Factors Explaining Postpartum Depression among Thai Adolescent Mothers

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Abstract: Adolescent mothers are at risk of postpartum depression because they are presented with stressful situations due to role transition. Understanding factors explaining the stress outcomes is necessary to design effective interventions to help this group of adolescent mothers. This predictive correlational study examined whether socio-economic status, intended pregnancy, marital satisfaction, parenting stress, self-esteem, and received postpartum social support could explain postpartum depression among Thai adolescent mothers. The Stress Process Model was used as the framework for the study. Convenience sampling was used to recruit 220 adolescent mothers who attended antenatal care clinics and family planning clinics at ten hospitals in northern Thailand. Data were collected using six self-report instruments which included a Personal Information Questionnaire, the Kansas Marital Satisfaction Scale, the Parenting Stress Index-Short Form, the Rosenberg Self-esteem Scale, the postpartum Support Questionnaire, and the Edinburgh Postnatal Depression Scale. Data were analyzed using descriptive statistics and hierarchical multiple regression.

Results revealed that all factors could explain only 25% of the total variance in postpartum depression among the participants. The strongest, significant factors were marital status, followed by parenting stress and self-esteem, however, socio-economic status, intentional pregnancy, and received postpartum social support did not significantly explain postpartum depression, so clearly other factors are at work. The usefulness of model outcomes in this study are therefore limited, and further development is needed including investigation of the role of other stressors, physical causes, and postpartum symptoms. However, we emphasized that the implications for nursing practice are supported, that is to help strengthen and support the relationships of adolescent couples, promote father's in helping to take care of children, and utilize a range of strategies to support young mothers to help reduce the potential for postpartum depression.

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Introduction

Adolescent motherhood is considered a life-event stressor, requiring major readjustment over a short

time.[1] Adolescent mothers are faced with changing roles, going from being daughters to mothers, with an increased risk of numerous stress-related conditions such as postpartum depression (PPD).[1] Most adolescent mothers are less prepared for parenthood and have a limited knowledge of parenting skills as compared to more mature mothers, which contributes to adaptation difficulties and exacerbates anxiety and depression after birth.[2] PPD is essentially a stress-manifesting outcome, which results from a failure to cope with stressors.[3] A commonly accepted definition of PPD from American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), signs or symptoms of depressed mood, lack of interest in pleasurable activities, appetite changes, sleep disruptions, fatigue, feelings of worthlessness, problems with decision-making, restlessness, and suicidal ideation.[4] The onset of these symptoms begins within four weeks of birth and extends up to six months.[4] According to several studies, PPD is more common in adolescent mothers than in their adult counterparts.[5] Adolescent mothers are more likely to be at risk of PPD due to the context of menstruation onset, hormonal fluctuations, and higher emotional sensitivity.[6] The physical causes include the drop in hormone levels after birth (estrogen/progesterone and thyroid hormones) and a family history of PPD and other forms of depression.[7] PPD may exert negative impacts on the mother and her child. Previous research indicates that more women with PPD attempt suicide during the first year of motherhood.[8] In addition, they might have a weakened immune system, frequent infections, and encounter chronic illness sooner than their more mature counterparts.[9] Maternal depression also makes children more susceptible to developmental delays and psychiatric disorders.[7] Although several explaining factors of PPD have been identified for mothers (of all ages) in general, there has been limited exploration of particular stressors related to PPD in adolescent mothers. This study investigated factors explaining PPD based on the stress process model (SPM)[10] in Thai adolescent mothers, from the antenatal to postnatal period.

Conceptual Framework and Review of Literature

The framework of PPD among adolescent mothers was based on the Stress Process Model (SPM) developed by Pearlin and colleagues.[10] This model is broad in scope and potentially applicable to explain the stressors that affect PPD. The stressors are assumed to be the cause of PPD as the mother fails to cope with these and this disrupts the body's balance, resulting in abnormal neurotransmitter brain function. The SPM has five domains: 1) background and context of stress such as education, occupation, personal income, and family income; 2) primary stressors including intended pregnancy, and marital satisfaction; 3) secondary stressors such as parenting stress and self-esteem; 4) mediating conditions buffering stress include received postpartum social support; and 5) its outcome of postpartum depression.[10] Background and context of stress is a stressor expected to be threaded throughout the stress process that individuals bring to their experience of living with chronic stressors.[3] The foremost stressor explaining PPD is socio-economic status (SES). Poverty is a threatening condition that affects individual stress,[11] and women with low SES have an increased risk of PPD.[11] The primary stressors in the SPM are experiences and activities that an individual endures which increase over time and eventually lead to secondary stressors.[12] The predictors of PPD in terms of primary stressors are intended pregnancy and marital satisfaction. Intended pregnancy refers to a woman's perception of a wanted pregnancy at the right time while an unintended pregnancy is one that is either unwanted or mistimed.[13] The latter may precipitate a personal crisis and/or conflict within the family.[13] Marital satisfaction is the perception of happiness of the marriage/significant relationship

with the mother's long-term partner.[14] In previous studies, marital satisfaction was a significant predictor factor of PPD.[15]

The secondary stressors in SPM include the maternal role and intrapsychic strains, which are threats that interrupt achievement.[10] The predictors of PPD in terms of secondary stressors are parenting stress and self-esteem issues. Parenting stress is the perception of conflict between maternal roles and resources available for dealing with newborn care available to adolescent mothers.[16] Previous studies report that adolescent mothers who perceive high levels of parenting stress had a significantly increased risk of PPD.[17] Self-esteem is a concept used in psychology to describe a person's overall evaluation or appraisal of self-worth.[18] Women who perceive themselves as having low self-worth are more prone to a temporary depletion of self-esteem and at greater risk of depression.[19] The most pertinent mediating condition to reduce stress in the PPD context is received postpartum social support. The effectiveness of received social support must be appropriate according to the specific needs and particular problems of the individual.[20] Pearlin et al.[12] stated that "the mediating conditions pathway can affect health outcomes both directly and indirectly" (p.589). However, mediating conditions also need to be assessed in terms of their direct effects on health outcomes.[12] The receiving effective social support as a mediating condition to buffer stress is assumed to protect mothers from the harmful impact of specific stressors leading to PPD and allowing for better emotional responses to negative events.[21] A previous systematic review reported that social support from family exerted a direct effect on PPD.[5]

Although several studies have reported factors influencing PPD in adolescent mothers, few studies have examined stress factors to explain the phenomenon of PPD among adolescents, such as when they experience a great deal of stress from normative academic and social demands. Furthermore, the added stress of becoming a wife and a parent at such a young age may put them at higher risk than their non-parenting counterparts for developing PPD symptoms. Thus, this study sought to understand the factors explaining PPD based on the SPM in adolescent mothers from antenatal to postnatal periods.

Study Aim: To investigate the explaining power of socio-economic status (education, occupation, personal income, and family income), intended pregnancy, marital satisfaction, parenting stress, self-esteem, and received postpartum social support on PPD among Thai adolescent mothers.

Methods

Design: This study used a predictive correlational design.

Settings and Sample: The criteria for the selection of study settings were based on the following criteria: hospitals that had a recorded high number of pregnant adolescents in 2016, the year before data collection began; being an obstetrics and gynecology center; and the ethics committee of the hospital allowing data collection on the pregnant adolescents. From 13 hospitals, ten hospitals situated in 5 provinces in northern Thailand permitted the data collection. These were one super tertiary (>500 beds), two tertiary (>500 beds), three secondary (120 – 500 beds), and four primary hospitals (30-120 beds). We used convenience sampling, and the inclusion criteria were: aged between 15-19 years; pregnancy duration of 28-40 weeks; able to read and write Thai; and willing to participate. The exclusion criteria were having obstetric and/ or medical complications due to pregnancy; premature birth; having an infant with congenital anomalies; having a stillbirth; and not taking part in parenting within 4-8 weeks after birth. The required sample size was based on a power analysis estimated using the G*power program, to determine a suitable sample size for multiple regression analysis, with an effect size of .10, a power of .90, an alpha level of .05, and 7 predictors were used. The minimum number of

participants needed was 190. Being a prospective correlational study, a dropout rate of 15% was added, so the required number of participants was at least 219 and the actual number in this study being 220.

Ethical Considerations: Study approval was obtained from the Research Ethics Committee of the Faculty of Nursing, Chiang Mai University (Approval No. 176/2015). Participants were informed of the nature and processes of the study and protection of confidentiality. After agreeing to participate, they were asked to sign an informed consent form. For those aged 15-17 years, permission was received, and an informed consent was signed by their parents or legal guardians.

Instruments: Six instruments were used to collect data, all of which were self-rating questionnaires. Permission was obtained from the original developers of five instruments, while the original English version of the Postpartum Support Questionnaire (PSQ) was translated into Thai using the WHO instrument translation technique and adaptation process.[22] All research instruments were checked for reliability before their use. They are described below:

Personal Information Questionnaire was developed by the primary investigator (PI). It consisted of information regarding age, marital status, parity, socioeconomic status (SES), and pregnancy intention.

Measurement of SES: Questions focused on 1. Education, rated between 0 = never study and 1 = study; 2. Occupation: 0 = no occupation and 1 = having an occupation; 3. Monthly individual income, rated between 0 = low income <3,000 baht (approx. USD100) based on the Thai federal poverty level and 1 = high income >3,000 baht; and 4. Monthly family household income, rated between 0 = <15,000 baht (approx. USD500) and 1 = >15,000 baht.

Intended pregnancy. A closed question (yes or no) focused on the intention of pregnancy, where 1 = yes and 0 = no intention for pregnancy. Intended pregnancy provides an overall raw score range from 0 to 1. The interpretation of the results was determined by the choice that reflected the intention of pregnancy at 1 score.

Edinburgh Postnatal Depression Scale (EPDS)[23] This study used the Thai version of Pitanupong and colleagues.[24] The instrument was used to measure depression in the postpartum period. It includes 10 items and responses are rated on a 4-point scale (0 = not at all to 3 = yes, most of the time). An item example is: I have been able to laugh and see the funny side of things. The EPDS provides an overall raw score range of 0 to 30; a higher score indicates higher PPD. The validation of the Thai version is accepted in screening for PPD,[24] and the Cronbach's alpha coefficient in this study was .87.

Kansas Marital Satisfaction Scale (KMSS).[14] This study used the Thai version by Boonnate and colleagues[25] to measure marital satisfaction. It includes 3 items and responses are rated on a 7-point Likert scale (1 = extremely dissatisfied to 7 = extremely satisfied). An item example is: How are you satisfied with your marriage? The KMSS provides an overall raw score range of 3-21 and a higher score indicates higher satisfaction with married life. For convergent validity, the KMSS was acceptable.[26] Cronbach's alpha coefficient in this study was .99.

Parenting Stress Index-Short Form (PSI-SF).[16] This study used the Thai version by Psychological Assessment Resources (PAR)[16] to measure parenting stress. This includes 36 items and responses are rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). An item example is: My child seems to cry or fuss more often than most children. The PSI-SF provides an overall raw score range of 36-180 and a higher score indicates high parenting stress. This instrument's validity was acceptable,[27] and Cronbach's alpha coefficient in this study was .91.

Rosenberg's Self-Esteem (RSE).[18] This study used the Thai version by Srisaeng.[28] This includes 10 items and responses are rated on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree). An item example is: On the whole, I am satisfied with myself. The RSE provides an overall raw score range from 10 to 40 and a higher score indicates higher self-esteem.

The mean concurrent validity was .57.[18] Cronbach's alpha coefficient in this study was .82.

Postpartum Support Questionnaire (PSQ) for the Adolescent.[29] The instrument was translated by the research team, using back-translation following steps suggested by the WHO instrument translation technique and adaptation process.[26] This includes 40 items and responses are rated on an 8-point scale (0 = not receive social support to 7 = received a lot of social support). An item example is: Needed help with cooking meals. The PSQ provides an overall raw score range from 0-280 and a higher score indicates higher received postpartum social support. The concurrent validity with the PSQ was .48.[29] Cronbach's alpha coefficient in this study was 0.98.

Data Collection: Data were collected during 2017-2018 with the facilitation of hospital directors and their health care teams working within antenatal and family planning clinics. Research assistants (RAs) were necessary for collecting data as this occurred simultaneously in the hospitals. The RAs, registered nurses who had experience in conducting research, were given the information about potential participants, study objectives, the inclusion criteria and consent forms, and were informed of the ethics of voluntary participation. Each participant completed the self-rating questionnaires at an antenatal clinic (initially at 28-40 weeks) to provide information about their socio-economic status and intended pregnancy. Data collection was continued through the postpartum period at family planning clinics, at 4-8 weeks after birth. The participants were requested to provided information on marital satisfaction, parenting stress, received postpartum social support, and postpartum depression.

Data Analysis: Data were analyzed using IBM SPSS version 21 and descriptive analysis was performed for all study variables. A Kolmogorov-Smirnov test was performed to test for normal distribution of study variables. The results revealed that distributions of the scores for three study variables, postpartum depression, marital satisfaction, and self-esteem were abnormal. Rank-based inverse normal transformation (INT) using Blom's formula was applied to PPD, marital satisfaction, and self-esteem to improve normality. Pearson's correlation was employed to examine the strength and direction association between the study variables. Assumptions of normality, linearity, multicollinearity, and autocorrelation were tested for regression analysis. All explaining factors were checked for correlation and multicollinearity using Pearson's correlation (for both continuous variables) and Biserial correlation (for dichotomous and continuous variable). Based on the guided theoretical framework, hierarchical regression analysis was used to examine the power of explaining the set of variables on PPD included socio-economic status, intended pregnancy, marital satisfaction, parenting stress, self-esteem, and received postpartum social support on PPD.

Results

A total of 220 pregnant adolescents participated in this study. The mean age was 17.77 years (SD = 1.30). Most participants were married or cohabiting (86.4%); had graduated from junior high school or high school (85.0%) were unemployed or students (74.1%); had low personal income of <3,000 baht/month (78.2%), and low family income (<15,000 baht/month) (74.5%). Over half of participants had intended pregnancy (55.9%), and the majority were primigravida (86.8%) (Table 1).

Study variables

The overall mean score of PPD was at a low level. Regarding four independent variables, the overall mean scores of marital satisfaction and self-esteem were at a high level. The mean scores of parenting stress and received postpartum social support were at a low levels (Table 2).

Table 1 Demographic characteristics, obstetric characteristics and postpartum depression (n = 220)

Characteristics	Number	%
Age (years) (Mean = 17.77 SD = 1.30 Range = 15-19 years)		
15-17	81	36.8
18-19	139	63.2
Marital status		
Married or cohabiting	190	86.4
Divorced	30	13.6
Level of education (degree)		
Primary school	33	15.0
Junior high school / High school	187	85.0
Occupation		
Unemployed/student	163	74.1
Employed	57	25.9
Monthly personal income		
No income or <3,000 baht	172	78.2
>3,001 baht	48	21.8
Monthly household income		
Low income (≤15,000 baht)	164	74.5
High income (>15,000 baht)	56	25.5
Intended pregnancy		
Yes (1)	123	55.9
No (0)	97	44.1
Number of pregnancies		
Primigravida	191	86.8
Multigravida	29	13.2

Table 2 Descriptive statistics of study variables (n = 220)

Variables	Possible score	Actual range	Mean	SD	Level
1. Postpartum depression	0-30	0-24	6.18	4.44	Low
2. Marital satisfaction	3-21	3-21	14.92	4.99	High
3. Parenting stress	36-180	37-164	80.67	19.61	Low
4. Self-esteem	10-40	10-40	29.39	4.10	High
5. Received postpartum social support	0-280	0-280	159.47	64.76	Low

Factors explaining PPD

A correlation matrix between the study variables is shown in Table 3. Overall, multicollinearity was not found in this study. Five variables (socio-economic status, included occupation and personal income, intended pregnancy, marital satisfaction, and self-esteem) were significantly associated with PPD. Some parts of socio-economic status, education level, family income, and received postpartum social support, were not significantly related to PPD.

Table 3 Correlations for postpartum depression (PPD) (n = 220)

Variable	1	2	3	4	5	6	7	8	9	10
1. Education	1.00									
2. Occupation	.10	1.00								
3. Personal income	.03	.65**	1.00							
4. Family income	.06	.13	.24**	1.00						
5. Intended pregnancy	-.04	-.20**	-.14*	-.02*	1.00					
6. Marital satisfaction	.05	.09	.12	.08**	.21	1.00				
7. Parenting stress	.03	.18**	.21**	.16**	.01	-.24**	1.00			
8. Self-esteem	.12	.09	.08	.09**	.09	.27	-.25**	1.00		
9. Received postpartum social support	.05	.13	.08	.01	.01	.14	.08	.09	1.00	
10. Postpartum depression	.03	-.15*	-.17*	.09	-.14*	-.38**	.37**	-.27*	.01	1.00

In the first model, the background and context of stress (education level, occupation, personal income, and family income) did not significant explain PPD. The addition of marital satisfaction in the second model was a significant factor explained by 16.5% of the variance in PPD. In the third model, parenting stress and self-esteem were significantly factoring and explained an extra 8.4 % of the variance in PPD after controlling for primary stressors. When controlling the background and context of stress, primary stressors, and secondary stressors in the fourth model, the received postpartum social support did not explain PPD. Therefore, the three factors of marital satisfaction, parenting stress, and self-esteem were significantly explained 25% of the variance in PPD among Thai adolescent mothers. The highest and significant factor in explaining PPD among adolescent mothers was marital satisfaction follow by parenting stress and self-esteem (Table 4).

Table 4 Results of hierarchical regression analysis of factors predicting postpartum depression (N = 220)

Model	Predictors	b	S.E. (b)	Beta	t	Sig
1.	(Constant)	0.028	.140		.204	.839
	Education	-.065	.184	-.024	-.354	.724
	Occupation	-.143	.198	-.064	-.723	.470
	Personal income	-.271	.212	-.116	-1.280	.202
	Family income	.121	.150	.056	.810	.419
R = .188, R2 = .035, R2 Adjust = .017, R2 Change= .035						
Overall F (4,214) = 1.955, p = .103						
2.	(Constant)	0.078	.145		.535	.593
	Education	-.025	.172	-.009	-.147	.884
	Occupation	-.108	.187	-.049	-.576	.565
	Personal income	-.196	.199	-.084	-.987	.325
	Family income	0.078	.140	.036	.557	.578
	Intended pregnancy	-.093	.128	-.048	-.730	.466
	Marital satisfaction	-.358	.066	-.351	-5.432	<.001
R = .406, R2 = .165, R2 Adjust = .141, R2 Change = .130						
Overall F(6,212) = 6.972, p < .001 p < 0.05, ** p < 0.01						

Table 4 Results of hierarchical regression analysis of factors predicting postpartum depression (N = 220) (Cont.)

Model	Predictors	b	S.E. (b)	Beta	t	Sig
3.	(Constant)	-.858	.279		-3.075	.002
	Education	-.114	.166	-.042	-.686	.494
	Occupation	-.025	.179	-.011	-.141	.888
	Personal income	-.141	.190	-.060	-.741	.459
	Family income	0.012	.134	.005	.088	.930
	Intended pregnancy	-.131	.122	-.067	-1.070	.286
	Marital satisfaction	-.262	.066	-.257	-3.954	<.001
	Parenting stress	0.012	.003	.254	3.934	<.001
	Self-esteem	-.131	.063	-.133	-2.068	.040
R =.499, R2 = .249, R2 Adjust = .221, R2 Change =.084						
Overall F(8,210) = 8.710, p < .001						
4.	(Constant)	-.920	.305		-3.015	.003
	Education	-.111	.166	-.041	-.666	.506
	Occupation	-.017	.180	-.008	-.097	.923
	Personal income	-.140	.190	-.060	-.737	.462
	Family income	0.013	.135	.006	.095	.924
	Intended pregnancy	-.130	.123	-.067	-1.062	.290
	Marital satisfaction	-.267	.067	-.262	-3.978	<.001
	Parenting stress	-0.012	-.003	.250	3.834	<.001
	Self-esteem	-.133	.064	-.135	-2.095	.037
	Received postpartum social support	.000	.001	.031	.506	.613
R = .500, R2 = .250, R2 Adjust = .218, R2 Change = .001						
Overall F(9,209) = 7.743, p < .001 p < 0.05, ** p < 0.01						

Discussion

In this study the factors explaining PPD was undertaken using the SPM framework.[10] In the first regression model, the socio-economic status (education level, occupation, personal income, and family income) was insignificant, indicating that a low level of education, no occupation, low personal, and family income do not explain PPD in Thai adolescent mothers. This result is congruent with a prior study, which found that low SES does not affect PPD.[30] A possible explanation is that in Thai northern culture there is a belief that after childbirth women should receive postpartum health care from their own families (i.e., parents); therefore, they do not need to pay for daily living costs from whom they usually received essential appliances for infants. Further, presents or money are given by the partner or husband and his parents and the adolescent teenage mothers and children to celebrate the birth of a new baby. Consequently, low SES in adolescent mothers did not influence PPD, perhaps because they received affection, respect, and childcare support from their own families. After adding intended pregnancy and marital satisfaction, the primary stressors, to the second model, it was found that only marital satisfaction was a significant factor in explaining PPD as high marital satisfaction reduced PPD. This finding is consistent with previous studies among adolescent

mothers,[15] and mothers in general.[30, 31] Intended pregnancy was not a significant factor explaining PPD, consistent with another study,[32] and a possible explanation for this is that it is more challenging for adolescents with unintended pregnancy to cope with unexpected and undesired events. However, when they could better cope with difficult circumstances with the development of a pregnancy and a closer connection with the fetus, they were much more optimistic about their pregnancies and preferred to be good mothers. These situations might have caused less stress during pregnancy therefore unintended pregnancy did not affect PPD. In the third model, when adding the secondary stressors of parenting stress and self-esteem, it was found that both were significant factors in explaining PPD, as high parenting stress and low self-esteem contribute to PPD. The parenting stress might be explained by first-time mothers having difficulty in adapting during their transition to the maternal role, experiencing greater worry and increased physiological stress response (i.e.cortisol) related to PPD,[33] for parenting stress has been associated with higher levels of maternal depression in adolescent mothers.[34, 35] Possibly this is because there are complex tasks of motherhood being associated with an individual's own unique set of stressors, and which tend to become continuous stressors associated with the parenting role over the long term. For new mothers, breastfeeding can take a great deal of time, and an absence of childcare and ancillary support can exacerbate conflicts with partners, which in turn increases the risk of PPD.[31] Low self-esteem contributed to PPD in this study, which is consistent with previous findings,[36,37] for example low self-esteem caused such mothers to be were passive, defensive, and having negative perceptions of themselves, an indicator factor related to PPD.[36] Whenever women are expected to fulfill their maternal role but could not, they feel that they have failed, and thus have low self-worth.[7] Moreover, when adolescent mothers feel that motherhood demands leave them little time to connect with their friends, they might feel isolated and have low self-esteem which develops into or contributes to PPD.[7]

Surprisingly, when adding received postpartum social support in the fourth model, it was found that this was not significant in explaining PPD. In general, receiving adequate social support can buffer stress and protect adolescent mothers from harmful stressors. This study is consistent with a previous study,[38] which found that social support might not fit with teenagers' needs.[39] Our SPM needs further clarification of the relationships among variables in explaining PPD with other important variables such as intimate partner violence may be added.

Limitations

It should be noted that this study used convenience sampling thus, the generalization of the finding is limited. Additionally, only 25% of the PPD variance could be explained, so clearly, other factors are at work. Thus, this SPM needs further clarification of the relationships among variables in explaining PPD with other important variables such as obstetric complications, stressful life events, intimate partner violence, physical causes, and postpartum symptoms.

Conclusions and Implications for Nursing Practice

The result of this study highlights the marital satisfaction as the strongest in explaining PPD among adolescent mothers. Thus, nursing interventions to improve marital or partner satisfaction should be emphasized to reduce post partum depression. Childbirth preparation programs need to be available that focus on promoting and strengthening good relationships between couples to reduce stress and prevent PPD in adolescent mothers. This includes enhancing and promoting the abilities of the husband/partner to take part in childcare, especially in the early postpartum period to try to reduce postpartum depression in adolescent mothers.

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ปัจจัยอธิบายภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่นไทย

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บทคัดย่อ: มารดาวัยรุ่นนับเป็นผู้ที่มีความเสี่ยงต่อการเกิดภาวะซึมเศร้าหลังคลอด เนื่องจากมารดาวัยรุ่นต้องเผชิญกับสถานการณ์ความเครียดจากการเปลี่ยนผ่านบทบาท การทำความเข้าใจเกี่ยวกับปัจจัยที่อธิบายถึงผลลัพธ์ของความเครียดจึงเป็นสิ่งจำเป็นในการออกแบบการดูแลที่มีประสิทธิภาพในกลุ่มมารดาวัยรุ่น การศึกษาความสัมพันธ์เชิงทำนายมีวัตถุประสงค์เพื่อศึกษาว่าสถานภาพทางเศรษฐกิจและสังคม การตั้งครรภ์ที่ตั้งใจ ความพึงพอใจในชีวิตสมรส ความเครียดในการเลี้ยงดูบุตร การเห็นคุณค่าในตนเอง และการได้รับการสนับสนุนทางสังคมหลังคลอดสามารถอธิบายภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่นไทย การศึกษาครั้งนี้ใช้โมเดลกระบวนการความเครียดเป็นกรอบแนวคิด ทำการคัดเลือกกลุ่มตัวอย่างแบบตามสะดวกในมารดาวัยรุ่นจำนวน 220 คน ที่มารับบริการที่คลินิกฝากครรภ์และคลินิกวางแผนครอบครัวในโรงพยาบาล 10 แห่งในเขตภาคเหนือของประเทศไทย เครื่องมือที่ใช้ในการรวบรวมข้อมูลเป็นแบบรายงานด้วยตนเองจำนวน 6 ชุด ประกอบด้วย 1) แบบบันทึกข้อมูลส่วนบุคคล 2) แบบวัดความพึงพอใจในชีวิตสมรสของแคนซัส 3) แบบสอบถามความเครียดจากการเลี้ยงดูบุตรฉบับย่อ 4) แบบวัดความรู้สึกมีคุณค่าในตนเองของโรเซนเบิร์ก 5) แบบสอบถามการสนับสนุนทางสังคมในระยะหลังคลอด และ 6) แบบวัดภาวะซึมเศร้าหลังคลอดของอีดินเบิร์ก และวิเคราะห์ข้อมูลโดยใช้สถิติเชิงบรรยาย และสถิติวิเคราะห์ถดถอยพหุคูณแบบเชิงชั้น

ผลการวิจัยพบว่า ปัจจัยทั้งหมดสามารถอธิบายความแปรปรวนของภาวะซึมเศร้าหลังคลอดของมารดาวัยรุ่นไทยได้เพียงร้อยละ 25 ปัจจัยที่สามารถอธิบายได้มากที่สุดคือ ความพึงพอใจในชีวิตสมรส รองลงมาคือ ความเครียดในการเลี้ยงดูบุตร และการรับรู้คุณค่าในตนเอง อย่างไรก็ตามปัจจัยสถานะทางสังคมเศรษฐกิจ ความตั้งใจในการตั้งครรภ์ และการได้รับการสนับสนุนทางสังคมในระยะหลังคลอด ไม่ใช่ปัจจัยที่อธิบายภาวะซึมเศร้าหลังคลอดในมารดาวัยรุ่นไทย ซึ่งเป็นที่ชัดเจนว่าปัจจัยอื่น ๆ สามารถอธิบายภาวะซึมเศร้าหลังคลอดได้ ดังนั้นการใช้ประโยชน์จากผลลัพธ์แบบจำลองในการศึกษาครั้งนี้ยังมีข้อจำกัดและควรทำการพัฒนาศึกษาเพิ่มเติมรวมถึงทดสอบบทบาทของปัจจัยความเครียดอื่น ๆ เช่น สาเหตุทางกายภาพและอาการหลังคลอด อย่างไรก็ตามผลการศึกษาครั้งนี้สนับสนุนการปฏิบัติการพยาบาลโดยควรเน้นและสนับสนุนความสัมพันธ์ของคู่รักวัยรุ่น ส่งเสริมให้บิดาช่วยเหลือในการเลี้ยงดูบุตรและใช้กลยุทธ์ต่าง ๆ ในการสนับสนุนมารดาวัยรุ่นให้ลดการเกิดภาวะซึมเศร้าหลังคลอด

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