

RISK FACTORS OF PSYCHOSOCIAL STRESS IN PREGNANCY

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Abstract

Intorduction: Pregnancy period begins from conception until birth. The pregnancy process involves emotional, physical, and social alterations in the family. Although previous evidence has consistently shown that maternal psychosocial stress influence the outcome of the newborn, maternal emotional condition and psychosocial stress remain less explored. We aimed to identify risk factors associated with the psychosocial stress in pregnancy.

Methods: Therefore, we conducted a cross-sectional study of 158 pregnant women from the Obstetrics and Gynecology outpatient clinic, Hasanuddin University hospital. Data were obtained using an interview-based likert-scale questionnaire.

Results: We described the characteristics of the study population using Chi-square and independent t test. Of 158 pregnant women, more younger women with older gestational age were likely to have a high level of stress (not statistically significant).

Conclusion: Socio-economic status (i.e. educational level and occupation), and number of parity do influence the level of psychosocial stress in pregnancy.

INTRODUCTION

Pregnancy period begins from conception until birth. It comprises of three semesters: the first-trimester begins from conception to twelve weeks, second-trimester from 13th up to 26th week, and the third-trimester from 27th up to 40th week.¹

As its natural course, pregnancy will develop normally and end up with a birth of healthy newborn(s).¹ However, it is still difficult to predict whether a pregnancy would encounter problems. The process involves emotional, physical, and social factors from the family and environment. Although consistent evidence has shown that maternal psychosocial stress

influence the outcome of the newborn,² the maternal emotional condition and psychosocial stress, are however, still rarely explored.

Psychosocial stress in pregnancy is defined as the imbalance condition where the pregnant women feel that they not able to fulfill their obligations, and at some point, this would be automatically reflected through behavior and physiological condition.³ The negative thoughts and sense of fear will periodically become the main cause of the stress. Women who suffer from stress during their pregnancy, directly or not, would affect the physiological and psychological development of the foetus.⁴ The American College of Obstetrics and Gynecology (ACOG) stated that psychological stress would directly impact on women's health. The committee

suggests that all pregnant women should undergo a psychosocial screening at least each semester, and at post-partum period.⁵

Several studies have shown the association between psychosocial stress during pregnancy and the family violence, drug abuse, depression, psychiatric abnormalities, weight loss, and chronic disease.^{3,6} Woods *et al.* suggested that psychosocial stress during pregnancy commonly occur, and the high level of stress do contribute to the health level of the newborn. Meanwhile, Rondo *et al.* revealed that women with a high level of stress during pregnancy are at increased risk to give a preterm birth and deliver a low-birth weight newborn.⁵

We aimed to investigate the risk factors associated with the psychosocial stress in pregnancy. Therefore, we conducted a cross-sectional study of 158 pregnant women from the Obstetrics and Gynecology outpatient clinic, Hasanuddin University hospital.

METHODS

In this study, we recruited the participants of pregnant women who had undergone the antenatal examination at the Obstetrics and Gynecology outpatient clinic, Hasanuddin University Hospital. This study was approved by the Institutional Review Board and Ethical Committee of the Faculty of Medicine, Hasanuddin University.

We cross-sectionally collected data using a Likert-scale questionnaire of 11 questions. In this questionnaire, we asked several questions pertaining to the age of the pregnant women, term of pregnancy, socio-economic status (i.e. level of education, marital status, and clan), parity, daily habits (e.g. cigarette smoking, alcohol consumption, and drugs abuse), as well as family violence. All these variables were in accordance to the profile table of the prenatal psychosocial stress that already been measured and validated in pregnant women. We subsequently analyzed the data using independent sample t-test and Chi-square test to identify the baseline characteristic of the study population. Two-sided p-value <0.05 was considered statistically significant. All data were analyzed using SPSS.

RESULTS

In total, 158 pregnant women were recruited during the study period.

Table 1. Analysis of age and gestational age to the psychosocial stress at several hospitals in Makassar

Characteristic	Psychosocial Stress		p-value
	Yes (n = 8)	No (n = 150)	
Age (years)	26.3 ± 6.3	28.1 ± 6.3	0.417
Gestational age (weeks)	30.6 ± 9.2	28.2 ± 9.6	0.475

Our study showed that younger women were likely to suffer from stress in pregnancy (although not statistically significant). While, women at

gestational age of 30.6 ± 9.2 weeks were most likely vulnerable to have a high-level of stress.

Table 2. Analysis between socio-economic factors and the the psychosocial stress in several hospitals in Makassar

Characteristic	Psychosocial Stress		Statistic test Chi-Square	p-value
	Yes (n = 8)	No (n = 150)		
Education				
High school graduate	6 (75)	96 (64)	0.402	0.526
Not graduate	2 (25)	54 (36)		
Occupation				
Yes	3 (37.5)	25(16.7)	2.261	0.133
No	5 (62.5)	125(83.3)		
Martial Status				
Married	8 (100)	150 (100)	-	-
Not married	0	0		
Tribe				
Makassar	7 (87.5)	115 (76.7)	2.009	0.366
Bugis	0	26 (17.3)		
Others	1 (12.5)	9 (6)		
Parity				
Primipara	3 (37.5)	60 (40)	0.20	0.888
Multipara	5 (62.5)	90 (60)		
Smoking				
Yes	0	4 (2.7)	0.219	0.640
No	8 (100)	146 (97.3)		
Alcohol				
Yes	0	3(2.0)	0.163	0.686
No	8 (100)	147(98,0%)		
Drug abuse				
Yes	0	3 (2.0)	0.163	0.686
No	8 (100)	150 (98.0)		
Family violence				
Yes	0	4(27.7)	0.219	0.640
No	8 (100)	146(97.3)		

Values are n (%).

P value have significant if <0,05

Table 2 shows the analysis of socio-economic factors with the psychosocial stress in pregnancy. There were 158 participants with an age range between 16 to 43 years old. These participants came from Makassar (n=122), Bugis (n=26), and others tribes (n=10). Primipara women were 63 (39.9%) in all the pregnancy, while multipara in 95 (60.1%). All participants were married women, with an educational level of senior high school (102, 64.4%) and junior high school or lower (56, 35.4%). Of all participants, only 28 (17.7%) are worked women. In our analysis, we included smoking, drink of alcohol, and caffeine consumption as confounding variables that may influence the association between psychosocial stress and premature birth.^{7,8}

DISCUSSION

In this study, there were 8 pregnant women who suffered from stress at the age of 26.3 ± 6.3 years, compare with 150 pregnant women with no stress at the mean age of 28.1 ± 6.3 years. Several motivations why women have different cognitive and psychosocial characters in the group of age of 20's:

- They occasionally do not want to admit that they pregnant;
- Deeper emotional feeling they have towards their husbands. By conceiving, they want to show their feminine sides, maturity and ask for protection from their spouses, and
- For several women who did not accomplish their educations, this pregnancy was another way to become housewives.

Women who are at 20 years or above, tend to be more careful and independent to determine the

bests during their pregnancies. In this study, we found that younger women (26.3 vs. 28.1) and with older gestational age (30.6 vs. 28.2 weeks) were most likely to suffer from stress, compared to the counterpart groups.

The emotional changes in women at the third-trimester pregnancy, mainly at the very last gestational age, not only reflects the happiness, but also mixed with anxiety and fear. In most of women, the sense of fear and anxiety toward the pain of birth make a self-depressed; of which this ambivalent feeling could increase the level of stress. The anxiety of pregnant women usually comes at the time of birth; these women tend to think the health status of the newborn and what should they do after birth. These thoughts and feelings commonly appear in pregnant women.⁹

There were more women with higher educational level (graduated from high school) who suffered from stress, compared to the non-stress group (75% vs. 64%, $p=0.526$). Although not statistically significant, this indicated that women who had finished high schools have more awareness on birth process and knowledge of things to do after birth which involve physical and psychic burden, and financial. Educational level did influence the point of view of pregnant women towards the pregnancy. It might be connected with their knowledge in preserving healthy condition during pregnancy and to have medical assistances.

There were more unworked women with no additional income who got stress, compared with those who worked (62.5% vs. 37.5%). One plausible explanation is that the pregnancy process needs several antenatal examinations; and for those who did not work, it means an additional burden of the household expenses. The out-of-pocket expenditure for transportation, medical care, and medicine are increased. The work itself influence the socio-economic status of the family, of which an additional income, would increase the nutritional status of the pregnant women, and at the end affects the development of the foetus. For pregnant women who have worked, it means they have an extra income for their needs during pregnancy, and it would reduce the economic burden psychologically.

All of our participants are married women. Eight of them were under stress, while the remaining ($n= 150$) did not experience stress. From our findings, we concluded that women who had legally married have less tendency to bare stress. Having an illegal pregnancy is still not excepted in the society, and it will cost psychologically burden for those who

experienced it. Hobel, *et al.* suggested that women with an unwanted child or not admitted by their partner will have a poor psychological condition, and it may impact the development of the foetus, and after birth, the newborn may experience the physical and psychological problem in the first year of life.⁽⁹⁾

The parity level indeed influences the psychosocial stress in pregnancy. In this study, there were three (37.5%) primipara women experienced psychosocial stress compared with five (62.5) multipara. Women with a previous history of childbirth are likely to bare with a high level of psychosocial stress. This may be caused by their bad experience that leads to a medical or obstetrical complication. This condition could be even worse at women who has a high-risk infant and congenital abnormality. For some women, the labor pain could induce depression .

Due to the relatively small sample size in the present study, we could not detect differences between women with cigarette smoking, alcohol consumption, drugs abuse, and family violence, and the counterpart groups, in association with the psychosocial stress. However, a previous study in Columbia suggested that women who smoke have a higher level of stress and get lower social support from their partner, and therefore, result in a mental disturbance.¹⁰ While drugs exposures (e.g. alcohol, cocaine, and tobacco) will likely to cause physical and mental disorders in pregnant women; and at the end, will cause a serious structural deficit or functional disturbance in the foetus.¹¹

CONCLUSION

Younger women with an older gestational age are more likely to suffer from psychosocial stress in pregnancy. Socio-economic factors, i.e. educational level, occupation, and parity level indeed influence the occurrence of psychosocial stress in pregnancy.

REFERENCES

1. Affandi B. Kehamilan Normal. In: A.B S, editor. Pelayanan Kesehatan Maternal dan Neonatal. 4th ed. Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo; 2006.
2. Alder J, NF, Bitzer J, Hosli I, Holzgreve W. Depression and anxiety during pregnancy: A risk factor for obstetric, fetal and neonatal outcome? A critical review of the literature.

- The Journal of Maternal-Fetal and Neonatal Medicine. 2007; 3th(20): 189-209.
3. M. Woods S, L.Melville J, Guo Y, Fan MY, Gavin A. Psychosocial stress during pregnancy. American Journal of Obstetrics & Gynecology. 2010; 61e1-7.
 4. Pieter H.Z, Lubis N.L. Pengantar Psikologi untuk Kebidanan. Jakarta. 2008. p. 218-43.
 5. Rondo P, Ferreira R, Nogueira F, Ribeiro M, Lobert H, Artes R. Maternal psychological stress and distress as predictors of low birth weight, prematurity and intrauterine growth retardation. European Journal of Clinical Nutrition. 2003;57:266-72.
 6. Hobel C, Culhane J. Role of Psychosocial and Nutritional Stress on Poor Pregnancy Outcome. American Society for Nutritional Sciences. 2003;133rd:1709-17.
 7. Neggers Y, Goldenberg R, Cliver S, Hauth J. The relationship between psychosocial profile, health practices, and pregnancy outcomes. Acta Obstetrica et Gynecologica. 2006;85th:277-85.
 8. Tegethoff M, Greene N, Olsen J, Meyer AH, Meinlschmidt G. Maternal Psychosocial Stress during Pregnancy and Placenta Weight: Evidence from a National Cohort Study. Plos One. 2010; 5th(12): 1-7.
 9. Hobel, C., Goldstein, A. and Barrett, E.S. (2008) Psychosocial Stress and Pregnancy Outcome. Clinical Obstetrics and Gynecology, 51, 333-348.
 10. Bullock LF, Mears JL, Woodcock C, Record R. Retrospective study of the association of stress and smoking during pregnancy in rural women. Addictive Behaviours. 2001;26th:405-13.
 11. Mulder EJH, Medina PGRd, Huizink AC, Bergh BRHVd, Buitelaar JK, Visser GHA. Prenatal maternal stress: effects on pregnancy and (unborn) child. Early Human Development. 2002; 7th: 3-14.