

FACTORS CONTRIBUTING TO SELF-CARE BEHAVIOR OF EARLY POSTPARTUM MOTHERS IN RURAL NAKHON RATCHASIMA, THAILAND

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Received: December 03, 2018; Revised: March 22, 2019; Accepted: March 23, 2019

Abstract

Proper postpartum behavior will promote maternal health and prevent complications. The main objective of this predictive research was to determine the factors contributing to postpartum self-care behavior (PSB) and their correlation to selected variables. Power analysis was used to determine the sample size. Participants were 150 mothers who were administered a seven-part questionnaire to collect data related to their personal demographics, knowledge about PSB (K-PSB, KR-20 coefficient = 0.66), traditional beliefs (TB), social support from families (SSF), social support from health care providers (SSP), maternal-role acceptance (MRA), and PSB with Cronbach's α at 0.87, 0.92, 0.94, 0.94, and 0.85, respectively. Descriptive statistics, Pearson's product moment correlation, and multiple regression analysis were used to analyze the data. The results revealed that the average age of the mothers was 26.7 years ($SD = 6.3$). Around half (53%) had a moderate level of knowledge. The majority of mothers had high levels of traditional beliefs (3.61 ± 0.25), SSF (4.29 ± 0.52), SSP (4.23 ± 0.54), and PSB (3.97 ± 0.40) and very high level (4.63 ± 0.41) in MRA (the numbers represent mean values on a scale of 1-5). There were positive correlations between PSB and SSF, SSP, and MRA, at $p = 0.001$ ($r = 0.47, 0.56$, and 0.64 , respectively). The SSF, SSP, and MRA increased the explained variance in PSB, accounting for 47.3% of total variance in PSB ($R^2 = 0.473, p < 0.001$). Nurses can apply the results to design family-based interventions to improve PSB and conduct additional research to examine its effects.

Keywords: Postpartum, self-care behavior, social support, traditional beliefs

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Introduction

The postpartum period is one of the most important developmental stages, because the anatomy and physiology of multiple systems are in flux and trying to return to their pre-pregnancy conditions. Postpartum hemorrhage, the major cause of maternal death, occurs in this period (Cunningham *et al.*, 2010). Psychological and social status are also changing and adjusting, seeking to find a balanced state. One study in Thailand (Sawangcharoen and Suwankam, as cited in Sumranwong, 2001) determined all postpartum mothers had higher anxiety than non-pregnant women, regardless of whether they were prepared for playing maternal roles. Postpartum mothers encounter developmental changes, which last for around 6 weeks, but most of the adjustments occur within 1-2 weeks after childbirth (Cheng and Li, 2008).

The maternal mortality ratio in Thailand increased from 17.6 deaths per 100,000 live births in 2012 to 22.2 in 2013 (The Bureau of Health Promotion, 2015), although the country's goal is that it should not exceed 15 deaths per 100,000 live births (The Bureau of Health Promotion, 2015). The Non Daeng Hospital in this study, which will be hereafter called ND hospital, is responsible for health services in a rural district in northeast Thailand. Non Daeng Hospital (2015) reported that the most frequently found postpartum complication from 2013 to 2016 was perineal infection (8.1%, 3.85%, 1.59%, and 0%, respectively). The most severe complication was postpartum hemorrhage, which can lead to a hysterectomy operation for the mother. These complications affect the postpartum mothers' life styles and well-being.

Postpartum self-care behavior (PSB) is defined as the activities that a postpartum woman engages in to maintain their physical and psychosocial health. Previous studies (Ketsomporn *et al.*, 2007; Prammanee, 2011) reported that factors affecting PSB are related to the mothers' demographic background, such as age, occupation, educational level, marital status, parity, and family income. Other associated factors include knowledge about

PSB (K-PSB), traditional beliefs (TBs), social support from family (SSF) health care providers (SSP), and maternal-role acceptance (MRA).

Mothers with more knowledge about PSB tended to take better care of themselves (Manotham *et al.*, 2014), were more confident, and had less anxiety (Chonlatankampana *et al.*, 2018). Support from family or significant persons could sooth the mothers and help them feel supported, encouraged, valuable, and motivated to take care of themselves (Hanuchareonkul, 2001). Different levels of SSF result in different PSB (Meetipkit, 2004; Kaewsri, 2006; Manotham *et al.*, 2014). Mothers living in a nuclear family (with their husband/significant other and immediate children) mainly seek support from their husbands/significant others. Therefore, it is important that they live together. Mothers living in an extended family, on the other hand, may have more choices of support from other biological relatives living in the same home. Richardson (1981) found that pregnant women living in a nuclear family felt less social support than those living in an extended family. Besides family members, healthcare providers are also a primary source of quality support and information about self-care that is related to PSB (Manotham *et al.*, 2014; Apay *et al.*, 2015).

TBs are another factor that influences postpartum behavior (Srisupattpong *et al.*, 2007; Manotham *et al.*, 2014). In northeast Thailand, mothers follow traditional practices, such as lying by the fire, taking a hot bath, and drinking hot herbal tea, because they believe that those practices help them to regain physical strength and smooth uterine involution (Elter *et al.*, 2016). Traditional beliefs also include food avoidance and foods that should be consumed to promote breast milk (Tanglakmankhong *et al.*, 2016). The MRA is able to indicate PSB (Srisupattpong *et al.*, 2007). The mothers have to correctly and appropriately learn maternal roles to adjust to them. The success of this process is confirmed when the mothers are able to perform the new

roles and integrate maternal role behaviors with their other roles with happiness and satisfaction (Mercer, 1985).

Many studies about postpartum behavior in Thailand have been conducted in the central part of the country, where society, culture, beliefs, traditions, and life styles are different from the northeast. In addition, they were conducted at 6 weeks postpartum, but most postpartum changes occur within 1-2 weeks after childbirth. This is the most troublesome period because the mothers have to deal with their own and their baby's health issues and try to find practical solutions for them. ND hospital provides follow up at the 8th day postpartum. The mothers often report symptoms of discomfort, such as fatigue, reduced sleep duration, pain, and stress. Reports of these problems were found to be lower at 4-6 weeks postpartum. There has been no study about PSB in this region. This research was conducted to explore factors contributing to PSB and its relationship to selected variables within the 2 week postpartum period.

Conceptual Framework

Self-care theory, purposed by Orem (2001), was used to frame the study. This study focused on basic condition factors that influence self-care agencies which cause therapeutic self-care demand (TSCD) in universal self-care requisites (UCSR) and health deviation self-care requisite (HDSCR). Those are 1) the sufficient intake of air, water, and food, 2) provision of care associated with elimination processes and excrements, 3) balance between activity and rest, 4) balance between solitude and social interaction, 5) prevention of hazards to human life, functioning, and well-being, 6) promotion of human functioning and development within social groups in accord with human potential, and 7) health deviation self-care requisites. The researchers also included K- PSB, TB, SSF, SSP, and MRA into the study's framework, as shown in Figure 1.

Materials and Methods

This predictive study aimed to examine what factors contribute to PSB of postpartum mothers getting healthcare services in a rural district of a province in northeast Thailand. Independent variables included: 1) personal variables, including: age, monthly salary, educational level, occupation, parity, relationship with a husband/significant other, and a family type; 2) K- PSB; 3) TBs; 4) SSF; 5) SSP; and 6) MRA. The dependent variable was PSB.

The study population comprised mothers receiving healthcare from ND hospital in the 2017 fiscal year at 1-2 weeks after childbirth. Participants were purposively sampled with inclusion criteria including being 1) 1-2 weeks postpartum without complications, 2) able to read and write the Thai language, and 3) volunteering to participate in the study. The sample size was determined by power analysis, where effect size = 0.15, alpha error probability = 0.05, power of the test = 0.80, number of predictors = 12, and then calculated by G*Power 3.1. The effect size was calculated from R^2 of the study by Srisuppatpong *et al.* (2007). The original 150 participants were recruited for the study, which included the calculated required sample size of 127 and an additional 20% to account for the expected attrition rate.

The instrument used was The Postpartum Health Behavior Questionnaire (PHBQ), which consists of seven parts. The first part collects demographic information, such as age and family type. The second through the seventh parts were developed by Srisuppatpong *et al.*

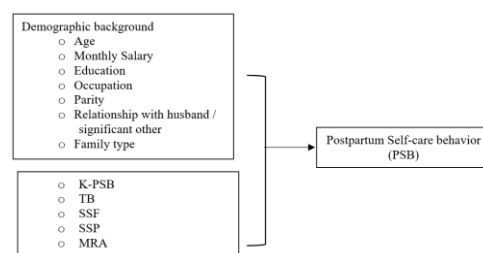


Figure 1. Conceptual Framework

(2007). The second part (26 Y/N questions) was used to test for knowledge about postpartum self-care (Correct = 1, incorrect = 0). Total scores were classified into three levels (<50% = low level, 50-75% = moderate level, >75% = high level). The third to the seventh parts use five-point Likert's Scales (5 = strongly agree, 1 = strongly disagree). The total scores were then classified into five levels (4.50–5.00 = very high, 1.00–1.49 = very low). The third part (15 items) examined traditional beliefs, the fourth part (15 items) explored SSF, the fifth part (14 items) investigated SSP, the sixth part (17 items) aimed to reveal MRA, and the seventh part (34 items) asked about PSB. The original of the last part only had 26 questions; however the researchers added 8 questions about HDSCR.

The PHBQ was tested for validity and reliability. The validity was established by three experts in maternal and newborn nursing and midwifery. It was trialed with 30 mothers who had the same characteristic as the intended participants. The second part (K-PSB) was tested using KR-20 and the ITST coefficient was .66. The third (TBs), fourth (SSP), fifth (SSP), sixth (MRA), and seventh (PSB) were tested for their reliabilities and established alpha Cronbach's coefficients indicating acceptable to excellent internal consistency ($\alpha = 0.78, 0.92, 0.94, 0.94, \text{ and } 0.85$, respectively).

The research project was approved by the Ethical Review Committee of Nakhon Rathchaisima Provincial Public Health Office (KHE 2017-025). The director of ND Hospital also granted permission to collect data. Participants voluntarily participated in this study and informed consent was obtained. The researcher described the objectives, methods, and benefits of this study to the participants.

They were informed that data would be kept in safe cabinets, their identity would not be revealed, the results would be presented as a whole, and all data would be destroyed after the results were published.

Data was collected from May 2017 to April 2018. After the research proposal was approved, the researchers approached postpartum mothers at the postpartum clinic. Information about the study was explained to potential participants and informed consent was obtained from the volunteers. The questionnaires were administered in person and checked for completion. Then, the researchers informed them that the data collection was finished and thanked them for their participation. No gifts or stipends were given.

Demographic data, PSB, K- PSB, TB, SSF, and SSP were analyzed using descriptive statistics. Person's correlation was used to examine any associations among age, monthly salary, K-PSB, TB, SSF, SSP, MRA, and PSB. To predict PSB, stepwise multiple regression analysis was used to analyze PSB, K- PSB, TB, SSF, SSP, and MRA.

Results and Discussion

Demographic Data

All mothers returned the questionnaire. Their demographic data is shown in Table 1. The majority (57%) were aged 20-30 years old (mean age 26.7 ± 6.3) and had a secondary school education (72%). Around half were house wives (51%), earned 2,000–10,000 Baht per month (49%), and perceived that their income was sufficient (53%). The average income was 14,612.00 Baht per month ($SD = 9907.04$). Over half were multiparous (61%)

Table 1. Frequency, percentages, and level of knowledge about psb of early postpartum mothers (N = 150)

Score	Frequency	Percentage	Level
<13 (<50%)	3	2.0	Low
13-20 (50-75%)	80	53.3	Moderate
21-26 (>75%)	67	44.7	High
Total	150	100	

and living with their husband/significant other (65%) in an extended family (76%).

Descriptive Analysis of K- PSB, TB, PSB, SSF, SSP, MRA, and PSB

Almost half (45%) had a high level of knowledge about postpartum care, 53% a moderate level, and 2% a low level, as shown in Table 2. Scores on this knowledge were between 11-25, with an average of 20. On

average, the mothers had high levels of traditional beliefs (3.61 ± 0.25), SSF (4.29 ± 0.52), SSP (4.23 ± 0.54), MRA (4.63 ± 0.41), and PSB (3.97 ± 0.40), as shown in Table 3.

Correlations Among Age, Salary, Parity, K-PSB, TB, SSF, SSP, MRA, and PSB

The SSF, SSP, and MRA were positively and moderately correlated with PSB with statistical significance ($r = 0.47$, $P < 0.029$, $r =$

Table 2. Frequency and percentage of demographic data of early postpartum mothers (N = 150)

Demographic Data	Frequency	Percent
Age (Year)		
<20	27	18.0
20-30	85	56.7
>30	38	25.3
Education		
Primary	17	11.3
Secondary	108	72.0
Diploma	15	10.0
Bachelor	10	6.7
Occupation		
Housewife	77	51.3
Merchant	9	6.0
Employee	50	33.3
Farmer	7	4.7
Government official/State Enterprise employee	7	4.7
Family Monthly Salary (Baht)		
<10,000	73	48.7
10,000-20,000	54	36.0
>20,000	23	15.3
Adequacy of Income		
Middling	80	53.3
Middling with saving	51	34.0
Indigent	19	12.7
Relationship with a husband / significant other		
Stay together regularly	98	65.3
Stay together often	41	27.3
Not stay together	11	7.3
Parity		
First Parity	58	38.7
Second Parity or above	92	61.3
Family Type		
Nuclear Family	36	24.0
Extended Family	114	76.0

Table 3. Means, standard deviations, and levels of TB, SSF, SSP, MRA, and PSB scores (from 1 to 5) of the mothers (N = 150)

Variables	Mean	SD	Levels
TB	3.61	0.25	High
SSF	4.29	0.52	High
SSP	4.23	0.54	High
MRA	4.63	0.41	Very High
PSB	3.97	0.40	High

0.6, $P < 0.001$, and $r = 0.64$, $P < 0.001$), as shown in Table 4. The other factors evaluated were not correlated to PSB.

Multiple Regression of Selected Variables

MRA, SSP, and SSF were able to predict the PSB of the mothers. MRA was the first added to the equation and was able to predict 40.4% of PSB. When SSP was added as a second factor, it increased PSB prediction by 5.2%. MRA and SSP together were able to predict 45% of PSB. SSF was added as a third determinant and increased PSB prediction by an additional 1.7%. Combined, SSF, SSP, and MRA explained 47.3% of the total variance in PSB, as shown in Table 5. The raw score equation was $PSB = 27.307 + 0.84(MRA) + 0.40(SSP) + 0.277(SSF)$. The standard score equation was $Z_{PSB} = 0.43(Z_{MRA}) + 0.225(Z_{SSP}) + 0.158(Z_{SSF})$.

These postpartum mothers had high SSF because most lived in an extended family and have close relationships with family members who are able to ease the processes of behavioral changes in the mothers (Srisuppatpong *et al.*, 2007; Manotham *et al.*, 2014). Most of the mothers also reported that

they had high levels of PSB. This may be because they had gained knowledge from maternal classes provided by healthcare professionals considered experts in postpartum care (Orem, 2001; Srisuppatpong *et al.*, 2007; Manotham *et al.*, 2014). The mothers had a very high level of MRA, even though postpartum adjustments may affect adapting to this role. Social supports are the main factors contributing to this success.

The results indicated that, overall, the PSB of the mothers in the district was at a high level at 1-2 weeks postpartum. This may result from their educational level and family types. Graduating secondary school may help build up their knowledge, skills, and attitudes about self-care. Education also promotes learning ability, health literacy, and utilizing knowledge in different situations. Persons with a higher education are more likely to seek information and criticize it before making decisions, than persons with a lower level of education. They also tend to correctly apply the knowledge they acquire (Perry, 2012). Srisuppatpong *et al.* (2007) revealed that postpartum mothers with different educational backgrounds had different postpartum self-

Table 4. Correlations between the eight variables and postpartum self-care behavior (PSB)

Variables	1	2	3	4	5	6	7	8	9
1.Age	—								
2.Salary	0.25**	—							
3.Parity	0.60**	-0.06	—						
4.K-PSB	0.10	0.17*	0.02	—					
5.TBs	0.111	0.23**	0.10	0.34***	—				
6.SSF	-0.08	0.24**	-0.09	0.16*	0.31***	—			
7.SSP	0.56	0.07	0.08	0.11	0.28***	0.51***	—		
8.MRA	-0.006	0.21**	-0.06	0.20**	0.24**	0.47***	0.56***	—	
9.PSB	-0.03	0.12	-0.04	0.06	0.13	0.47***	0.56***	0.64***	—

Note: The numbers represent Pearson's R correlation coefficients. * indicates statistical significance at $p < 0.05$, ** indicates $p < 0.01$, and *** indicates $p < 0.001$.

Table 5. Summary of stepwise multiple regression statistics for the predictive variables

Predictive Variables	R	R ²	Adj R ²	R ² change	b	Beta	t
MRA	0.64	0.40	0.40	0.40	0.84	0.43	5.62***
SSP	0.68	0.46	0.45	0.05	0.40	0.23	2.87**
SSF	0.69	0.47	0.46	0.02	0.28	0.16	2.20**
Constant = 27.307			S.E. _{est} = 9.68			F _{3, 146} = 43.677	

Note: ** indicates statistical significance at $p < 0.01$, while *** indicates $p < 0.001$

care behaviors, while Meetipkit (2004) had found differences in family types affected this. The researcher determined that first time postpartum mothers from a nuclear family, composed of a husband/significant other, wife, and their immediate children, had better self-care behavior and were more independent and self-reliant than those who lived in an extended family - the nuclear family and other biologically related persons. However, the former may lack social support systems.

Age, family income, occupation, parity, and marital status have no correlation with PSB. The majority of the mothers were adults between the ages of 26-30 years old. They were considered to be persons using self-care agencies that are aware of their potential to initiate activities or act by themselves (Hanuchareonkul, 2001; Orem, 2001). They were living in an extended family with their parents, husbands/significant others, and other relatives, so they have the opportunity to get recommendations or suggestions from family members. Family and self-care agency influenced promoting PSB of the mothers; therefore, it is not dependent on age. Mothers in different age groups had the same PSB.

Family income is a resource that influences responses to basic conditioning factors (BCFs) and raises the quality of life. Promoting self-care behavior is can be done without spending money. Instead, family members may provide support by helping with doing exercises, household chores, and baby care, allowing the mothers to rest and gradually adjust to their new roles. Health education provided by healthcare providers was delivered to the mothers and family free of charge. Therefore, the family's income level may not make a difference in PSB.

This study found that the status of mothers having moderate knowledge about postpartum self-care was unable to explain variances of PSB. This can be explained to be due to the fact that the mothers gain knowledge about postpartum care and baby care from maternal classes or individuals. This includes daily routines, such as rest and relaxation, work, food consumption, body cleaning, sexual activity, family planning, critical signs,

and follow-up checkups. The mother may not get the full content because of being distracted by muscle aches, general discomforts, after pains, pains from perineal wounds or caesarean incision, and fatigue from the labor process (Sawatdipanich, 2014). Flowing lochia, after pains, breast engorgements, excessive sweating, frequent urination, constipation, and the sudden decrease in estrogen and progesterone in the first 72 h postpartum may affect maternal mental health (Kongsuriyanavin *et al.*, 2010). In addition, the mothers may be worried about baby care, which may narrow their perception, as seen in the study by Tongkon *et al.* (2013). They found that the level of knowledge about self-care and baby care among teenage postpartum mothers in obstetric wards was at a moderate level. However, postpartum maternal classes provided by healthcare teams were still necessary to deliver knowledge to the mothers, so that they would be able to take care of themselves correctly.

This study also determined that the mothers' level of adherence to traditional beliefs does not relate to, or explain, variances of PSB. This may relate to social changes, in which more mothers move to live in urban area or their area has become urbanized, although the mean level of TBs was still high. Also, many mothers live in a nuclear family, where there are fewer family members to transfer local wisdom, social values, and traditional beliefs to the women. This result correlates to the study of Chianek (2001), who determined that social support for traditional postpartum self-care had no association with traditional postpartum self-care of postpartum mothers.

This study found the mothers had a high level of SSF. This may be because the mothers lived with her husband/significant others and/or within an extended family, where every member is important, takes part in providing healthcare and bears responsibilities for fulfilling the mothers' universal self-care requisites (USCR), as stated by Orem (2001). Family members will express their concerns, take care of, and help with many issues, such as finance and household chores, as well as being consultants from pregnancy through the

postpartum period. They will support the mothers to achieve self-care ability to enable them to take care of themselves correctly. This is this aligns with the studies of Kaewsri (2006) and Manotham *et al.* (2014) that indicated SSF, such as a husbands/significant others, family members, and relatives, was positively related to postpartum health care behavior. Pairut (2001) and Phimnuwog (2007) also confirmed that social support is able to predict postpartum self-care.

The participants also had a high level of SSP. Thus, healthcare providers are very important for supporting, making recommendations and suggestions, helping, and teaching the mothers (Manotham *et al.* 2014). They are experts in guiding the mothers in how to practice proper care (Orem, 2001). This was seen in a study by Rattanapathumwan (2001), who stated that healthcare providers promoting the potential of self-care resulted in better postpartum self-care behavior in the experimental group than in the control group. Kaewsri (2006) learned that obtaining suggestions from healthcare providers associated with postpartum mothers was also important. The study by Manotham *et al.* (2014) found social support from healthcare providers was positively related to PSB of the mother. The study of Srisupattpong *et al.* (2007) found that SSP was able to predict PSB, as well.

MRA of the mothers was at a high level, which reflects their acceptance of their new roles, although childbirth may have changed many of the mothers' other roles. These changes may influence the mother's adjustment. For example, the mothers might need to seek new knowledge and pay more attention to baby care and responding to the baby's needs, such as breastfeeding and bathing. The study by Srisupattpong, *et al.* (2007) also determined that maternal role acceptance was able to predict PSB.

Conclusions

Since the associations between PSB and SSF, SSP, and MRA, explained 47.3% of variance ($F = 43.677$, $p = 0.001$), these results should be

used to guide nursing care plans and discharge plans for postpartum mothers. For example, family members should take part in providing healthcare for postpartum mothers and they should be trained to deliver appropriate care. Midwives should promote maternal-role acceptance during the pregnancy and through delivery. An interprofessional healthcare team should support postpartum mothers, enhance social support within their families, and enhance the acceptance of maternal roles. Nurses can apply the results to designing family-based interventions to improve postpartum self-care behavior and to conduct research to examine the interventions' effects.

Acknowledgements

The authors gratefully acknowledge Songpol Kateaubhorm, MD, the director of ND hospital for his support with data collection.

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