: “I have felt happy most of the time” during the past week. Please complete the other questions in the same way.

In the past 7 days:

1. I have been able to laugh and see the funny side of things:

☐ As much as I always could
☐ Not quite so much now
☐ Definitely not so much now
☐ Not at all

2. I have looked forward with enjoyment to things:

☐ As much as I ever did
☐ Rather less than I used to
☐ Definitely less than I used to
☐ No, never

3. I have blamed myself unnecessarily when things went wrong:

- ☐ Yes, most of the time
- ☐ Yes, some of the time
- ☐ No, not very often
- ☐ No, never

4. .....
5. .....
6. .....
7. .....
8. .....

9. I have been so unhappy that I have been crying:

- ☐ Yes, most of the time
- ☐ Yes, quite often
- ☐ Only occasionally
- ☐ No, never

10. The thought of harming myself has occurred to me:

- ☐ Yes, quite often
- ☐ Sometimes
- ☐ Hardly ever
- ☐ Never

APPENDIX C

Intervention and instruments Thai version

โปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาล

(A nurse-led social support Program: NLSS program)

ชื่อนิสิต นางสาว บุศรา แสงสว่าง **อาจารย์ผู้ควบคุมดุษฎีนิพนธ์** ร ศ. ดร. วรรณี เดียวอิศเรศ
หลักสูตร ปรัชญาดุษฎีบัณฑิต สาขาพยาบาลศาสตร์ (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

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1. กรอบแนวคิดของโปรแกรม nurse-led social support

ความสำคัญของการพัฒนาโปรแกรม nurse-led social support การตั้งครรภ์วัยรุ่นหรือมารดาวัยรุ่นมีแนวโน้มเพิ่มสูงขึ้นเรื่อยทั้งในประเทศกำลังพัฒนาและในประเทศพัฒนาแล้วนับเป็นปัญหาทางสาธารณสุขที่สำคัญในปัจจุบัน จากสถิติกรมอนามัยปี 2015 พบอัตราการตั้งครรภ์และการคลอดบุตรของมารดาวัยรุ่นไทยอายุระหว่าง 10-19 ปี ร้อยละ 15.3 จากสถิติดังกล่าวแสดงให้เห็นว่ามีมารดาวัยรุ่นจำนวนมากที่ต้องเผชิญการเปลี่ยนแปลงในช่วงหลังคลอดทั้งด้านร่างกาย จิตใจ และสังคม

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จากการทบทวนวรรณกรรมอย่างเป็นระบบ (systematic review) พบว่าการบำบัดทางจิตสังคม (Psychosocial intervention) เป็นการบำบัดที่มีประสิทธิภาพในการป้องกันภาวะซึมเศร้าหลังคลอด การบำบัดโดยการสนับสนุนทางสังคม (Social support intervention) เป็นวิธีการหนึ่งในการบำบัดทางจิตสังคมซึ่งพบว่ามีวิธีการที่หลากหลาย เช่น การสนับสนุนจากวิชาชีพสุขภาพ การสนับสนุนจากเพื่อน การสนับสนุนจากเพื่อนผ่านโทรศัพท์ การเยี่ยมบ้าน และการให้ความรู้ อย่างไรก็ตามในปัจจุบันพบว่าประเทศไทยยังไม่มีการศึกษาเกี่ยวกับการบำบัดเพื่อป้องกันการเกิดภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น ดังนั้นผู้วิจัยจึงสนใจที่จะพัฒนา nurse-led social support Program เพื่อป้องกันการเกิดภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น

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2. วัตถุประสงค์ของโปรแกรม nurse-led social support

1. ให้ความรู้แก่มารดาวัยรุ่น ผู้สนับสนุนหลักและครอบครัวของมารดาวัยรุ่นเกี่ยวกับภาวะซึมเศร้าหลังคลอด และความสำคัญของการสนับสนุนทางสังคมในช่วงหลังคลอดต่อการป้องกันการเกิดภาวะซึมเศร้าหลังคลอด

2. ส่งเสริมให้มารดาวัยรุ่นมีทักษะในการแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดที่ตรงกับความต้องการของตนเองจากผู้สนับสนุนหลักและครอบครัวของมารดาวัยรุ่น

3. ส่งเสริมให้ผู้สนับสนุนหลักและครอบครัวของมารดาวัยรุ่น เช่น มารดา บิดา สามี ญาติ พี่น้อง ให้การสนับสนุนทางสังคมในช่วงหลังคลอดที่ตรงกับความต้องการของมารดาวัยรุ่น

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3. องค์ประกอบของโปรแกรม nurse-led social support

โปรแกรม nurse-led social support ประกอบด้วย 4 องค์ประกอบ ได้แก่ 1) การให้ข้อมูลเกี่ยวกับภาวะซึมเศร้าหลังคลอดและความสำคัญของการสนับสนุนทางสังคมต่อการป้องกันภาวะซึมเศร้าหลังคลอด 2) การฝึกมารดาวัยรุ่นให้มีทักษะในการแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดที่ตรงกับความต้องการของตนเองจากผู้สนับสนุนหลักและครอบครัวของมารดาวัยรุ่น และการฝึกผู้สนับสนุนหลักและครอบครัวของมารดาวัยรุ่นเพื่อให้การสนับสนุนทางสังคมในช่วงหลังคลอดที่ตรงกับความต้องการของมารดาวัยรุ่น, 3) การส่งเสริมให้ผู้สนับสนุนหลักและครอบครัวของมารดาวัยรุ่นให้การสนับสนุนทางสังคมในช่วงหลังคลอดแก่มารดาวัยรุ่นเมื่อกลับไปอยู่บ้าน และ 4) การติดตามและการให้คำปรึกษาเกี่ยวกับการให้การสนับสนุนทางสังคมแก่มารดาวัยรุ่นโดยการเยี่ยมบ้านและการติดตามทางโทรศัพท์

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4. ผู้เข้าร่วมการทดลอง

มารดาวัยรุ่นจำนวน 21 คน และผู้สนับสนุนหลักของมารดาวัยรุ่นจำนวน 21 ค**น**

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รายละเอียดของกิจกรรมในโปรแกรม nurse-led social support มีดังต่อไปนี้

กิจกรรมครั้งที่ 1

การให้ข้อมูลเกี่ยวกับภาวะซึมเศร้าหลังคลอดและการสนับสนุนทางสังคม

บทนำ

ภาวะซึมเศร้าหลังคลอดเป็นหนึ่งในความผิดปกติทางด้านอารมณ์และจิตใจที่พบได้มากในช่วงหลังคลอด โดยพบได้ร้อยละ 42-57 ในมารดาวัยรุ่น ทำให้ส่งผลกระทบต่อสุขภาพของมารดาวัยรุ่นและทารกได้ การขาดการสนับสนุนทางสังคมเป็นปัจจัยสำคัญที่ทำให้เกิดภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่นได้ ดังนั้นการให้ข้อมูลข่าวสารเกี่ยวกับภาวะซึมเศร้าหลังคลอดและความสำคัญของการสนับสนุนทางสังคมต่อการป้องกันภาวะซึมเศร้าหลังคลอด จึงช่วยให้แก่มารดาวัยรุ่นและผู้สนับสนุนหลักของมารดาวัยรุ่นมีความเข้าใจภาวะซึมเศร้าหลังคลอดและป้องกันความเสี่ยงต่อการเกิดภาวะซึมเศร้าหลังคลอดได้

วัตถุประสงค์

1. เพื่อให้มารดาวัยรุ่นและผู้สนับสนุนหลักของมารดาวัยรุ่นมีความรู้ ความเข้าใจเกี่ยวกับภาวะซึมเศร้าหลังคลอด และตระหนักถึงความเสี่ยงและผลกระทบจากการเกิดภาวะซึมเศร้าหลังคลอด
2. เพื่อให้มารดาวัยรุ่นและผู้สนับสนุนหลักของมารดาวัยรุ่นมีความรู้ ความเข้าใจเกี่ยวกับการความสำคัญของการสนับสนุนทางสังคมต่อการป้องกันภาวะซึมเศร้าหลังคลอด

ช่วงเวลา วันที่ 1 หลังคลอด ภายในระยะ 12-24 ชั่วโมงหลังลอด

ระยะเวลา 60-90 นาที

สื่อ/ อุปกรณ์

1. คู่มือ “การสนับสนุนช่วยเหลือเพื่อป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น”

ขั้นตอนการดำเนินกิจกรรม

1. สร้างสัมพันธภาพระหว่างผู้วิจัยกับมารดาวัยรุ่น ผู้สนับสนุนหลัก และครอบครัวของมารดาวัยรุ่น โดยทักทาย แนะนำตนเอง ชี้แจงวัตถุประสงค์ อธิบายลักษณะการทำกิจกรรม และระยะเวลาของโปรแกรม nurse-led social support
2. ผู้วิจัยสอบถามความรู้ ความเข้าใจของมารดาวัยรุ่น ผู้สนับสนุนหลัก และครอบครัวของมารดาวัยรุ่นเกี่ยวกับภาวะซึมเศร้าหลังคลอด การสนับสนุนทางสังคม และบทบาทของการสนับสนุนทางสังคมในการป้องกันภาวะซึมเศร้าหลังคลอด
3. .....
4. .....

กิจกรรมครั้งที่ 2

การฝึกทักษะการแสวงหาและขอรับการสนับสนุนทางสังคมของมารดาวัยรุ่นและการฝึกสนับสนุนทางสังคมระยะหลังคลอดของผู้สนับสนุนหลักและครอบครัว

บทนำ

การฝึกมารดาวัยรุ่นเพื่อให้มีทักษะการแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดจากผู้สนับสนุนหลักและครอบครัว ร่วมกับการฝึกผู้สนับสนุนหลักและครอบครัวของมารดาวัยรุ่นเพื่อให้การสนับสนุนทางสังคมในช่วงหลังคลอด ทำให้มารดาวัยรุ่นสามารถแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดที่จำเป็นและตรงกับความต้องการของตนเองได้

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วัตถุประสงค์

1. เพื่อให้มารดาวัยรุ่นมีความรู้ ความเข้าใจเกี่ยวกับทักษะการแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดจากผู้สนับสนุนหลัก
2. .....
3. .....
4. .....

ช่วงเวลา วันที่ 2 หลังคลอด ภายในระยะ 36-48 ชั่วโมงหลังลอด

ระยะเวลา 60-90 นาที

สื่อ/ อุปกรณ์

1. คู่มือ “การสนับสนุนช่วยเหลือเพื่อป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น”

ขั้นตอนการดำเนินกิจกรรม

1. สร้างสัมพันธภาพระหว่างผู้วิจัยกับมารดาวัยรุ่น ผู้สนับสนุนหลักและครอบครัวของมารดาวัยรุ่น โดยแนะนำตนเอง ทักทาย และชี้แจงวัตถุประสงค์ของการให้ความรู้เพื่อสร้างความคุ้นเคย
2. .....
3. .....
4. .....
5. .....
6. .....

กิจกรรมครั้งที่ 3

การส่งเสริมให้มารดาวัยรุ่นแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดและส่งเสริมให้ผู้สนับสนุนหลักให้การสนับสนุนทางสังคมแก่มารดาวัยรุ่นเมื่อกลับไปอยู่บ้าน

บทนำ

การให้การสนับสนุนทางสังคมภายหลังคลอดแก่มารดาวัยรุ่นจะช่วยลดความเสี่ยงหรือป้องกันการเกิดภาวะซึมเศร้าหลังคลอดได้ โดยเฉพาะการสนับสนุนทางสังคมที่ได้รับจากผู้สนับสนุนหลักและครอบครัวของตน ดังนั้นในกิจกรรมครั้งที่ 3 ซึ่งจะเกิดขึ้นเมื่อกลับไปอยู่บ้าน

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วัตถุประสงค์

1. เพื่อส่งเสริมและสนับสนุนให้มารดาวัยรุ่นแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดที่จำเป็นและสอดคล้องกับความต้องการของตนเองจากผู้สนับสนุนหลัก
2. .....
3. .....

ช่วงเวลา หลังจำหน่ายจากโรงพยาบาล

ระยะเวลา 4 สัปดาห์

สื่อ/ อุปกรณ์

1. คู่มือ “การสนับสนุนช่วยเหลือเพื่อป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น”

ขั้นตอนการดำเนินกิจกรรม

1. ภายหลังการสอนและการฝึกทักษะในกิจกรรมครั้งที่ 2 เสร็จสิ้น มารดาวัยรุ่นและผู้สนับสนุนหลักของมารดาวัยรุ่นจะได้รับคู่มือ “การสนับสนุนช่วยเหลือเพื่อป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น” เพื่อให้กลับไปทบทวนความรู้เมื่อจำหน่ายกลับบ้าน
2. .....
3. .....
4. .....
5. .....
6. .....

กิจกรรมครั้งที่ 4

การเยี่ยมบ้านและการติดตามทางโทรศัพท์

บทนำ

ช่วงสัปดาห์แรกหลังคลอดจะเป็นระยะที่มารดาประสบกับปัญหาในการดูแลตนเองและบุตร และเป็นระยะที่ต้องการแหล่งสนับสนุนช่วยเหลือในด้านต่างๆมากที่สุด เพื่อให้มารดาสามารถปรับตัวเข้าสู่บทบาทการเป็นมารดาได้อย่างราบรื่น การติดตามและการให้คำปรึกษาภายหลังจำหน่ายจากโรงพยาบาลจึงเป็นการส่งเสริมสุขภาพมารดาและทารก และสามารถป้องกันการเกิดภาวะซึมเศร้าหลังคลอดได้ ดังนั้นในกิจกรรมเพื่อติดตาม

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กิจกรรม 4.1 การติดตามเยี่ยมบ้าน

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ช่วงเวลา วันที่ 7 หลังคลอด

ระยะเวลา 90-120 นาที

สื่อ/ อุปกรณ์

1. คู่มือ “การสนับสนุนช่วยเหลือเพื่อป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น”
2. แบบบันทึกการติดตามเยี่ยมบ้าน

ขั้นตอนการดำเนินกิจกรรม

1. ศึกษาประวัติและภูมิหลังของมารดาวัยรุ่น สถานที่ แผนที่ การเดินทาง และสภาพแวดล้อมที่จะไป
2. สร้างสัมพันธภาพระหว่างผู้วิจัยกับมารดาวัยรุ่น และผู้สนับสนุนหลักของมารดาวัยรุ่น โดยการทักทาย แนะนำตนเอง และชี้แจงวัตถุประสงค์ของการเยี่ยมบ้านเพื่อสร้างความคุ้นเคย
3. .....
4. .....
5. .....

กิจกรรม 4.2 การติดตามทางโทรศัพท์

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ช่วงเวลา วันที่ 14 และ 21 หลังคลอด

ระยะเวลา 15-20 นาที

สื่อ/ อุปกรณ์

1. แบบฟอร์มการติดตามเยี่ยมทางโทรศัพท์
2. แบบบันทึกการติดตามทางโทรศัพท์

ขั้นตอนการดำเนินกิจกรรม

1. สร้างสัมพันธภาพระหว่างผู้วิจัยกับมารดาวัยรุ่น และผู้สนับสนุนหลักของมารดาวัยรุ่น โดยทักทายแนะนำตนเอง และชี้แจงวัตถุประสงค์ของการติดตามทางโทรศัพท์
2. .....
3. .....
4. .....
5. .....
6. .....

เครื่องมือที่ใช้ในการเก็บรวบรวมข้อมูล

ส่วนที่ 1: แบบสอบถามข้อมูลส่วนบุคคล

คำชี้แจง โปรดใส่เครื่องหมาย x ลงใน □ และเติมข้อความในช่องว่างให้ตรงกับความเป็นจริงมากที่สุด

ข้อมูลของมารดาวัยรุ่น

1. อายุ: ..... ปี
2. ระดับการศึกษาสูงสุด:
   - ☐ ประถมศึกษา
   - ☐ มัธยมศึกษาตอนต้น
   - ☐ มัธยมศึกษาตอนปลาย/ ปวช.
   - ☐ ประกาศนียบัตร/ อนุปริญญา/ ปวส.
   - ☐ มหาวิทยาลัย
3. .....
4. รายได้รวมทั้งครอบครัว ..... (บาท/เดือน)
5. สถานภาพสมรส: ☐ โสด ☐ แต่งงาน
6. ความตั้งใจในการตั้งครรภ์ครั้งนี้: ☐ ตั้งใจ ☐ ไม่ได้ตั้งใจ
7. .....
8. .....

ข้อมูลผู้สนับสนุนหลักของมารดาวัยรุ่น

1. ท่านได้รับการสนับสนุนหรือช่วยเหลือจากใคร**มากที่สุด**ในระยะหลังคลอด (ตอบได้เพียง 1 ข้อ)
   - ☐ มารดา
   - ☐ บิดา
   - ☐ พี่น้อง
   - ☐ ปู่ ย่า ตา ยาย
   - ☐ ญาติ
   - ☐ คู่สมรส/ สามี
   - ☐ เพื่อน
   - ☐ อื่นๆ ระบุ .....
2. อายุ: ..... ปี
3. ระดับการศึกษาสูงสุด:
   - ☐ ประถมศึกษา
   - ☐ มัธยมศึกษาตอนต้น
   - ☐ มัธยมศึกษาตอนปลาย/ ปวช.
   - ☐ ประกาศนียบัตร/ อนุปริญญา/ ปวส.
   - ☐ มหาวิทยาลัย
4. .....
5. สถานภาพสมรส:
   - ☐ โสด
   - ☐ แต่งงาน
   - ☐ ม่าย
   - ☐ หย่า/ แยก

ส่วนที่ 2: แบบประเมินภาวะซึมเศร้าหลังคลอดฉบับภาษาไทย

คำชี้แจง

เนื่องจากคุณเพิ่งให้กำเนิดบุตรเมื่อไม่นานมานี้ อยากทราบว่าคุณรู้สึกอย่างไร โปรดทำเครื่องหมาย x หน้าคำตอบที่ใกล้เคียงกับความรู้สึกของคุณมากที่สุดในช่วง 7 วันที่ผ่านมา โดยไม่ใช่ความรู้สึกในวันนี้

ตัวอย่าง ฉันรู้สึกมีความสุข

[ ] 0 ตลอดเวลา
[X] 1 เป็นส่วนใหญ่
[ ] 2 ไม่บ่อยนัก
[ ] 3 ไม่มีเลย

หมายถึง “ฉันรู้สึกมีความสุขเป็นส่วนใหญ่ในช่วงระยะเวลา 7 วันที่ผ่านมา”
กรุณาตอบคำถามให้ครบถ้วนในวิธีเดียวกันในระยะเวลา 7 วันที่ผ่านมา

1. ฉันสามารถหัวเราะและมองสิ่งต่างๆรอบตัวที่เกิดขึ้นได้อย่างสนุกสนาน
   [ ] 0 มากเท่าๆกับที่เคยเป็น
   [ ] 1 ค่อนข้างน้อยกว่าที่เคยเป็น
   [ ] 2 น้อยลงมากอย่างเห็นได้ชัด
   [ ] 3 ไม่มีเลย

2. ฉันรอคอยสิ่งที่จะเกิดขึ้นข้างหน้าอย่างมีความสุข
   [ ] 0 มากเท่าๆกับที่เคยเป็น
   [ ] 1 ค่อนข้างน้อยกว่าที่เคยเป็น
   [ ] 2 น้อยลงมากอย่างเห็นได้ชัด
   [ ] 3 ไม่มีเลย

3. ฉันตำหนิตัวเองโดยไม่จำเป็นเมื่อมีสิ่งผิดพลาดเกิดขึ้น
   [ ] 0 ไม่มีเลย
   [ ] 1 ไม่บ่อยนัก
   [ ] 2 บางเวลา
   [ ] 3 เกือบตลอดเวลา

4. ฉันรู้สึกกระวนกระวายอย่างไม่มีเหตุผลที่ดีเพียงพอ
   [ ] 0 ไม่มีเลย
   [ ] 1 เกือบจะไม่มี
   [ ] 2 มีบางเวลา
   [ ] 3 มีบ่อยมาก

5. .....

6. .....

7. .....

8. .....

9. ฉันรู้สึกไม่มีความสุขจนต้องร้องไห้
   [ ] 0 ไม่เคยเลย
   [ ] 1 ไม่บ่อยนัก
   [ ] 2 ค่อนข้างบ่อย
   [ ] 3 เกือบตลอดเวลา

10. ฉันมีความคิดที่จะฆ่าตัวตาย
    [ ] 0 ไม่เคยเลย
    [ ] 1 เกือบจะไม่เคย
    [ ] 2 บางเวลา
    [ ] 3 ค่อนข้างบ่อย

คู่มือ “การสนับสนุนช่วยเหลือเพื่อป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น”

คู่มือให้ความรู้

การสนับสนุนช่วยเหลือเพื่อป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น

โดย ...
น.ส. บุศรา แสงสว่าง นิสิตปริญญาเอก
รศ. ดร. วรรณี เดียวอิศเรศ อาจารย์ที่ปรึกษา
คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

คำนำ

มารดาในช่วงหลังคลอดต้องเผชิญกับความเครียดในการปรับบทบาทไปสู่การเป็นมารดาโดยเฉพาะในมารดาวัยรุ่น เนื่องจากมารดาวัยรุ่นอยู่ในช่วงที่ต้องเปลี่ยนผ่านจากวัยรุ่นไปสู่วัยผู้ใหญ่ พร้อมๆกับปรับบทบาทการเป็นมารดา จึงทำให้เสี่ยงต่อปัญหาด้านอารมณ์และจิตใจ เพิ่มโอกาสเกิดภาวะซึมเศร้าหลังคลอด และส่งผลกระทบต่อสุขภาพกายและจิตของมารดาวัยรุ่นและทารกได้

มารดาวัยรุ่นที่ได้รับการสนับสนุนทางสังคมหรือได้รับการช่วยเหลือดูแลจากสมาชิกในครอบครัว โดยเฉพาะจากผู้สนับสนุนหลักของตนเอง เช่น มารดา บิดา หรือสามี จะทำให้มารดาวัยรุ่นผ่านพ้นความเครียดในช่วงนี้ไปได้ ส่งผลให้สุขภาพจิตหลังคลอดดี และช่วยลดความเสี่ยงหรือป้องกันการเกิดภาวะซึมเศร้าหลังคลอดได้

ดังนั้นจึงมีความจำเป็นอย่างยิ่งที่มารดาวัยรุ่นและผู้สนับสนุนหลักของมารดาวัยรุ่นจะมีความรู้ความเข้าใจที่ถูกต้องเกี่ยวกับภาวะซึมเศร้าหลังคลอดและการสนับสนุนช่วยเหลือเพื่อป้องกันการเกิดภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น ผู้จัดทำหวังเป็นอย่างยิ่งว่า คู่มือ “การสนับสนุนช่วยเหลือเพื่อป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น” เล่มนี้จะเป็นประโยชน์ในการเพิ่มแรงสนับสนุนทางสังคมให้แก่มารดาวัยรุ่น และป้องกันการเกิดภาวะซึมเศร้าหลังคลอดได้

น.ส. บุศรา แสงสว่าง นิสิตปริญญาเอก
รศ. ดร. วรรณี เดียวอิศเรศ อาจารย์ที่ปรึกษา
คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

สารบัญ

APPENDIX D

The institutional review board and permission letter for data collection

THE INSTITUTIONAL REVIEW BOARD (IRB) FOR GRADUATE STUDIES
FACULTY OF NURSING, BURAPHA UNIVERSITY, THAILAND

Thesis Title The Effectiveness of A Nurse-led Social Support Program to Prevent Postpartum Depression among Adolescent Mothers: A Randomized Controlled Trial

Name Miss Bussara Sangsawang
ID: 59810010
Doctor of Philosophy in Nursing Science (International Program)

Number of the IRB approval 02 – 11 – 2561

The Institutional Review Board (IRB) for graduate studies of Faculty of Nursing, Burapha University reviewed your submitted proposal. The contingencies have been addressed and the IRB **approves** the protocol. Work on this project may begin. This approval is for a period of one year from the date of this letter and will require continuation approval if the research project extends beyond **December 14th, 2019**.

If you make any changes to the protocol during the period of this approval, you must submit a revised protocol to the IRB committee for approval before implementing the changes.

Date of Approval December 14th, 2018

Chintana Wacharasin, R.N., Ph.D.

Chairperson of the IRB
Faculty of Nursing, Burapha University, THAILAND

Tel.: 66-038-102823
Fax: 66-038-393476
E-Mail: naruemit@buu.ac.th

เอกสารเลขที่ ๗ / ๒๕๖๒ **รหัสวิจัย** ๒๒/๖๒/O/h๓

ใบรับรองโครงการวิจัย
โดย คณะกรรมการวิจัยและจริยธรรมการวิจัย โรงพยาบาลชลบุรี

.....

โครงการวิจัย : ผลของโปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาลต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น : การวิจัยเชิงทดลองแบบสุ่มชนิดมีกลุ่มควบคุม

: The Effectiveness of a Nurse – Led Social Support Program to Prevent Postpartum Depression Among Adolescent Mothers : A Randomized Controlled Trial.

ผู้ดำเนินการวิจัยหลัก : นางสาวบุศรา แสงสว่าง

หน่วยงานที่รับผิดชอบ : คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

คณะกรรมการวิจัยและจริยธรรมการวิจัย โรงพยาบาลชลบุรี ได้พิจารณาแล้วเห็นว่าสมควรให้ดำเนินการวิจัยในขอบข่ายของโครงการวิจัยที่เสนอได้

ลงนาม

(นางสาวอุษา ศิริบุญฤทธิ์)
ประธานคณะกรรมการวิจัยและจริยธรรมการวิจัย
วันที่รับรอง : ๒๐ กุมภาพันธ์ ๒๕๖๒

ลงนาม

(ผศ.พิเศษ นายแพทย์สวรรค์ ขวัญใจพานิช)
ผู้อำนวยการโรงพยาบาลชลบุรี
วันหมดอายุ : ๒๐ กุมภาพันธ์ ๒๕๖๓

เอกสารที่คณะกรรมการรับรอง
๑) โครงการวิจัย
๒) ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัยและใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย
๓) ผู้วิจัย
๔) แบบสอบถาม
๕) ใบยินยอมเข้าร่วมงานวิจัยของอาสาสมัคร

กำหนดการส่งรายงานความคืบหน้าการวิจัย
☐ ทุก ๓ เดือน ☑ ทุก ๖ เดือน

บันทึกข้อความ

ส่วนราชการ โรงพยาบาลชลบุรี กลุ่มงานส่งเสริมวิจัยเพื่อพัฒนาระบบบริการ โทร.๑๐๔๗
ที่ ชบ๐๐๓๒.๑๐๒.๙/ ๐๙๓ **วันที่** ๒๗ กุมภาพันธ์ ๒๕๖๒
เรื่อง อนุมัติให้ดำเนินการวิจัย
เรียน นางสาวบุศรา แสงสว่าง

ตามที่ ท่านมีความประสงค์ขอเก็บรวบรวมข้อมูลเพื่อทำวิจัย "ผลของโปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาลต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น : การวิจัยเชิงทดลองแบบสุ่มชนิดมีกลุ่มควบคุม : The Effectiveness of a Nurse – Led Social Support Program to Prevent Postpartum Depression Among Adolescent Mothers : A Randomized Controlled Trial.

ในการนี้ คณะกรรมการวิจัยและจริยธรรมการวิจัย ประชุมเมื่อวันที่ ๒๐ กุมภาพันธ์ ๒๕๖๒ ณ ห้องประชุมนายแพทย์สุจินต์ ผลากรกุล ชั้น ๔ พิจารณาแล้วเห็นชอบควรสนับสนุนให้ดำเนินการวิจัยตามขอบเขตที่กำหนดได้

๑. รายงานความก้าวหน้าทุก ๖ เดือน
๒. ขอให้นำเอกสารที่ใช้ในการเก็บข้อมูล, เอกสารชี้แจงอาสาสมัครและใบยินยอมมาประทับตรา

จึงเรียนมาเพื่อโปรดทราบ

(นางสาวอุษา ศิริบุญฤทธิ์)
นายแพทย์เชี่ยวชาญ
ประธานคณะกรรมการวิจัยและจริยธรรมการวิจัย โรงพยาบาลชลบุรี

(นางสาววาสนา หงษ์กัน)
นายแพทย์เชี่ยวชาญ
หัวหน้ากลุ่มงานส่งเสริมวิจัยเพื่อพัฒนาระบบบริการ

บันทึกข้อความ

ส่วนราชการ โรงพยาบาลชลบุรี กลุ่มงานส่งเสริมวิจัยเพื่อพัฒนาระบบบริการ โทร.๑๐๔๗

ที่ ชบ๐๐๓๒.๑๐๒.๙/ ๐๙๒ **วันที่** ๒๙ กุมภาพันธ์ ๒๕๖๒

เรื่อง อนุมัติให้ดำเนินการวิจัย

เรียน ผู้อำนวยการโรงพยาบาลชลบุรี

ตามที่ นางสาวบุศรา แสงสว่าง คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา มีความประสงค์ขอเก็บรวบรวมข้อมูลเพื่อทำวิจัย เรื่อง "ผลของโปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาลต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น : การวิจัยเชิงทดลองแบบสุ่มชนิดมีกลุ่มควบคุม : The Effectiveness of a Nurse – Led Social Support Program to Prevent Postpartum Depression Among Adolescent Mothers : A Randomized Controlled Trial.

ในการนี้ คณะกรรมการวิจัยและจริยธรรมการวิจัย ประชุมเมื่อวันที่ ๒๐ กุมภาพันธ์ ๒๕๖๒ ณ ห้องประชุมนายแพทย์สุจินต์ ผลากรกุล ชั้น ๔ พิจารณาแล้วเห็นชอบควรสนับสนุนให้ดำเนินการวิจัยตามขอบเขตที่กำหนดได้

จึงเรียนมาเพื่อโปรดพิจารณา หากเห็นชอบโปรดลงนามในหนังสืออนุมัติให้ทำงานวิจัยและเอกสารรับรองโครงการวิจัยที่แนบมา

(นางสาวอุษา ศิริบุญฤทธิ์)
นายแพทย์เชี่ยวชาญ
ประธานคณะกรรมการวิจัยและจริยธรรมการวิจัย โรงพยาบาลชลบุรี

(นางสาววาสนา หงษ์กัน)
นายแพทย์เชี่ยวชาญ
หัวหน้ากลุ่มงานส่งเสริมวิจัยเพื่อพัฒนาระบบบริการ

(นายสาธร ชวิญไพศาลิย)
ผู้อำนวยการโรงพยาบาลชลบุรี
๑๑ มีค. ๒๕๖๒

บันทึกข้อความ

ส่วนราชการ โรงพยาบาลชลบุรี กลุ่มงานส่งเสริมวิจัยเพื่อพัฒนาระบบบริการ โทร.๑๐๔๗

ที่ ชบ๐๐๓๒.๑๐๒.๙/ ๐๙๒ **วันที่** ๒๗ กุมภาพันธ์ ๒๕๖๒

เรื่อง อนุมัติให้ดำเนินการวิจัย

เรียน หัวหน้ากลุ่มการพยาบาล โรงพยาบาลชลบุรี

ตามที่ นางสาวบุศรา แสงสว่าง คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา มีความประสงค์ขอเก็บรวบรวมข้อมูลเพื่อทำวิจัย เรื่อง "ผลของโปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาลต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น : การวิจัยเชิงทดลองแบบสุ่มชนิดมีกลุ่มควบคุม : The Effectiveness of a Nurse – Led Social Support Program to Prevent Postpartum Depression Among Adolescent Mothers : A Randomized Controlled Trial.

ในการนี้ คณะกรรมการวิจัยและจริยธรรมการวิจัย ประชุมเมื่อวันที่ ๒๐ กุมภาพันธ์ ๒๕๖๒ ณ ห้องประชุมนายแพทย์สุจินต์ ผลากรกุล ชั้น ๔ (เล็ก) พิจารณาแล้วเห็นชอบควรสนับสนุนให้ดำเนินการวิจัยตามขอบเขตที่กำหนดได้

จึงเรียนมาเพื่อโปรดทราบ

(นางสาวอุษา ศิริบุญฤทธิ์)
นายแพทย์เชี่ยวชาญ
ประธานคณะกรรมการวิจัยและจริยธรรมการวิจัย โรงพยาบาลชลบุรี

(นางสาววาสนา หงษ์กัน)
นายแพทย์เชี่ยวชาญ
หัวหน้ากลุ่มงานส่งเสริมวิจัยเพื่อพัฒนาระบบบริการ

APPENDIX E

Participant’s information sheet and consent form

ประกาศเชิญชวน

มารดาวัยรุ่น

เข้าร่วมเป็นอาสาสมัครโครงการวิจัยทางคลินิก เรื่อง

ผลของโปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาลต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น: การวิจัยเชิงทดลองแบบสุ่มชนิดมีกลุ่มควบคุม **

คุณสมบัติผู้เข้าร่วมโครงการวิจัย

- มีอายุระหว่าง 10-19 ปี
- เป็นมารดาที่คลอดเป็นครั้งแรก
- เป็นมารดาหลังคลอดปกติภายใน 24 ชั่วโมงแรกหลังคลอด
- มีผู้สนับสนุนหลักและครอบครัว เช่น สามี มารดา บิดา ย่ายาย พี่น้อง หรือเพื่อนเป็นผู้ให้การดูแลและสนับสนุนช่วยเหลือท่านในระยะหลังคลอด
- สามารถติดต่อสื่อสารภาษาไทยได้

หากท่านต้องการทราบข้อมูลเพิ่มเติม หรือสนใจเข้าร่วมโครงการวิจัย

กรุณาติดต่อผู้ช่วยวิจัย:
คุณนุชรีย์ แสงสว่าง คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา
ได้ที่หมายเลขโทรศัพท์ 097-031-7979

หมายเหตุ:
1. การเข้าร่วมโครงการวิจัยนี้ท่านไม่ต้องเสียค่าใช้จ่ายใดๆทั้งสิ้น
2. ท่านจะได้รับการคัดกรองภาวะซึมเศร้าหลังคลอดก่อนเข้าร่วมโครงการวิจัย

**ผู้วิจัย: นางสาว บุศรา แสงสว่าง คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา
**อาจารย์ที่ปรึกษาหลัก: รศ. ดร. วรรณี เดียวอิศเรศ คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

วจ 16 (ใหม่)

โรงพยาบาลชลบุรี CHONBURI HOSPITAL	ศูนย์ส่งเสริมการวิจัย โรงพยาบาลชลบุรี Chonburi Hospital Research Center

เอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย (สำหรับกลุ่มควบคุม)
(Research Subject Information sheet)

1. ชื่อโครงการวิจัย ผลของโปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาลต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น : การวิจัยเชิงทดลองแบบสุ่มชนิดมีกลุ่มควบคุม

วันที่ชี้แจง

ชื่อและสถานที่ทำงานของผู้วิจัย นางสาว บุศรา แสงสว่าง นิสิตปริญญาเอก คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

ผู้ให้ทุนวิจัย

ท่านได้รับการเชิญชวนให้เข้าร่วมในโครงการวิจัยนี้ แต่ก่อนที่ท่านจะตกลงใจเข้าร่วมหรือไม่ โปรดอ่านข้อความในเอกสารนี้ทั้งหมด เพื่อให้ทราบว่า เหตุใดท่านจึงได้รับเชิญให้เข้าร่วมในโครงการวิจัยนี้ โครงการวิจัยนี้ทำเพื่ออะไร หากท่านเข้าร่วมโครงการวิจัยนี้ท่านจะต้องทำอะไรบ้าง รวมทั้งข้อดีและข้อเสียที่อาจจะเกิดขึ้นในระหว่างการวิจัย

ในเอกสารนี้ อาจมีข้อความที่ท่านอ่านแล้วยังไม่เข้าใจ โปรดสอบถามผู้วิจัยหรือผู้ช่วยผู้วิจัยที่ทำโครงการนี้เพื่อให้อธิบายจนกว่าท่านจะเข้าใจ ท่านจะได้รับเอกสารนี้ 1 ชุด กลับไปอ่านที่บ้านเพื่อปรึกษาหารือกับญาติพี่น้อง เพื่อนหรือแพทย์ที่ท่านรู้จัก ให้ช่วยตัดสินใจว่าควรจะเข้าร่วมโครงการวิจัยนี้หรือไม่ การเข้าร่วมในโครงการวิจัยครั้งนี้จะต้องเป็น**ความสมัครใจ**ของท่าน ไม่มีการบังคับหรือชักจูง **ถึงแม้ท่านจะไม่เข้าร่วมในโครงการวิจัย ท่านก็จะได้รับการรักษาพยาบาลตามปกติ การไม่เข้าร่วมหรือถอนตัวจากโครงการวิจัยนี้ จะไม่มีผลกระทบต่อการได้รับบริการการรักษาพยาบาลหรือผลประโยชน์ที่พึงจะได้รับของท่านแต่อย่างใด**

โปรดอย่าลงลายมือชื่อของท่านในเอกสารนี้จนกว่าท่านจะแน่ใจว่ามีความประสงค์จะเข้าร่วมในโครงการวิจัยนี้ คำว่า "ท่าน" ในเอกสารนี้ หมายถึงผู้เข้าร่วมโครงการวิจัยในฐานะเป็นอาสาสมัครในโครงการวิจัยนี้ หากท่านเป็น**ผู้แทนโดยชอบธรรม**ของผู้ที่จะเข้าร่วมในโครงการวิจัย และลงนามแทนในเอกสารนี้ โปรดเข้าใจว่า "ท่าน" ในเอกสารนี้หมายถึงผู้เข้าร่วมในโครงการวิจัยเท่านั้น

วัตถุประสงค์ของโครงการวิจัยนี้คืออะไร

1. เพื่อเปรียบเทียบคะแนนของภาวะซึมเศร้าในกลุ่มทดลองที่ได้รับโปรแกรมการสนับสนุนทางสังคมที่ระยะหลังการทดลอง (4 สัปดาห์หลังคลอด) และในระยะติดตามผล (6 สัปดาห์หลังคลอด และ 3 เดือนหลังคลอด)
2. เพื่อเปรียบเทียบคะแนนของภาวะซึมเศร้าระหว่างกลุ่มทดลองที่ได้รับโปรแกรมการสนับสนุนทางสังคมกับกลุ่มควบคุมที่ได้รับการพยาบาลตามปกติที่ระยะหลังการทดลอง (4 สัปดาห์หลังคลอด) และในระยะติดตามผล (6 สัปดาห์หลังคลอด และ 3 เดือนหลังคลอด)

การรักษาที่จะให้และโอกาสที่อาสาสมัครจะได้รับการสุ่มเข้ากลุ่มศึกษา (ถ้ามี)

ท่านได้รับเชิญให้เข้าร่วมการวิจัยนี้ เนื่องจากท่านเป็นมารดาวัยรุ่นที่มีอายุระหว่าง 10-19 ปี และมีคุณสมบัติครบถ้วนตามที่กำหนด เมื่อถ้าท่านตัดสินใจเข้าร่วมในการวิจัยครั้งนี้และเซ็นชื่อเป็นหลักฐานลงในแบบยินยอมอาสาสมัครแล้ว หลังจากนั้นท่านจะถูกสุ่มเข้าโปรแกรมการสนับสนุนทางสังคมหรือได้รับการพยาบาลตามปกติโดยวิธีการจับฉลาก

ขั้นตอนวิธีการดำเนินการวิจัยที่จะปฏิบัติต่อท่านเป็นอย่างไร

การวิจัยครั้งนี้จะใช้เวลาทั้งสิ้น 12 สัปดาห์ เมื่อท่านเข้าร่วมการวิจัยแล้ว จะมีรายละเอียดของการกิจกรรม ดังนี้

<u>เมื่อท่านได้รับการสุ่มเข้าอยู่ในกลุ่มควบคุม</u> ท่านจะได้รับการพยาบาลตามปกติจากพยาบาลประจำแผนกหลังคลอดร่วมกับได้รับกิจกรรมจากผู้ช่วยวิจัย ดังนี้

1. ภายใน 12-24 ชั่วโมงหลังคลอด ณ แผนกหลังคลอด ผู้ช่วยวิจัยจะเข้าพบท่าน เพื่อให้ท่านตอบแบบสอบถามข้อมูลส่วนบุคคล จำนวน 17 ข้อ และแบบประเมินภาวะซึมเศร้าหลังคลอด จำนวน 10 ข้อ รวมทั้งหมด 27 ข้อ ใช้เวลาประมาณ 5-10 นาที
2. หลังจากนั้นผู้ช่วยวิจัยจะแจกแบบประเมินภาวะซึมเศร้าหลังคลอดให้แก่ท่าน จำนวน 3 ฉบับ เพื่อให้ท่านตอบข้อคำถามเพื่อประเมินภาวะซึมเศร้าหลังคลอดตามช่วงเวลาที่กำหนดทั้งหมด 3 ครั้ง
3. ตลอดระยะเวลาในการเข้าร่วมวิจัยครั้งนี้ ผู้ช่วยวิจัยจะนัดติดต่อกับท่านทางโทรศัพท์ทั้งหมด 3 ครั้ง ดังนี้
   - ในการนัดติดต่อทางโทรศัพท์ครั้งที่ 1 ผู้ช่วยวิจัยจะโทรศัพท์หาท่านในสัปดาห์ที่ 4 หลังคลอด เพื่อให้ท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอด โดยใช้เวลาประมาณ 5 นาที
   - ในการนัดติดต่อทางโทรศัพท์ครั้งที่ 2 ผู้ช่วยวิจัยจะโทรศัพท์หาท่านในสัปดาห์ที่ 6 หลังคลอด เพื่อให้ท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอด โดยใช้เวลาประมาณ 5 นาที
   - ในการนัดติดต่อทางโทรศัพท์ครั้งที่ 3 ผู้ช่วยวิจัยจะโทรศัพท์หาท่านในเดือนที่ 3 หลังคลอด เพื่อให้ท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอด โดยใช้เวลาประมาณ 5 นาที
4. หลังจากท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอดในแต่ละครั้งเสร็จแล้ว ผู้ช่วยวิจัยจะขอให้ท่านถ่ายภาพของแบบประเมินดังกล่าวแล้วส่งมาให้ผู้ช่วยวิจัยผ่านทาง Line® หากท่านไม่สามารถติดต่อกับผู้ช่วยวิจัยได้ทาง Line® ผู้ช่วยวิจัยจะโทรศัพท์กลับไปหาท่านเพื่อสอบถามคะแนนรวมของแบบประเมินภาวะซึมเศร้าหลังคลอด

จะมีการทำโครงการวิจัยนี้ที่ใด และมีจำนวนผู้เข้าร่วมโครงการวิจัยทั้งสิ้นเท่าไร

ในการวิจัยครั้งนี้จะมีมารดาวัยรุ่นเข้าร่วมการวิจัยทั้งสิ้นจำนวน 21 คน โดยมีช่วงระยะเวลาที่จะทำวิจัยทั้งสิ้นประมาณ 12 สัปดาห์ภายหลังคลอด

ระยะเวลาที่ท่านจะต้องร่วมโครงการวิจัยและจำนวนครั้งที่นัด

- เมื่อท่านได้รับการสุ่มเข้าอยู่ในกลุ่มควบคุม ท่านจะได้รับการเข้าพบจากผู้ช่วยวิจัยทั้งหมด 1 ครั้ง ภายใน 12-24 ชั่วโมงหลังคลอด ณ แผนกหลังคลอด และท่านจะได้รับการติดต่อจากผู้ช่วยวิจัยทางโทรศัพท์ทั้งหมด 3 ครั้ง ในสัปดาห์ที่ 4, สัปดาห์ที่ 6, และเดือนที่ 3 หลังคลอด เพื่อให้ท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอด

หน้าที่/ความรับผิดชอบของท่านต่อการเป็นอาสาสมัคร

ถ้าท่านตัดสินใจเข้าร่วมในการวิจัยแล้ว สิ่งที่ท่านจะต้องปฏิบัติ คือ ลงนามในใบยินยอมการเข้าร่วมการวิจัย ตอบแบบสอบถามข้อมูลส่วนบุคคล แบบประเมินภาวะซึมเศร้าหลังคลอด และปฏิบัติตามรายละเอียดของกิจกรรมตามกลุ่มที่ท่านได้รับการสุ่มเข้าร่วม

ความไม่สุขสบาย หรือความเสี่ยงต่ออันตรายที่อาจจะได้รับจากกรรมวิธีการวิจัยมีอะไรบ้าง และวิธีการป้องกัน/แก้ไขที่ผู้วิจัยเตรียมไว้หากมีเหตุการณ์ดังกล่าวเกิดขึ้น

โครงการวิจัยนี้ไม่ก่อให้เกิดอันตราย หรือความเสียหายใดๆต่อผู้เข้าร่วมโครงการวิจัย เนื่องจากการวิจัยนี้ผู้เข้าร่วมโครงการวิจัยจะได้รับการพยาบาลตามปกติจากพยาบาลประจำแผนกหลังคลอด ร่วมกับได้รับการโทรศัพท์

ติดต่อจากผู้ช่วยวิจัยเพื่อประเมินภาวะซึมเศร้าหลังคลอดอีก 3 ครั้ง อย่างไรก็ตามการโทรศัพท์ติดต่อจากผู้ช่วยวิจัยอาจทำให้ผู้เข้าร่วมโครงการวิจัยเสียเวลาได้ ดังนั้นผู้ช่วยวิจัยจะติดต่อกับผู้เข้าร่วมโครงการวิจัยเพื่อนัดหมายเวลาที่ผู้เข้าร่วมโครงการวิจัยสะดวก จากนั้นจึงจะโทรศัพท์ติดต่อตามช่วงเวลาที่ผู้เข้าร่วมโครงการวิจัยได้นัดหมายไว้

ประโยชน์ที่คาดว่าท่านจะได้รับจากโครงการวิจัย

ประโยชน์ของการวิจัยครั้งนี้อาจจะไม่ได้เป็นประโยชน์กับท่านโดยตรง แต่ท่านจะได้รับความรู้และแนวทางการป้องกันการเกิดภาวะซึมเศร้าหลังคลอด และผลการวิจัยจะได้โปรแกรมการสนับสนุนทางสังคมที่มีประสิทธิภาพต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น นอกจากนี้บุคลากรทีมสุขภาพจะนำผลการวิจัยไปพัฒนาเป็นแนวทางปฏิบัติเพื่อลดและป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น เพื่อให้มีคุณภาพชีวิตที่ดีขึ้นในระยะหลังคลอดต่อไป

หากท่านไม่เข้าร่วมโครงการวิจัยนี้ ท่านมีทางเลือกอื่นอย่างไรบ้าง

ถึงแม้ท่านจะไม่เข้าร่วมในโครงการวิจัย ท่านก็จะได้รับการรักษาพยาบาลตามมาตรฐานการดูแลมารดาหลังคลอดของโรงพยาบาล การไม่เข้าร่วมหรือถอนตัวจากโครงการวิจัยนี้ จะไม่มีผลกระทบต่อการได้รับบริการการรักษาพยาบาลหรือผลประโยชน์ที่พึงจะได้รับของท่านแต่อย่างใด

ค่าใช้จ่ายที่ผู้เข้าร่วมในโครงการวิจัยจะต้องรับผิดชอบ (ถ้ามี)

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ค่าเดินทาง หรืออื่น ๆที่จะได้รับเมื่อเข้าร่วมโครงการวิจัย (ถ้ามี)

ผู้เข้าร่วมโครงการวิจัยจะได้รับของที่ระลึกในการเข้าร่วมการวิจัยครั้งนี้เป็นอุปกรณ์เครื่องใช้สำหรับทารก เช่น สบู่ แชมพู แป้ง หรือผ้าขนหนู เป็นต้น

ค่าชดเชยกรณีเกิดอันตรายที่เกี่ยวข้องกับโครงการวิจัยนี้เป็นอย่างไร

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หากเกิดอันตรายที่เกี่ยวข้องกับโครงการวิจัยนี้ จะติดต่อกับใครและได้รับการปฏิบัติอย่างไร

หากท่านเกิดอาการผิดปกติหรืออันตรายที่เกี่ยวข้องกับโครงการนี้ ท่านสามารถติดต่อกับผู้วิจัยได้ตลอดเวลา หมายเลขโทรศัพท์ 097-031-9797 หรือ รศ. ดร. วรรณี เดียวอิศเรศ อาจารย์ที่ปรึกษาหลัก หมายเลขโทรศัพท์ 038-102-845 ซึ่งท่านจะได้รับการประสานงานในการรักษาตามระบบ หรือความเหมาะสม

เหตุผลที่ท่านอาจถูกถอนจากการเป็นอาสาสมัครของโครงการวิจัยนี้

ท่านจะถูกถอนจากการเป็นอาสาสมัครในโครงการวิจัยนี้ หากในระหว่างการดำเนินการวิจัย ท่านไม่สามารถเข้าร่วมกิจกรรมของโปรแกรมการสนับสนุนทางสังคมได้ครบทุกขั้นตอน ตลอดจนท่านมีความประสงค์จะออกจากการศึกษา

หากท่านมีคำถามที่เกี่ยวข้องกับโครงการวิจัย จะถามใคร ระบุชื่อผู้วิจัยหรือผู้ร่วมวิจัย

หากท่านมีปัญหาหรือข้อสงสัยประการใด สามารถสอบถามได้โดยตรงจากผู้วิจัยในวันทำการรวบรวมข้อมูล หรือสามารถติดต่อสอบถามเกี่ยวกับการวิจัยครั้งนี้ได้ตลอดเวลาที่ นางสาวบุศรา แสงสว่าง หมายเลขโทรศัพท์ 097-031-9797 หรือที่ รศ. ดร. วรรณี เดียวอิศเรศ อาจารย์ที่ปรึกษาหลัก หมายเลขโทรศัพท์ 038-102-845

หากท่านรู้สึกว่าได้รับการปฏิบัติอย่างไม่เป็นธรรมในระหว่างโครงการวิจัยนี้ ท่านอาจแจ้งเรื่องได้ที่

- ประธานคณะกรรมการวิจัยและจริยธรรมการวิจัย โรงพยาบาลชลบุรี โทร. 038-931-047 ถึง 8 หรือ
- ประธานคณะกรรมการพิจารณาจริยธรรมฯ ฝ่ายวิจัย คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา โทร. 038-102823

ข้อมูลส่วนตัวของท่านที่ได้จากโครงการวิจัยครั้งนี้จะถูกนำไปใช้ดังต่อไปนี้

ข้อมูลของท่านจะถูกเก็บไว้เป็นความลับ ไม่เปิดเผยชื่อนามสกุล ผู้วิจัยจะเก็บรักษาข้อมูลของท่านโดยใช้รหัสตัวเลขแทนการระบุชื่อ และสิ่งใดๆ ที่อาจอ้างอิงหรือทราบได้ว่าข้อมูลนี้เป็นของท่าน ข้อมูลของท่านที่เป็นกระดาษแบบสอบถามจะถูกเก็บอย่างมิดชิด และปลอดภัยในตู้เก็บเอกสารและล็อคกุญแจตลอดเวลา สำหรับข้อมูลที่เก็บในคอมพิวเตอร์ของผู้วิจัยจะถูกใส่รหัสผ่าน ข้อมูลที่กล่าวมาทั้งหมดจะมีเพียงผู้วิจัยและอาจารย์ที่ปรึกษาหลักเท่านั้นที่สามารถเข้าถึงข้อมูลได้ ผู้วิจัยจะรายงานผลการวิจัย และเผยแพร่ผลการวิจัยในภาพรวม สุดท้ายหลังจากผลการวิจัยได้รับการตีพิมพ์เผยแพร่ในวารสารเรียบร้อยแล้ว ข้อมูลทั้งหมดจะถูกทำลายหลังจากผู้วิจัยสำเร็จการศึกษา 1 ปี

ท่านจะถอนตัวออกจากโครงการวิจัยหลังจากได้ลงนามเข้าร่วมโครงการวิจัยแล้วได้หรือไม่

การเข้าร่วมการวิจัยของท่านครั้งนี้เป็นไปด้วยความสมัครใจทั้งการตอบรับหรือการปฏิเสธ และการถอนตัวออกจากการวิจัยครั้งนี้ ท่านสามารถถอนตัวได้ตลอดเวลาที่เข้าร่วมการวิจัย โดยไม่ต้องแจ้งเหตุผลให้ผู้วิจัยรับทราบ และจะไม่มีผลเสียใดๆเกิดขึ้น

หากมีข้อมูลใหม่ที่เกี่ยวข้องกับโครงการวิจัย ท่านจะได้รับแจ้งข้อมูลนั้นโดยผู้วิจัยหรือผู้วิจัยร่วมนั้นทันที (ในกรณีที่เป็นการวิจัยเกี่ยวข้องกับการรักษาโดยเฉพาะการใช้ยา)

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หมายเหตุ: 1. ผู้วิจัยควรมอบสำเนาแบบยินยอมอาสาสมัคร พร้อมแบบคำชี้แจงอาสาสมัคร อย่างละ **1** ชุด ให้อาสาสมัครหรือผู้ปกครองด้วย

2. เมื่อการวิจัยทางคลินิก (เพื่อการรักษาหรือไม่ก็ตาม) เกี่ยวข้องกับอาสาสมัครซึ่งต้องขอความยินยอมจากผู้แทนโดยชอบธรรม (เช่น ผู้เยาว์ หรือผู้ป่วยโรคสมองเสื่อมรุนแรง) อาสาสมัครควรได้รับการอธิบายเกี่ยวกับการวิจัยด้วยวิธีที่เหมาะสมที่อาสาสมัครนั้นจะเข้าใจได้ และถ้าทำได้อาสาสมัครควรลงนามและลงวันที่ในแบบยินยอมด้วยตนเอง

วจ 16 (ใหม่)

หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย (Informed Consent)

ชื่อโครงการวิจัย: ผลของโปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาลต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น: การวิจัยเชิงทดลองแบบสุ่มชนิดมีกลุ่มควบคุม

ข้าพเจ้า (นาย, นาง, นางสาว) .....นามสกุล ..... อายุ ..... ปี
อยู่บ้านเลขที่.....หมู่ที่.....ตำบล.....อำเภอ.....จังหวัด.....
เป็นบิดา/มารดา/ผู้ปกครองของ (ด.ญ., ด.ช.).....อายุ.....ปี (ในกรณีที่อาสาสมัครเป็นเด็กอายุน้อยกว่า 18 ปี)
ได้รับฟังคำอธิบายจาก..... (ชื่อผู้ให้ข้อมูล)

- ก่อนที่จะลงนามในใบยินยอมให้ทำการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยถึงวัตถุประสงค์ของการวิจัย วิธีการวิจัย อันตราย หรืออาการที่อาจเกิดขึ้นจากการวิจัย หรือจากยาที่ใช้ รวมทั้งประโยชน์ที่คาดว่าจะเกิดขึ้นจากการวิจัยอย่างละเอียด และมีความเข้าใจดีแล้ว
- ผู้วิจัยรับรองว่าจะตอบคำถามที่ข้าพเจ้าสงสัยด้วยความเต็มใจ และไม่ปิดบังซ่อนเร้น จนข้าพเจ้าพอใจ
- ข้าพเจ้าเข้าร่วมในโครงการวิจัยนี้ด้วยความสมัครใจ โดยปราศจากการบังคับหรือชักจูง
- ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการวิจัยเมื่อใดก็ได้ และการบอกเลิกนี้จะไม่มีผลต่อการรักษาพยาบาลที่ข้าพเจ้าจะพึงได้รับในปัจจุบันและในอนาคต
- ผู้วิจัยรับรองว่าจะเก็บข้อมูลเกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยเฉพาะในรูปของสรุปผลการวิจัยโดยไม่มีการระบุชื่อนามสกุลของข้าพเจ้า การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่าง ๆ ที่เกี่ยวข้อง จะกระทำด้วยเหตุผลทางวิชาการเท่านั้น
- ผู้วิจัยรับรองว่าหากเกิดอันตรายใดๆ จากการวิจัย ข้าพเจ้าจะได้รับการรักษาพยาบาล ตามที่ระบุในเอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย ข้าพเจ้าจะรายงานอาการข้างเคียงขึ้นให้แพทย์หรือเจ้าหน้าที่ที่กำลังปฏิบัติงานอยู่ในขณะนั้นทราบทันที
- ข้าพเจ้าจะได้รับเอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย เก็บไว้ 1 ชุด

ข้าพเจ้าได้อ่านและเข้าใจคำอธิบายข้างต้นแล้ว จึงได้ลงนามยินยอมเป็นอาสาสมัครของโครงการวิจัยดังกล่าว

ลายมือชื่ออาสาสมัคร .....
(.....)
วัน/เดือน/ปี .....
ลายมือชื่อผู้ให้ข้อมูล .....
(.....)
วัน/เดือน/ปี .....
ลายมือชื่อผู้วิจัยหลัก .....
(....นางสาว บุศรา แสงสว่าง.....)
วัน/เดือน/ปี .....

หมายเหตุ: (1) ในกรณีที่อาสาสมัครเป็นเด็กโตแต่อายุไม่ถึง 18 ปี สามารถตัดสินใจเองได้ ให้ลงลายมือชื่อทั้งอาสาสมัคร (เด็ก)และผู้ปกครองด้วย
(2) แพทย์ผู้รักษาต้องไม่เป็นผู้ขอความยินยอมอาสาสมัคร แต่สามารถให้ข้อมูล/คำอธิบายได้
(3) ในกรณีที่อาสาสมัครไม่สามารถอ่านหนังสือ/ลงลายมือชื่อ ได้ ให้ใช้การประทับลายมือแทนดังนี้:

ข้าพเจ้าไม่สามารถอ่านหนังสือได้ แต่ผู้วิจัยได้อ่านข้อความในแบบยินยอมนี้ให้แก่ข้าพเจ้าฟังจนเข้าใจดี ข้าพเจ้าจึงประทับตราลายนิ้วมือขวาของข้าพเจ้าในแบบยินยอมนี้ด้วยความเต็มใจ

ประทับลายนิ้วมือขวา

ลายมือชื่อผู้อธิบาย.....
(.....)
พยาน..... (พยานต้องไม่ใช่แพทย์หรือผู้วิจัย)
(.....)
วันที่.....เดือน.....พ.ศ.....

วจ 16 (ใหม่)

โรงพยาบาลชลบุรี CHONBURI HOSPITAL	ศูนย์ส่งเสริมการวิจัย โรงพยาบาลชลบุรี Chonburi Hospital Research Center

เอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย (สำหรับกลุ่มทดลอง)
(Research Subject Information sheet)

1. ชื่อโครงการวิจัย ผลของโปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาลต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น : การวิจัยเชิงทดลองแบบสุ่มชนิดมีกลุ่มควบคุม

วันที่ชี้แจง

ชื่อและสถานที่ทำงานของผู้วิจัย นางสาว บุศรา แสงสว่าง นิสิตปริญญาเอก คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

ผู้ให้ทุนวิจัย

ท่านได้รับการเชิญชวนให้เข้าร่วมในโครงการวิจัยนี้ แต่ก่อนที่ท่านจะตกลงใจเข้าร่วมหรือไม่ โปรดอ่านข้อความในเอกสารนี้ทั้งหมด เพื่อให้ทราบว่า เหตุใดท่านจึงได้รับเชิญให้เข้าร่วมในโครงการวิจัยนี้ โครงการวิจัยนี้ทำเพื่ออะไร หากท่านเข้าร่วมโครงการวิจัยนี้ท่านจะต้องทำอะไรบ้าง รวมทั้งข้อดีและข้อเสียที่อาจจะเกิดขึ้นในระหว่างการวิจัย

ในเอกสารนี้ อาจมีข้อความที่ท่านอ่านแล้วยังไม่เข้าใจ โปรดสอบถามผู้วิจัยหรือผู้ช่วยผู้วิจัยที่ทำโครงการนี้เพื่อให้อธิบายจนกว่าท่านจะเข้าใจ ท่านจะได้รับเอกสารนี้ 1 ชุด กลับไปอ่านที่บ้านเพื่อปรึกษาหารือกับญาติพี่น้อง เพื่อนหรือแพทย์ที่ท่านรู้จัก ให้ช่วยตัดสินใจว่าควรจะเข้าร่วมโครงการวิจัยนี้หรือไม่ การเข้าร่วมในโครงการวิจัยครั้งนี้จะต้องเป็น**ความสมัครใจ**ของท่าน ไม่มีการบังคับหรือชักจูง **ถึงแม้ท่านจะไม่เข้าร่วมในโครงการวิจัย ท่านก็จะได้รับการรักษาพยาบาลตามปกติ การไม่เข้าร่วมหรือถอนตัวจากโครงการวิจัยนี้ จะไม่มีผลกระทบต่อการได้รับบริการการรักษาพยาบาลหรือผลประโยชน์ที่พึงจะได้รับของท่านแต่อย่างใด**

โปรดอย่าลงลายมือชื่อของท่านในเอกสารนี้จนกว่าท่านจะแน่ใจว่ามีความประสงค์จะเข้าร่วมในโครงการวิจัยนี้ คำว่า "ท่าน" ในเอกสารนี้ หมายถึงผู้เข้าร่วมโครงการวิจัยในฐานะเป็นอาสาสมัครในโครงการวิจัยนี้ หากท่านเป็น**ผู้แทนโดยชอบธรรม**ของผู้ที่จะเข้าร่วมในโครงการวิจัย และลงนามแทนในเอกสารนี้ โปรดเข้าใจว่า "ท่าน" ในเอกสารนี้หมายถึงผู้เข้าร่วมในโครงการวิจัยเท่านั้น

วัตถุประสงค์ของโครงการวิจัยนี้คืออะไร

1. เพื่อเปรียบเทียบคะแนนของภาวะซึมเศร้าในกลุ่มทดลองที่ได้รับโปรแกรมการสนับสนุนทางสังคมที่ระยะหลังการทดลอง (4 สัปดาห์หลังคลอด) และในระยะติดตามผล (6 สัปดาห์หลังคลอด และ 3 เดือนหลังคลอด)
2. เพื่อเปรียบเทียบคะแนนของภาวะซึมเศร้าระหว่างกลุ่มทดลองที่ได้รับโปรแกรมการสนับสนุนทางสังคมกับกลุ่มควบคุมที่ได้รับการพยาบาลตามปกติที่ระยะหลังการทดลอง (4 สัปดาห์หลังคลอด) และในระยะติดตามผล (6 สัปดาห์หลังคลอด และ 3 เดือนหลังคลอด)

การรักษาที่จะให้และโอกาสที่อาสาสมัครจะได้รับการสุ่มเข้ากลุ่มศึกษา (ถ้ามี)

ท่านได้รับเชิญให้เข้าร่วมการวิจัยนี้ เนื่องจากท่านเป็นมารดาวัยรุ่นที่มีอายุระหว่าง 10-19 ปี และมีคุณสมบัติครบถ้วนตามที่กำหนด เมื่อถ้าท่านตัดสินใจเข้าร่วมในการวิจัยครั้งนี้และเซ็นชื่อเป็นหลักฐานลงในแบบยินยอมอาสาสมัครแล้ว หลังจากนั้นท่านจะถูกสุ่มเข้าโปรแกรมการสนับสนุนทางสังคมหรือได้รับการพยาบาลตามปกติโดยวิธีการจับฉลาก

ขั้นตอนวิธีการดำเนินการวิจัยที่จะปฏิบัติต่อท่านเป็นอย่างไร

การวิจัยครั้งนี้จะใช้เวลาทั้งสิ้น 12 สัปดาห์ เมื่อท่านเข้าร่วมการวิจัยแล้ว จะมีรายละเอียดของการกิจกรรม ดังนี้

เมื่อท่านได้รับการสุ่มเข้าอยู่ในกลุ่มทดลอง ท่านจะได้รับการพยาบาลตามปกติจากพยาบาลประจำแผนกหลังคลอดร่วมกับได้รับโปรแกรมการสนับสนุนทางสังคมจากผู้วิจัย โดยมีกิจกรรมดังนี้

1. กิจกรรมครั้งที่ 1 ในวันที่ 1 หลังคลอด ณ แผนกหลังคลอด ผู้ช่วยวิจัยจะเข้าพบท่าน เพื่อให้ท่านตอบแบบสอบถามข้อมูลส่วนบุคคล จำนวน 17 ข้อ และแบบประเมินภาวะซึมเศร้าหลังคลอด จำนวน 10 ข้อ โดยใช้เวลาประมาณ 5-10 นาที ต่อจากนั้นผู้ช่วยวิจัยจะแจกแบบประเมินภาวะซึมเศร้าหลังคลอดให้แก่ท่าน จำนวน 3 ฉบับ เพื่อให้ท่านตอบข้อคำถามเพื่อประเมินภาวะซึมเศร้าหลังคลอดตามช่วงเวลาที่กำหนดทั้งหมด 3 ครั้ง หลังจากนั้นผู้วิจัยจะให้ข้อมูลเกี่ยวกับภาวะซึมเศร้าหลังคลอดและความสำคัญของการสนับสนุนทางสังคมต่อการป้องกันภาวะซึมเศร้าหลังคลอด โดยใช้เวลาประมาณ 60-90 นาที
2. กิจกรรมครั้งที่ 2 ในวันที่ 2 หลังคลอด ณ แผนกหลังคลอด ผู้วิจัยจะเข้าพบท่าน เพื่อฝึกให้ท่านมีทักษะในการแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดที่ตรงกับความต้องการของตนเอง และฝึกผู้สนับสนุนหลักและครอบครัวของท่านให้การสนับสนุนทางสังคมที่ตรงกับความต้องการของท่าน ใช้เวลาประมาณ 60-90 นาที
3. กิจกรรมครั้งที่ 3 หลังจำหน่ายจากโรงพยาบาล เมื่อท่านกลับไปอยู่บ้าน ผู้วิจัยจะส่งเสริมให้ท่านใช้ทักษะในการแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดจากผู้สนับสนุนหลักและครอบครัวของท่าน และส่งเสริมให้ผู้สนับสนุนหลักของท่านให้การสนับสนุนทางสังคมในช่วงหลังคลอดแก่ท่านเมื่อกลับไปอยู่บ้าน
4. กิจกรรมครั้งที่ 4 ในวันที่ 7 หลังคลอด ท่านจะได้รับการเยี่ยมบ้านจากผู้วิจัย เพื่อให้การติดตามและให้คำปรึกษาเกี่ยวกับการให้การสนับสนุนทางสังคม โดยใช้เวลาประมาณ 90-120 นาที
5. กิจกรรมครั้งที่ 5 ในวันที่ 14 หลังคลอด และกิจกรรมครั้งที่ 6 ในวันที่ 21 หลังคลอด ท่านจะได้รับการติดตามเยี่ยมทางโทรศัพท์จากผู้วิจัยเพื่อให้การติดตามและให้คำปรึกษาเกี่ยวกับการให้การสนับสนุนทางสังคม โดยแต่ละครั้งใช้เวลาประมาณ 15-20 นาที
6. นอกจากกิจกรรมครั้งที่ 5 และครั้งที่ 6 แล้ว ตลอดระยะเวลาในการเข้าร่วมวิจัยครั้งนี้ ผู้ช่วยวิจัยจะนัดติดต่อกับท่านทางโทรศัพท์ทั้งหมด 3 ครั้ง ดังนี้
   - ในการนัดติดต่อทางโทรศัพท์ครั้งที่ 1 ผู้ช่วยวิจัยจะโทรศัพท์หาท่านในสัปดาห์ที่ 4 หลังคลอด เพื่อให้ท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอด โดยใช้เวลาประมาณ 5 นาที
   - ในการนัดติดต่อทางโทรศัพท์ครั้งที่ 2 ผู้ช่วยวิจัยจะโทรศัพท์หาท่านในสัปดาห์ที่ 6 หลังคลอด เพื่อให้ท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอด โดยใช้เวลาประมาณ 5 นาที
   - ในการนัดติดต่อทางโทรศัพท์ครั้งที่ 3 ผู้ช่วยวิจัยจะโทรศัพท์หาท่านในเดือนที่ 3 หลังคลอด เพื่อให้ท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอด โดยใช้เวลาประมาณ 5 นาที
7. หลังจากท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอดฉบับภาษาไทยในแต่ละครั้งเสร็จแล้ว ผู้ช่วยวิจัยจะขอให้ท่านถ่ายภาพของแบบประเมินดังกล่าวแล้วส่งมาให้ผู้ช่วยวิจัยผ่านทาง Line® หากท่านไม่สามารถติดต่อกับผู้ช่วยวิจัยทาง Line® ได้ ผู้ช่วยวิจัยจะโทรศัพท์กลับไปหาท่านเพื่อสอบถามคะแนนรวมของแบบประเมินภาวะซึมเศร้าหลังคลอด

จะมีการทำโครงการวิจัยนี้ที่ใด และมีจำนวนผู้เข้าร่วมโครงการวิจัยทั้งสิ้นเท่าไร

ในการวิจัยครั้งนี้จะมีมารดาวัยรุ่นเข้าร่วมการวิจัยทั้งสิ้นจำนวน 21 คน โดยมีช่วงระยะเวลาที่จะทำวิจัยทั้งสิ้นประมาณ 12 สัปดาห์ภายหลังคลอด

ระยะเวลาที่ท่านจะต้องร่วมโครงการวิจัยและจำนวนครั้งที่นัด

- เมื่อท่านได้รับการสุ่มเข้าอยู่ในกลุ่มโปรแกรมการสนับสนุนทางสังคม ท่านจะได้รับการเข้าพบจากผู้วิจัย ทั้งหมด 3 ครั้ง ได้แก่ ครั้งที่ 1 และ 2 ในวันที่ 1 และ 2 หลังคลอด ที่โรงพยาบาล ณ แผนกหลังคลอด , และครั้งที่ 3 เมื่อติดตามเยี่ยมบ้านในวันที่ 7 หลังคลอด ร่วมกับท่านจะได้รับการติดต่อจากผู้วิจัยทางโทรศัพท์ทั้งหมด 2 ครั้ง ในวันที่ 14 และ 21 หลังคลอด เพื่อให้การติดตามและให้คำปรึกษาเกี่ยวกับการให้การสนับสนุนทางสังคม นอกจากนี้ท่านจะได้รับการติดต่อจากผู้ช่วยวิจัยทางโทรศัพท์ทั้งหมด 3 ครั้ง ในสัปดาห์ที่ 4, สัปดาห์ที่ 6, และเดือนที่ 3 หลังคลอด เพื่อให้ท่านตอบแบบประเมินภาวะซึมเศร้าหลังคลอด

หน้าที่/ความรับผิดชอบของท่านต่อการเป็นอาสาสมัคร

ถ้าท่านตัดสินใจเข้าร่วมในการวิจัยแล้ว สิ่งที่ท่านจะต้องปฏิบัติ คือ ลงนามในใบยินยอมการเข้าร่วมการวิจัย ตอบแบบสอบถามข้อมูลส่วนบุคคล แบบประเมินภาวะซึมเศร้าหลังคลอด และปฏิบัติตามรายละเอียดของโปรแกรมการสนับสนุนทางสังคมหรือกิจกรรมตามกลุ่มที่ท่านได้รับการสุ่มเข้าร่วม

ความไม่สุขสบาย หรือความเสี่ยงต่ออันตรายที่อาจจะได้รับจากกรรมวิธีการวิจัยมีอะไรบ้าง และวิธีการป้องกัน/แก้ไขที่ผู้วิจัยเตรียมไว้หากมีเหตุการณ์ดังกล่าวเกิดขึ้น

โครงการวิจัยนี้ไม่ก่อให้เกิดอันตราย หรือความเสียหายใดๆต่อผู้เข้าร่วมโครงการวิจัย เนื่องจากการวิจัยนี้จะให้ผู้เข้าร่วมโครงการวิจัยเข้าร่วมโปรแกรมการสนับสนุนทางสังคมเพื่อป้องกันการเกิดภาวะซึมเศร้าหลังคลอด โปรแกรมการสนับสนุนทางสังคมนี้ปลอดภัย ไม่มีอันตรายหรือความเสียหายใดๆที่จะเกิดขึ้นต่อผู้เข้าร่วมโครงการวิจัย เนื่องจากผู้เข้าร่วมโครงการวิจัยจะได้รับความรู้เกี่ยวกับภาวะซึมเศร้าหลังคลอดและความสำคัญของการสนับสนุนทางสังคมต่อการป้องกันการเกิดภาวะซึมเศร้าหลังคลอด ร่วมกับผู้เข้าร่วมโครงการวิจัยจะได้รับการฝึกทักษะการแสวงหาและขอรับการสนับสนุนทางสังคมในช่วงหลังคลอดจากผู้วิจัย ซึ่งกิจกรรมต่างๆเหล่านี้ไม่มีความเสี่ยงหรืออันตรายต่อผู้เข้าร่วมโครงการวิจัย อย่างไรก็ตามผู้เข้าร่วมโครงการวิจัยจะได้รับการติดตามเยี่ยมบ้าน 1 ครั้ง และโทรศัพท์ติดตามเยี่ยมอีก 2 จากผู้วิจัย ร่วมกับได้รับการโทรศัพท์ติดต่อจากผู้ช่วยวิจัยเพื่อประเมินภาวะซึมเศร้าหลังคลอดอีก 3 ครั้ง ซึ่งอาจทำให้ผู้เข้าร่วมโครงการวิจัยเสียเวลาในการเข้าร่วมได้ ดังนั้นผู้วิจัยจะติดต่อกับผู้เข้าร่วมโครงการวิจัยเพื่อนัดหมายเวลาที่ผู้เข้าร่วมโครงการวิจัยสะดวก จากนั้นจึงจะเข้าเยี่ยมบ้านและโทรศัพท์ติดตามเยี่ยมตามช่วงเวลาที่ผู้เข้าร่วมโครงการวิจัยได้นัดหมายไว้

ประโยชน์ที่คาดว่าท่านจะได้รับจากโครงการวิจัย

ประโยชน์ของการวิจัยครั้งนี้อาจจะไม่ได้เป็นประโยชน์กับท่านโดยตรง แต่ท่านจะได้รับความรู้และแนวทางการป้องกันการเกิดภาวะซึมเศร้าหลังคลอด และผลการวิจัยจะได้โปรแกรมการสนับสนุนทางสังคมที่มีประสิทธิภาพต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น นอกจากนี้บุคลากรทีมสุขภาพจะนำผลการวิจัยไปพัฒนาเป็นแนวทางปฏิบัติเพื่อลดและป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น เพื่อให้มีคุณภาพชีวิตที่ดีขึ้นในระยะหลังคลอดต่อไป

หากท่านไม่เข้าร่วมโครงการวิจัยนี้ ท่านมีทางเลือกอื่นอย่างไรบ้าง

ถึงแม้ท่านจะไม่เข้าร่วมในโครงการวิจัย ท่านก็จะได้รับการรักษาพยาบาลตามมาตรฐานการดูแลมารดาหลังคลอดของโรงพยาบาล การไม่เข้าร่วมหรือถอนตัวจากโครงการวิจัยนี้ จะไม่มีผลกระทบต่อการได้รับบริการการรักษาพยาบาลหรือผลประโยชน์ที่พึงจะได้รับของท่านแต่อย่างใด

ค่าใช้จ่ายที่ผู้เข้าร่วมในโครงการวิจัยจะต้องรับผิดชอบ (ถ้ามี)

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ค่าเดินทาง หรืออื่น ๆที่จะได้รับเมื่อเข้าร่วมโครงการวิจัย (ถ้ามี)

ผู้เข้าร่วมโครงการวิจัยจะได้รับของที่ระลึกในการเข้าร่วมการวิจัยครั้งนี้เป็นอุปกรณ์เครื่องใช้สำหรับทารก เช่น สบู่ แชมพู แป้ง หรือผ้าขนหนู เป็นต้น

ค่าชดเชยกรณีเกิดอันตรายที่เกี่ยวข้องกับโครงการวิจัยนี้เป็นอย่างไร

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หากเกิดอันตรายที่เกี่ยวข้องกับโครงการวิจัยนี้ จะติดต่อกับใครและได้รับการปฏิบัติอย่างไร

หากท่านเกิดอาการผิดปกติหรืออันตรายที่เกี่ยวข้องกับโครงการนี้ ท่านสามารถติดต่อกับผู้วิจัยได้ตลอดเวลา หมายเลขโทรศัพท์ 097-031-9797 หรือ รศ. ดร. วรรณี เดียวอิศเรศ อาจารย์ที่ปรึกษาหลัก หมายเลขโทรศัพท์ 038-102-845 ซึ่งท่านจะได้รับการประสานงานในการรักษาตามระบบ หรือความเหมาะสม

เหตุผลที่ท่านอาจถูกถอนจากการเป็นอาสาสมัครของโครงการวิจัยนี้

ท่านจะถูกถอนจากการเป็นอาสาสมัครในโครงการวิจัยนี้ หากในระหว่างการดำเนินการวิจัย ท่านไม่สามารถเข้าร่วมกิจกรรมของโปรแกรมการสนับสนุนทางสังคมได้ครบทุกขั้นตอน ตลอดจนท่านมีความประสงค์จะออกจากการศึกษา

หากท่านมีคำถามที่เกี่ยวข้องกับโครงการวิจัย จะถามใคร ระบุชื่อผู้วิจัยหรือผู้ร่วมวิจัย

หากท่านมีปัญหาหรือข้อสงสัยประการใด สามารถสอบถามได้โดยตรงจากผู้วิจัยในวันทำการรวบรวมข้อมูล หรือสามารถติดต่อสอบถามเกี่ยวกับการวิจัยครั้งนี้ได้ตลอดเวลาที่ นางสาวบุศรา แสงสว่าง หมายเลขโทรศัพท์ 097-031-9797 หรือที่ รศ. ดร. วรรณี เดียวอิศเรศ อาจารย์ที่ปรึกษาหลัก หมายเลขโทรศัพท์ 038-102-845

หากท่านรู้สึกว่าได้รับการปฏิบัติอย่างไม่เป็นธรรมในระหว่างโครงการวิจัยนี้ ท่านอาจแจ้งเรื่องได้ที่

- ประธานคณะกรรมการวิจัยและจริยธรรมการวิจัย โรงพยาบาลชลบุรี โทร. 038-931-047 ถึง 8 หรือ
- ประธานคณะกรรมการพิจารณาจริยธรรมฯ ฝ่ายวิจัย คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา โทร. 038-102823

ข้อมูลส่วนตัวของท่านที่ได้จากโครงการวิจัยครั้งนี้จะถูกนำไปใช้ดังต่อไปนี้

ข้อมูลของท่านจะถูกเก็บไว้เป็นความลับ ไม่เปิดเผยชื่อนามสกุล ผู้วิจัยจะเก็บรักษาข้อมูลของท่านโดยใช้รหัสตัวเลขแทนการระบุชื่อ และสิ่งใดๆ ที่อาจอ้างอิงหรือทราบได้ว่าข้อมูลนี้เป็นของท่าน ข้อมูลของท่านที่เป็นกระดาษแบบสอบถามจะถูกเก็บอย่างมิดชิด และปลอดภัยในตู้เก็บเอกสารและล็อคกุญแจตลอดเวลา สำหรับข้อมูลที่เก็บในคอมพิวเตอร์ของผู้วิจัยจะถูกใส่รหัสผ่าน ข้อมูลที่กล่าวมาทั้งหมดจะมีเพียงผู้วิจัยและอาจารย์ที่ปรึกษาหลักเท่านั้นที่สามารถเข้าถึงข้อมูลได้ ผู้วิจัยจะรายงานผลการวิจัย และเผยแพร่ผลการวิจัยในภาพรวม สุดท้ายหลังจากผลการวิจัยได้รับการตีพิมพ์เผยแพร่ในวารสารเรียบร้อยแล้ว ข้อมูลทั้งหมดจะถูกทำลายหลังจากผู้วิจัยสำเร็จการศึกษา 1 ปี

ท่านจะถอนตัวออกจากโครงการวิจัยหลังจากได้ลงนามเข้าร่วมโครงการวิจัยแล้วได้หรือไม่

การเข้าร่วมการวิจัยของท่านครั้งนี้เป็นไปด้วยความสมัครใจทั้งการตอบรับหรือการปฏิเสธ และการถอนตัวออกจากการวิจัยครั้งนี้ ท่านสามารถถอนตัวได้ตลอดเวลาที่เข้าร่วมการวิจัย โดยไม่ต้องแจ้งเหตุผลให้ผู้วิจัยรับทราบ และจะไม่มีผลเสียใดๆเกิดขึ้น

หากมีข้อมูลใหม่ที่เกี่ยวข้องกับโครงการวิจัย ท่านจะได้รับแจ้งข้อมูลนั้นโดยผู้วิจัยหรือผู้วิจัยร่วมนั้นทันที (ในกรณีที่เป็นการวิจัยเกี่ยวข้องกับการรักษาโดยเฉพาะการใช้ยา)

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หมายเหตุ: 1. ผู้วิจัยควรมอบสำเนาแบบยินยอมอาสาสมัคร พร้อมแบบคำชี้แจงอาสาสมัคร อย่างละ 1 ชุด ให้อาสาสมัครหรือผู้ปกครองด้วย

2. เมื่อการวิจัยทางคลินิก (เพื่อการรักษาหรือไม่ก็ตาม) เกี่ยวข้องกับอาสาสมัครซึ่งต้องขอความยินยอมจากผู้แทนโดยชอบธรรม (เช่น ผู้เยาว์ หรือผู้ป่วยโรคสมองเสื่อมรุนแรง) อาสาสมัครควรได้รับการอธิบายเกี่ยวกับการวิจัยด้วยวิธีที่เหมาะสมที่อาสาสมัครนั้นจะเข้าใจได้ และถ้าทำได้อาสาสมัครควรลงนามและลงวันที่ในแบบยินยอมด้วยตนเอง

วจ 16 (ใหม่)

หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย (Informed Consent)

ชื่อโครงการวิจัย: ผลของโปรแกรมการสนับสนุนทางสังคมโดยการนำของพยาบาลต่อการป้องกันภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่น: การวิจัยเชิงทดลองแบบสุ่มชนิดมีกลุ่มควบคุม

ข้าพเจ้า (นาย, นาง, นางสาว) .....นามสกุล ..... อายุ ..... ปี
อยู่บ้านเลขที่.....หมู่ที่.....ตำบล.....อำเภอ.....จังหวัด.....
เป็นบิดา/มารดา/ผู้ปกครองของ (ด.ญ., ด.ช.).....อายุ.....ปี (ในกรณีที่อาสาสมัครเป็นเด็กอายุน้อยกว่า 18 ปี)
ได้รับฟังคำอธิบายจาก..... (ชื่อผู้ให้ข้อมูล)

- ก่อนที่จะลงนามในใบยินยอมให้ทำการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยถึงวัตถุประสงค์ของการวิจัย วิธีการวิจัย อันตราย หรืออาการที่อาจเกิดขึ้นจากการวิจัย หรือจากยาที่ใช้ รวมทั้งประโยชน์ที่คาดว่าจะเกิดขึ้นจากการวิจัยอย่างละเอียด และมีความเข้าใจดีแล้ว
- ผู้วิจัยรับรองว่าจะตอบคำถามที่ข้าพเจ้าสงสัยด้วยความเต็มใจ และไม่ปิดบังซ่อนเร้น จนข้าพเจ้าพอใจ
- ข้าพเจ้าเข้าร่วมในโครงการวิจัยนี้ด้วยความสมัครใจ โดยปราศจากการบังคับหรือชักจูง
- ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการวิจัยเมื่อใดก็ได้ และการบอกเลิกนี้จะไม่มีผลต่อการรักษาพยาบาลที่ข้าพเจ้าจะพึงได้รับในปัจจุบันและในอนาคต
- ผู้วิจัยรับรองว่าจะเก็บข้อมูลเกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยเฉพาะในรูปของสรุปผลการวิจัยโดยไม่มีการระบุชื่อนามสกุลของข้าพเจ้า การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่างๆ ที่เกี่ยวข้อง จะกระทำด้วยเหตุผลทางวิชาการเท่านั้น
- ผู้วิจัยรับรองว่าหากเกิดอันตรายใดๆ จากการวิจัย ข้าพเจ้าจะได้รับการรักษาพยาบาล ตามที่ระบุในเอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย ข้าพเจ้าจะรายงานอาการข้างเคียงขึ้นให้แพทย์หรือเจ้าหน้าที่ที่กำลังปฏิบัติงานอยู่ในขณะนั้นทราบทันที
- ข้าพเจ้าจะได้รับเอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย เก็บไว้ 1 ชุด

ข้าพเจ้าได้อ่านและเข้าใจคำอธิบายข้างต้นแล้ว จึงได้ลงนามยินยอมเป็นอาสาสมัครของโครงการวิจัยดังกล่าว

ลายมือชื่ออาสาสมัคร .....
(.....)
วัน/เดือน/ปี .....
ลายมือชื่อผู้ให้ข้อมูล .....
(.....)
วัน/เดือน/ปี .....
ลายมือชื่อผู้วิจัยหลัก .....
(....นางสาว มุตรา แสงสว่าง.....)
วัน/เดือน/ปี .....

หมายเหตุ: (1) ในกรณีที่อาสาสมัครเป็นเด็กโตแต่อายุไม่ถึง 18 ปี สามารถตัดสินใจเองได้ ให้ลงลายมือชื่อทั้งอาสาสมัคร (เด็ก)และผู้ปกครองด้วย
(2) แพทย์ผู้รักษาต้องไม่เป็นผู้ขอความยินยอมอาสาสมัคร แต่สามารถให้ข้อมูล/คำอธิบายได้
(3) ในกรณีที่อาสาสมัครไม่สามารถอ่านหนังสือ/ลงลายมือชื่อ ได้ ให้ใช้การประทับลายมือแทนดังนี้:

ข้าพเจ้าไม่สามารถอ่านหนังสือได้ แต่ผู้วิจัยได้อ่านข้อความในแบบยินยอมนี้ให้แก่ข้าพเจ้าฟังจนเข้าใจดี
ข้าพเจ้าจึงประทับตราลายนิ้วมือขวาของข้าพเจ้าในแบบยินยอมนี้ด้วยความเต็มใจ

ประทับลายนิ้วมือขวา

ลายมือชื่อผู้อธิบาย.....
(.....)
พยาน..... (พยานต้องไม่ใช่แพทย์หรือผู้วิจัย)
(.....)
วันที่.....เดือน.....พ.ศ.....

APPENDIX F

Permission to use the instrument documents

ที่ ศธ 0521.1.0604/ 012

ภาควิชาจิตเวชศาสตร์
คณะแพทยศาสตร์ มหาวิทยาลัยสงขลานครินทร์
อำเภอหาดใหญ่ จังหวัดสงขลา 90110

วันที่ 22 มกราคม 2562

เรื่อง อนุญาตให้ใช้เครื่องมือเพื่อดำเนินการวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.พรชัย จูลเมตต์ คณบดีคณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา

อ้างถึง หนังสือที่ ศธ ๖๒๐๖/๒๔๓๖ ลงวันที่ ๒๘ ธันวาคม ๒๕๖๑

ตามหนังสือที่อ้างถึง คณะพยาบาลศาสตร์ มหาวิทยาลัยบูรพา ได้ขอความอนุเคราะห์ขอใช้ แบบสอบถามภาวะซึมเศร้าหลังคลอด ฉบับภาษาไทย ซึ่งเป็นส่วนหนึ่งของงานวิจัยเรื่อง การประเมินแบบสอบถาม Edinburgh Postnatal Depression Scale (EPDS) ฉบับภาษาไทย เพื่อใช้ในการทำวิจัยเรื่อง THE EFFECTIVENESS OF A NURSE-LED SOCIAL SUPPORT PROGRAM TO PREVENT POSTPARTUM DEPRESSION AMONG ADOLESCENT MOTHERS: A RANDOMIZED CONTROLLED TRIAL ของนางสาวบุศรา แสงสว่าง นั้น

ในการนี้ดิฉันได้พิจารณาแล้ว ยินดีอนุญาตให้ใช้เครื่องมือ เพื่อดำเนินการวิจัยดังกล่าว พร้อมนี้ได้แนบไฟล์เครื่องมือมาด้วยแล้ว และขอขอบพระคุณที่ให้ความสนใจในงานวิจัยดังกล่าวมา ณ ที่นี้ด้วย

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

(รองศาสตราจารย์แพทย์หญิงจารุรินทร์ ปิตานุพงศ์)
หัวหน้าภาควิชาจิตเวชศาสตร์

ภาควิชาจิตเวชศาสตร์
โทรศัพท์ 074-451351-2

BIOGRAPHY

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POSITION HELD

2002 - 2004 Register nurse
Siriraj Hospital, Bangkok, Thailand

2008 - 2010 Nursing instructor
Faculty of Nursing, Mahidol University, Bangkok, Thailand

2010 - 2011 Nursing instructor
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2011 - present Nursing instructor
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EDUCATION

1998 - 2002 Bachelor of Nursing Science
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2004 - 2006 Master of Nursing Science
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