

Smart Mother Classes Toward Coping Skill Ability, and Anxiety Level among Pregnant Women

RUNJATI¹, SRI RAHAYU¹, IDA ARIYANTI¹, SRI WAHYUNI², EMY SURYANI²

¹ Poltekkes Kemenkes Semarang, Jl Tirta Agung Pedalangan Banyumanik Semarang, Central Java, Indonesia

² Poltekkes Kemenkes Surakarta. Central Java, Indonesia

Corresponding author: Runjati, email: runjati@yahoo.com, Telp+62 82137045968,

ABSTRACT

Background: Antenatal education is considered standard care for pregnant women. Unfortunately, this class does not provide sufficient skills for women to cope with stress during pregnancy and delivery. In the other side, study literature claims that coping skill is truly essential for the mother to cope with and minimize the anxiety which leads to a serious risk for both mother and baby.

Objective: This study aims to prove the impact of smart mother classes to improve coping skills ability and decrease anxiety levels among pregnant women.

Methods: This study used a randomized pre-test post-test control group design in which the ages of pregnancies were 28-35 weeks in Semarang City Region. The mothers were randomly assigned to be members of an experiment group (n=50) and a control group (n=50). The experiment group was given smart mother classes that did perform antenatal classes and coping skills, while the control group was given standard classes, antenatal education only. The data analysis employed a dependent sample t-test and independent sample t-test.

Results: There is a significant change over coping skill ability for the intervention group ($p < .01$), but not in the control group. Furthermore, there is also a significant change in the decrease in anxiety levels in the intervention group ($p < .01$).

Conclusion: Smart mother classes are predominantly effective to reduce anxiety levels and enhance coping skill ability among pregnant women. Thus, pregnant women need to join smart mother classes during pregnancy.

Keywords: smart mother classes; coping skill, anxiety level, antenatal classes

INTRODUCTION

Pregnancy requires a lot of adjustments in physiological, psychological, family, financial, work, and other conditions that can cause emotional distress for pregnant women. Those with low incomes and low sources of support will easily be susceptible to experience more stress.¹ There are many reasons why pregnancy can cause susceptibility to the increased anxiety and stress including physiological and hormonal changes, physical discomfort, uncertainty, fear of possible pregnancy and birth complications, major worry for self and baby health, significant life changes, and exacerbations or recurring psychiatric disorders for those having disturbances.² Stress and anxiety are caused by a negative way of life, genetic predisposition, infection, young age, lack of sleep, physical demands, low coping system, low socio-economic, psychological violence, low nutrition, environmental exposure, low social support.³

The impact of stress and anxiety on pregnant women can increase adverse effects such as miscarriage.⁴ may experience pregnancy complications, preterm birth (PTB), lower gestational age, and low birth weight.^{5,6} Maternal anxiety during pregnancy is associated with negative consequences for mothers and children, including increased symptoms related to pregnancy (for example, nausea and vomiting), higher alcohol and tobacco use, more medical visits, obstetric complications, shorter pregnancy, fetal nerve development delays, and emotional problems with child problems later on.⁷ Anxiety and stress in early pregnancy have been associated with 2-3 times greater risk of preeclampsia development of gestational hypertension in pregnancy.⁸ through stimulation from the sympathetic nervous system.⁹

Coping efforts during pregnancy by reducing the negative effects of emotional, behavioral, cognitive, and

physiological responses are important enough to influence better pregnancy and delivery outcomes. The coping ability helps pregnant women and children to implement appropriate steps to deal with stress, which is also their defense from the potentially harmful effects of prenatal stress exposure. A large epidemiological study of 1,898 African-Americans and White women in North Carolina found that coping styles concerning stress avoidance were associated with an increased risk of preterm birth.^{10,11} Coping responses are related to more favorable indicators for psychological well-being. Coping during pregnancy can be done through positive assessments by creating positive meanings focusing on personal development which is associated with better outcomes for mothers and babies, fewer symptoms of depression, and lower problems in pregnancy.¹²

In addition to the coping skills of pregnant women, one of the efforts to prevent problems and complications during pregnancy is that increasing the knowledge of pregnant women and prepare for labor well, namely through the pregnancy classes which are carried out continuously. The provision of classes for pregnant women is expected to better prepare mothers psychologically and increase their knowledge of pregnancy and childbirth so that it can help reduce maternal anxiety regarding labor. However, the research on 90 primigravida mothers was found that there was no relationship between attendance in the antenatal class and feelings of being able to control labor and anxiety. The results of the study suggest that an evaluation of the content of maternal class material is highly needed to further strengthen mothers in controlling labor.¹³ Previous research that employs health education and coping skills education is conducted on pregnant women who integrate antenatal class activities and

maternal coping skills. That research allows mothers not only to take advantage of aspects of pregnancy and birth care practices as well as postpartum and baby care, but also help mothers to conquer emotional aspects dealing with anxiety and stress by measuring the mothers' coping skills in undergoing the pregnancy and facing the labor. Previous research has not measured maternal coping abilities and anxiety, so it is necessary to improve the material on coping skills.¹⁴ This research develops smart mother classes by adding coping skills to standard class activities to prove significant changes in coping abilities and levels of maternal anxiety during pregnancy and labor.

MATERIALS AND METHODS

This is an experimental research with pre-test post-test control group design. In the SC control group, and SMC. The intervention in the study was to provide treatment using the SMC method to reduce anxiety and coping abilities.

Subjects: The population was all pregnant women in the second and third trimesters (28-35 weeks of gestation) at Semarang City Health Center, which was continued for 3 weeks. Samples were randomly selected to determine the allocation in the control and intervention groups at the Semarang Independent Midwife Practice (IMP), then continued using the cluster random sampling technique that met the inclusion criteria, namely the age of 20-35 years old, healthy mothers, 28-35 weeks of gestation and normal pregnancy. The exclusion criteria were mothers who had pregnancy complications, had a history of psychiatric disorders, and single parents. The sample size uses the Minimal Sample Size formula.

Treatment: The intervention in this study was the standard class method (SC) where mothers received pregnancy class materials developed by the Ministry of Health, while the intelligent mother's class received materials for pregnant women with coping abilities. Mothers attend classes for pregnant women for 3 weeks and classes for pregnant women with coping skills. The variables measured were coping abilities and maternal anxiety levels which were measured at the beginning of the study before the intervention up to 3 weeks of intervention using a questionnaire about coping abilities and anxiety levels. The intervention used standard operating procedures developed through pregnant women classes and coping skills education methods that have been improved from previous studies.

Data collection and analysis: Data were taken from mothers before the intervention and at the end of the intervention. The analysis of this study used the T different test and the Wilcoxon and Mann Whitney U tests, which were previously tested for normality. This difference is significant if the p value is <0.05. The research was conducted in 2019.

Ethical clearance: This study received ethical approval from the Bio-Ethics commission of the faculty of medicine at the Sultan Agung University with number 510 / VIII /2019 / Bioethics Commission.

RESULT

Characteristic of mothers: There were no differences both groups related to age, gestational age, gravidae

(number of pregnancies), education, occupation, and family supports. The characteristics of the mothers are shown in Table 1.

Coping Skill Ability: Changes in coping skill ability scores before and after treatment are shown in Table 2 and Figure 1.

Coping ability in the SMC (Smart Mother Classes) was analyzed using a paired t-test which resulted in p-value = 0.02. It is concluded that there was a significant difference in the pre- and post-intervention in the SMC group. Coping ability in pre- and post-intervention at standard classes (SC) using the Wilcoxon test shows p-value = 0.20, it is concluded that there are no differences between groups. Results of different test is p-value = 0.02, it means that there is a significant difference between SMC and SC against coping ability in the intervention group (2.90± 8.77), while in the control group (0-1.42± 9.67) and p-value 0.02 between groups.

Anxiety score: Anxiety scores between groups were analyzed using paired t-test and Wilcoxon, as can be seen in Table 3 and Figure 2.

Anxiety score in the SMC (Smart Mother Classes) was analyzed using the Wilcoxon test. The test results in p-value = 0.008. It can be concluded that there is a significant difference in the pre and post-intervention in the SMC group. Coping ability in pre- and post-intervention at Standard Classes (SC) was tested using a paired t-test with p-value = 0.149. It can be concluded that there are no differences within the control group that is given standard classes. Results of different test using the Mann Whitney U test was p-value = 0.015 meaning that there is a significant difference between SMC and SC against anxiety score. The mean change in intervention group anxiety score is decreased (-2.76±6.50), while in control group is increased (1.94±9.34).

TABLES

Table 1: Characteristics of respondents

Characteristic	SMC N=50	SC N=50	P value
	median (min – max) n (%)	median (min – max) n (%)	
Age	27 (18 – 39)	27(19 – 38)	0.225*
Age Gestation	32 (28 – 35)	32 (28 – 35)	0.597*
Gravida:			0.405
1	16 (32)	23 (46)	
2	17 (34)	20 (40)	
3	13 (26)	5 (10)	
4	4 (8)	2 (4)	
Education:			0.211**
- Primary	12 (24)	9 (28)	
- Secondary	28 (56)	24 (48)	
- Tertiary	10 (20)	17 (34)	
Occupation:			0.163**
- Housewife	31 (62)	21 (42)	
- Private	13 (26)	24 (48)	
- employee	5 (10)	5 (10)	
- Students	1 (2)	-	
Family Support	10 (7 –10)	10 (7 –10)	0.809**

*Independent t-test

**Mann Whitney U test

Table 2, Coping ability within and between groups

Coping	Group		P
	SMC	SC	
Pre	115.18 ± 9.97	118.44 ± 10.26	0.039
Post	118.08 ± 9.97	117.02 ± 9.13	0.581
P value	0.024*	0.207**	-
Δ CCoping	2.90± 8.77	-1.42± 9.67	0.021*

*pre vs post, paired t-test

**pre vs post, Wilcoxon

+ SMC vs SC independent t-test

Table 3 Anxiety score pre- and post-treatment within and between groups.

Anxiety	Group		P
	SMC(n=50)	SC(n=50)	
pre	53.30 ± 7.78	51.74 ± 10.49	0.37
post	50.54 ± 57.94	53.70 ± 8.63	00.143
P value	0.008*	0.149**	
Δ	-2.76±6.50	1.94±9.34	0.015*

+ Mann Whitney U test

* pre vs post; Wilcoxon

** pre vs post; paired t-test

FIGURES

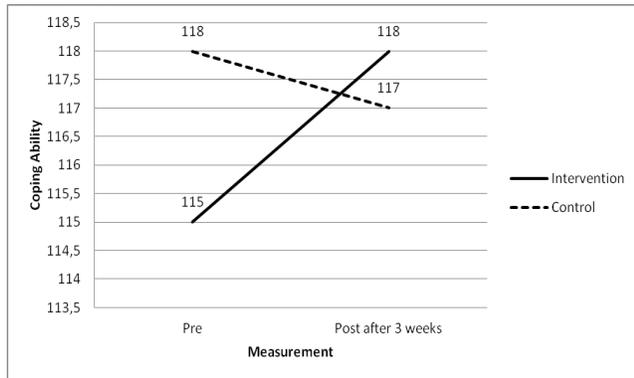


Figure 1: pre and post Coping ability between groups

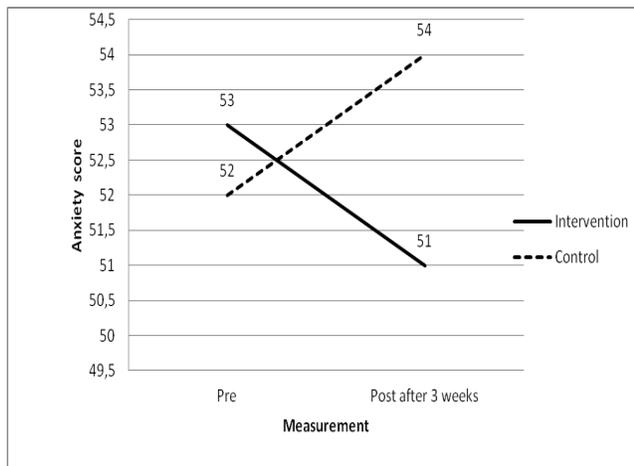


Figure 2: pre and post Anxiety score between groups

DISCUSSION

The SMC is more effective to improve coping ability in pregnant women compared to The SC.

The study hypothesis which stated that SMC is more effective in improving the coping ability in pregnant women compared to SC is acceptable. It is proven by the findings that show a significant difference in coping ability score before and after the intervention to the SMC in the intervention group, while the control group has no significant difference before and after giving SC. There is a significant effect on the increase of coping ability score at the intervention group that is given SMC compared to the control group SC.

SMC is given together with SC which provides knowledge and some training materials including a mother's ability to be able to develop a coping strategy such as emotional focus coping and problem focus coping. Coping is defined permanently as a cognitive change and behavioral effort aimed at meeting the needs or demands of special situations that are considered as stress and anxiety.¹⁵ Coping is a process in which individuals try to find out the distance that exists between demands (it demands originating from individuals or those originating from the environment) with the resources they use in dealing with stressful conditions.^{15,16} Every week mothers get reinforcement material followed by their training at home on how to develop coping skills so that they have better coping skills than those in the group that only gets a standard pregnant mother class. The results of the research on the use of coping skills in pregnancy disclose that there are two strategies for consistent handling of stressors found throughout pregnancy, namely: 1) coping that focuses on emotions (Emotion-Focused Coping / EFC) and 2) coping that focuses on overcoming problems (Problem Focused Coping / PFC). Coping in a normal nulliparous or risk pregnancy is a temporal process with little variation. The use of emotion-focused coping (EFC) is negatively related to the number of pregnancy complaints and experiences of distress.¹⁷ Problem-focused: directed to reduce or eliminate stressors called adaptive behavior. Emotion-focused or focused on emotions: directed to change one's emotional reactions.¹⁸ Problem-focused coping (PFC) is directly related to how to deal with the stressor itself and involves several steps aimed at overcoming the situation. This coping technique is carried out in situations that can still be controlled. Problem-focused coping is an effort to deal with stress. Instead emotion-focused coping (EFC) is aimed at stressful feelings related to stressful experiences and is usually targeted to the conditions that cannot be controlled. Emotion-focused coping is an effort to avoid depressed feelings. This coping effort is associated with negative adjustments because it refuses or avoids thinking about the real problem so that it can cause a negative psychological impact and physical well-being.^{17,19}

Furthermore, SMC trained mothers to have coping strategies that emphasize an effort or a process where individuals try to resolve or deal with a stressful condition. The process of coping strategies is done by changing the logic to master, tolerate, reduce, or minimize stressful situations, to find a sense of security.²⁰ Concerning the pregnancy context, coping affects the outcome of pregnancy and childbirth by minimizing or preventing negative responses from emotional, behavioral, cognitive, psychological to the stressor.²¹ There are three types of

coping strategies namely appraisal-focused, problem-focused, and emotion-focused.¹⁸ The topics of SMC also included internal and external factors of coping strategies. Internal factors include the use of coping types by individuals and individual personality types that influence the selection of coping types. External factors include real sources such as time and money, social support and other stressors such as major life conditions and the intricacies of daily life.¹⁶ So mothers in the SMC group have more coping ability rather than SC group that only provided standard classes.

Types of stress coping that focus on problem-solving cover some of the efforts that are forms of active PFC coping, planning, self-control, and seeking social support.²² Problem-focused coping involves efforts to take any action to either reduce stressor demands or to increase available resources to manage it. The examples of problem-focused efforts to overcome problems such as designing a revised plan and sticking to it, setting an agenda for a busy day, learning to improve qualifications that allow career change and organizing counselling for failed relationships. PFC is intended to reduce the demands of stressful situations or expend resources to deal with them. Daily life provides many examples of using PFC to deal with stress, including quitting smoking, negotiating an extension to pay multiple bills, designing a new schedule, choosing to pursue a different career, seeking medical or psychological care or, and studying new skills. People tend to use a problem-focused approach when they trust their resources or the demands of changing situations.¹⁵ Event ought the coping method chosen depends on the ability of individuals to assess stressors. This ability depends on the effectiveness of oneself in determining coping that was trained during SMC.²³ While maladaptive coping (e.g. failure to deal with distress or manage problems) occurs when people respond to uncontrolled stress primarily with problem-focused coping strategies, or when people respond to controlled stress primarily with emotional focus coping strategies (Emotion-focused coping).

SMC more effective in decreasing anxiety score in pregnant women compared to SC

The results of the study show that the intervention SMC is effectively decreasing mothers' anxiety scores than those who followed SC. Anxiety is a condition characterized by worry accompanied by somatic symptoms that indicate an excessive activity of the autonomic nervous system (SSA). Anxiety is a general but non-specific symptom which is a sign of emotional function. Pathological anxiety is usually a condition that goes beyond normal limits to a truly and maladaptive threat.²⁴ Anxiety is a feeling of excessive worry as if something bad will happen and a feeling of uncomfortable as if there is a big threat. A mother may feel fear of pain and physical danger that will arise during labor. Anxiety is a vague worry that spreads, which is associated with feelings of uncertainty and helplessness. During pregnancy, anxiety appears to be different and is defined as a syndrome that reflects concerns about the health and well-being of the baby, hospital experience and health (including own health and pregnancy continuity), concerns about childbirth and aftermath, and parenting or the role of the mother. From this study, it is proven that the mothers who participated in

smart mother classes in which they were trained well about coping skills both EFC and PFC can develop personal strategies to deal with the uncertainty that will be faced later during labor especially, pregnant women who have experienced late pregnancy. The final pregnancy of the mother focuses more dominantly on the situation that will soon be faced, namely childbirth. This condition may further put the mother in the tendency of anxiety. However, pregnant mothers who get SMC show a decrease in anxiety compared to SC. They may develop coping strategies as it is proven by the results of studies that prove mothers have better-coping abilities than those who do not get SMC. Furthermore, SMC puts the mother's ability to develop adaptive coping that refers to situations where there is a match between the control of stressful situations and the choice of strategy (i.e. emotion-focused versus problem-focused) to overcome. When people get a 'fit' between stressful conditions and coping strategies, they experience fewer psychological symptoms than when there are less appropriate conditions.²⁵

Efforts to overcome problems include problem-focused and emotion-focused strategies that are directed at the problem and on each other's emotions. Cognitive theory tries to regulate coping efforts. Although controlling emotions might facilitate efforts to solve or manage problems, it is also possible that solving or managing problems satisfactorily is one of the best ways to manage emotions.¹⁶ Coping efforts that are trained through classes of pregnant women are also proven to reduce stress levels in pregnant women compared to mothers who only get a standard class of pregnant women.¹⁴ The material provided gives mothers the mastery of coping skills during pregnancy and childbirth so that mothers have a strong confidence in facing the delivery. While the anxiety of pregnant women can increase the risk of labor such as significantly affecting the birth canal and the baby that will be born. The pregnant women express their anxiety during the pregnancy until right the birth process that will be faced. This anxiety expression triggers big stressors. Individual response to deal with stressors is in the form of an anxious feeling. The moments facing anxiety are determined by coping namely the orientation and intra-physical efforts to manage the environment, internal needs and conflicts regarding it.

The limitation of the study is that the study was not measured by the outcome of SMC such as birth outcome that might be useful to measure the impact of the SMC to the following birth.

CONCLUSION

Intervention of SMC is proven effective to increase coping ability scores significantly both before and after treatment in the SMC group rather than SC. Also, there is a significant difference in improving coping ability between the groups.

Intervention SMC shows that there is a significant decrease in anxiety scores in which SNC higher than the SC group. Moreover, there is also a significant difference in the reduction of anxiety scores between the groups.

Acknowledgments: The greatest gratitude goes to midwives' facilitators of SMC and SC in independent midwifery practice (IMP). Also, pregnant women as

participants who had involved in this research are gratefully acknowledged.

REFERENCES

- Ritter, C; Hobfoll, S.E; LAvin, J; Cameron, RP; Hulsizer M. Stress, psychosocial resources, and depressive symptomatology during pregnancy in low-income, inner-city women. *Heal Psychol.* 2000;19(6):576-585.
- Wenzel A. Anxiety in childbearing women: diagnosis and treatment. Published online 2011.
- Latendresse, G; Ruiz, R.J; Wong B. Psychological distress and SSRI use predict variation cytokines during pregnancy. *NIH Public Access.* 2013;18(9):1199-1216.
- Livingston IL, Otado JA, Warren C. Stress, Adverse pregnancy outcomes, and African-American Female. 2003;95(1).
- Hobel, C; Goldstein,A; Bart E. Psychosocial stress and pregnancy outcome. *Clin Obstet Gynecol.* 2008;51:333-348.
- Wakeel F, Wisk LE, Gee R, Chao SM WW. The Balance Between stress and personal capital during pregnancy and the relationship with adverse obstetric outcomes :fidings from the 2007 Los Angeles Mommy and baby (LAMB) Study. *NIH Public Access. Arch Womens Ment Heal.* 2013;18(9):1199-1216.
- Goodman J H, Guarino A, Chenausky K, Klein L, Prager J, Peterson R, Forget A FM. CALM Pregnancy: Results of a Pilot Study of Mindfulness-Based Cognitive Therapy for Perinatal Anxiety. *Arch Womens Ment Heal.* 2014;17(5):373-387.
- Kurki, T; Hiilesmaa V, Raitasalo, R; Mattila, H, Ylikorkala O. Depression and anxiety in early pregnancy and risk for preeclampsia. *Obstet Gynecol.* 2000; 95:487-490. [PubMed: 10725477]. *Obs Gynecol.* 2000;95(PubMed : 10725477):487-490.
- Arck P. Stress and pregnancy loss: Role of immune mediators, hormones, and neurotransmitters. *Am J Reprod Immunol.* 2001;46(PubMed : 11506075):117-123.
- Dole N, Savitz, DA; Siega-Riz, A.M; Hertz-Picciotto I, McMahon MJBP. Psychosocial factors and preterm birth among African American and white women in central North Carolina. *PubMed: 15284044]. Am J Public Health.* 2004;94(8):1358-1365.
- Messer, LC; Dole, N; Kaufman, JS, Savitz D. Pregnancy intendedness, maternal psychosocial factors and preterm birth. *Matern Child Health J.* 2005;9(4):403-412.
- Pakenham, KI; Smith A; Rattan S. Application of a stress and coping model to antenatal depressive symptomatology. *Psychol Heal Med.* 2007;12(3):266-277.
- Cheung W, Ip WY, Chan D. Maternal anxiety and feelings of control during labour: A study of Chinese first-time pregnant women. *Midwifery.* 2007;23(2):123-130.
- Runjati, Susanto H, Sawitri DR, Thaufik S. The effect of antenatal class plus coping skill training on the level of stress and childbirth self-efficacy. *Adv Sci Lett.* 2017;23(4). doi:10.1166/asl.2017.9125
- Lazarus RS FS. *Stress, Appraisal, and Coping.* Vol 23. spinger Publishing Company, Inc; 1984.
- Taylor SE. *Health Psychology.* Vol 53. Mc Graw-Hill Education; 2015.
- Huizink AC, de Medina PGR, Mulder EJH, Visser GH a, Buitelaar JK. Coping in normal pregnancy. *Ann Behav Med.* 2002;24(2):132-140.
- Weiten, W. & Lloyd MA. *Psychology Applied to Modern Life (9th Ed.).* 9th ed. Wadsworth Cengage Learning; 2008.
- Catherine A. Sanderson. *Health Psychology.* Vol 1.; 2013.
- Aldwin CM. *Stress, Coping, and Development: An Integrative Perspective,* 2nd Edition. 2nd editio. The Guilford Press; 2007.
- Guardino CM. Understanding pregnancy Anxiety. *Zero Three.* Published online 2014:12-21.
- Carver CS, Scheier MF, Weintraub JK. Assessing coping strategies: a theoretically based approach. *J Pers Soc Psychol.* 1989;56(2):267-283.
- Chesney, M.A; Neilands, T.B; Chambers, D.B; Taylor, J.M; Folkman S. A validity and reliability study of the coping self-efficacy scale. *Br J Helath Psychol.* 2006;15(10):1203-1214.
- Kaplan, H.I; SAdock B. *Sinopsis Psikiatri.* Jakarta: E GC. EGC; 2000.
- Park, CL; Folkman, S; Bostrom A. Appraisals of controllability and coping in caregivers and HIV+ men: testing the goodness-of-fit hypothesis. *J Consult Clin Psychol.* 2001;69(3):481-488.