The Effect of Implementing Prenatal Bounding Stimulation with Posters in Preventing High Risk Pregnancies

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Abstract. Human development begins before birth. The development of the baby is very dependent on the mother's loving response. Fetal stimulation is an effort made by parents in the form of stimulation of the fetus with the aim of improving the basic abilities of the fetus so that at birth it can grow and develop optimally. This type of research is a pre-experimental one group pretest-posttest design research. The results of the research on prenatal bounding stimulation with posters for the quality of attachment before being given the application were 41.6 and after being given the results were 47.2 and prenatal bounding stimulation for the intensity of preoccupation before being given the application was 28.6 and after being given the result was 31.7. The results obtained from the Wilcoxon test obtained a Z value of -5.477 and Asymp. Sig (2-tailed) 0.000 or the same as p-value < 0.05. The results of the bivariate analysis showed a Positive Rank or a positive difference between the pre-test and post-test of 30, meaning that as many as 30 pregnant women experienced an increase in prenatal bounding stimulation after being given the application. The mean rank or average increase in prenatal bounding stimulation is 15.5, while the number of positive ranks is 465. A Ties value of 9 means that the prenatal bounding stimulation score is the same between the pre-test and post-test. Conclusion: Prenatal bounding stimulation with posters has an effect on preventing high-risk pregnancies.

Key words: [Prenatal Bounding Stimulation, Prevention, of Risky Pregnancies]

INTRODUCTION

Human development begins not when he is born into the world, but begins before birth (Maziyatul, 2020). Normal baby development is very dependent on the mother's loving response. The relationship between mother and fetus has a significant influence on the baby and its future development (Lang.C., 2018). In carrying out interactions, parents have obstacles in terms of time and knowledge (Nuraina, 2021). Fetal stimulation is an effort made by parents in the form of stimulation. on the fetus with the aim of improving the basic abilities of the fetus so that at birth it can grow and develop optimally. Mothers who carry out fetal stimulation are mothers who have been provided with prenatal education. Prenatal education can increase maternal awareness and increase knowledge about pregnancy. The aim of prenatal education is to help parents become knowledgeable mothers and fathers, making them take an active role in maintaining health during pregnancy and birth and teaching techniques for handling pregnancy, childbirth and parenting. Therefore, prenatal education is important in improving maternal and infant health, and must be implemented more widely (Shie, Y et al, 2015). Maternal and fetal interactions can be carried out using several maternal and fetal stimulation intervention methods such as research (Güney, 2019) teaches mothers how to count fetal movements every day at home for 4 weeks, carrying out interaction actions with the fetus (stroking and talking to the fetus) within 90 minutes. In line with the era of digital development which makes human life easier, innovations in providing stimulation are also changing and becoming more diverse and efficient (Kiftiyah et al., 2017). Fetal stimulation education using video media needs to be carried out to increase the emotional closeness of mother and fetus (Nurul Afdila Fannia, 2023). There is an influence of prenatal attachment education on the attachment of mother and fetus in the Paiton Community Health Center working area (Mariani, 2020). Here the researchers want to provide the application of prenatal bounding stimulation with posters in preventing risky pregnancies in the Tugu sub-district area of Semarang where the largest population is women. The nature of a woman in the process of life is to become a mother, which means all women will experience pregnancy. This is where researchers are interested and want to conduct research in the Tugu sub-district, Semarang by providing the application of prenatal bounding stimulation with posters in preventing risky pregnancies.

METHODS

This type of research is pre-experimental research with a one group pretest-posttest design. Pre-experimental research is a form of experimental research that does not have a control group. The application of prenatal bounding stimulation with posters to pregnant women is measured before and after to prevent risky pregnancies. The population in this study were pregnant women in the Tugu Semarang sub-district with a population of 39. The sample in this study was pregnant women. The number of samples in this research was 39 samples. The sampling technique uses purposive sampling technique. The instruments used in this research were SOPs and check list sheets regarding prenatal bounding stimulation. A check list observation sheet for the application of prenatal bounding stimulation is given before and after the application of prenatal bounding stimulation to pregnant women. The data collection method applied in this research is using primary data obtained directly by researchers through pretest and posttest measurement activities to measure the results of observation sheets for pregnant women regarding the application of prenatal bounding stimulation in preventing risky pregnancies before and after receiving stimulation.

RESULTS AND DISCUSSION

The results were obtained from research on the effect of applying prenatal bounding stimulation with posters in preventing high risk pregnancies in the Tugu sub-district, Semarang.
Univariate Analysis

Table 1. Frequency distribution of characteristics of pregnant women respondents

Respondent Characteristics	F	%
Mother's Age		
< 20 (high risk)	5	13%
20-35 (normal)	20	51%
> 35 (high risk)	14	36%
Total	**39**	**100%**
Gestational age		
Trimester 2	16	41%
Trimester 3	13	33%
Total	**39**	**100%**
Education		
Elementary/Middle School	2	5%
Senior High School	24	62%
College	3	8%
Total	**39**	**100%**
Work		
Work	6	15%
Doesn't work	23	59%
Total	**39**	**100%**
Paritas		
Primipara	10	26%
Multipara	29	74%
Total	**39**	**100%**

Based on the characteristic frequency table above, the results obtained are the age characteristics of respondents aged < 20 years (high risk), there are 5 respondents (13%) and those aged 20 - 35 years

(Normal) there are 20 respondents (51%), the characteristics of the trimester respondents' gestational age 2 there were 16 respondents (41%) and in the 3rd trimester there were 13 respondents (33%), the educational characteristics of the respondents were SD - SMP there were 2 respondents (5%) and SMA there were 24 respondents (62%) and PT there were 3 respondents (8%), Job characteristics of respondents who work there are 6 respondents (15%) who do not work there are 23 respondents (59%). Characteristics of respondents based on parity of respondents with 10 (26%) primiparas and 29 (74%) multiparas.

The results of the research based on the characteristics of respondents, the largest age group of respondents, namely 20-35, was 20 (51%). Age 20 – 35 years is a good age for reproduction so it can reduce maternal and infant mortality and can reduce high risk pregnancies. This is in line with research (Aprilia, 2020) that the mother's age also affects the fetus. Mothers who become pregnant at risk are when they are teenagers (under 18 years) and when the mother has entered middle adulthood (over 35). Most babies born to teenage mothers experience premature and miscarriage. In middle-aged mothers, pregnancy can result in miscarriage, mental retardation in babies, and disease complications.

Characteristics of respondents based on gestational age were mostly in the second trimester, namely 16 (41%). Fetal stimulation techniques can have a positive impact on neonate behavior because they get used to it. Therefore, mothers are advised to carry out fetal stimulation during pregnancy. This technique can be started when the mother reaches 27 weeks of pregnancy (2nd Trimester). This time is the best time to carry out prenatal bounding stimulation so that a bond can be formed between mother and baby. (Mahboubeh Valiani, 2021)

Characteristics of respondents based on education, most respondents had a high school education, 24 (62%). Based on the results of research conducted by (Defi Yulita, 2020), it can be seen that mothers with a high level of education stimulate the fetus more in the womb, namely 21 people (55%), compared to mothers with a low education level, namely 1 person (10%) . It is best for a mother to have knowledge about child development and how to provide stimulation for its development. The influence of knowledge on children's development is very important, because mothers who have good knowledge will pay more attention to their children's development. On the other hand, if the mother does not pay attention to the child's development and does not provide stimulation for his development, the child may experience delays in his development. Based on the observations of educated mother researchers.

Highly educated mothers are more receptive to new ideas than low-educated mothers, so that all information from health workers and from other sources regarding providing fetal stimulation in the womb can be accepted and implemented as recommended (Suryana, 2016).

Characteristics of respondents based on work, the majority of respondents who did not work were 23 (59%). In carrying out interactions, parents have obstacles in terms of time and knowledge, working mothers experience limited time in carrying out stimulation because it has to be adjusted to the mother's work (Nuraina, 2021)

Characteristics of respondents based on parity, most respondents were multiparous mothers, 29 (74%). Mothers with multiparous parity stimulated the fetus more in the womb, namely 21 people (60%), compared to mothers with primiparous parity. The results of the Chi-square test showed a significant relationship between parity of pregnant women and fetal stimulation in the womb (p=0.001). The results of this study are almost the same as the results of research (Halimatussakdiah, 2015) which found that 24 people (72.7%) of multigravida parity underwent prenatal fetal stimulation.

Table 2. Distribution of respondents based on before and after being given stimulation Prenatal Bounding with posters in preventing risky pregnancies

Bounding Stimulation	**Before**	**After**
Quality of attachment (11 items)	41.6	47.2
Intensity of preoccupation (8 items)	28.6	31.7
Total	70.3	78.9

Based on the table above, the results of prenatal bounding stimulation for the quality of attachment before being given prenatal bounding stimulation were 41.6 and after being given the results were 47.2

and prenatal bounding stimulation for intensity of preoccupation before being given the application of prenatal bounding stimulation was 28.6 and after being given 31.7

This is in accordance with research (Pooja, 2017) that the application of prenatal bounding stimulation with posters can increase prenatal bounding stimulation in preventing risky pregnancies. Prenatal Bounding Stimulation consists of the quality of attachment and preoccupation interactions, which means hormones related to feelings of love, affection, good emotions, and attachment between humans. The mother's oxytocin hormone increases. Oxytocin levels are related to aspects of mental health conditions and bonding behavior. Mother and child bonding is a biochemical modulator through oxytocin which can be increased by quality interaction behavior through mother-child contact from the start, namely when the child is still in the womb (Glasser, 2016). The fetal stimulation carried out focuses on touching and auditory. Auditory stimulation is carried out by inviting the fetus to talk, reading fairy tales, and inviting the fetus to pray. This is in line with research conducted by(Harciare, 2021) that sound stimulation by communicating is a form of prenatal stimulation. By communicating with the mother to the fetus, the fetus can listen to what the mother says. Through communication, the fetus will increasingly recognize who the mother is. Emotional closeness between mother and fetus can be formed deeper through communication carried out early or in the womb. Stimulation of the fetus in the womb is done by talking, chatting, singing songs, reciting prayers, religious songs, while stroking the mother's stomach (Veryudha Eka P, 2019)

Based on research conducted by (Malm, 2016) states that mothers who frequently interact with the fetus will result in increased emotional closeness between the mother and the fetus. Interaction between the mother and the fetus can be carried out using several intervention methods to stimulate the mother and fetus, showing results in changes in the mother's psychological health and increased emotional closeness with the fetus (Güney, 2019)

Meanwhile, according to (Condon, 1993), two dimensions need to be met to increase the emotional closeness of parents and fetus, namely the dimension of the amount of time the parent spends with the fetus and the dimension of environmental support and the parent's psychological condition, so more effective and efficient innovation is needed to maximize intervention. One method that can be used to increase the emotional closeness of mother and fetus is by providing education to pregnant women. With health education, it is hoped that it can increase the knowledge and skills of pregnant women. Apart from that, providing education can motivate mothers to be involved in various activities carried out for the fetus ((Mariani, 2020)). There was a significant change before and after being given fetal stimulation education using video media on the emotional closeness of mother and fetus with an average emotional closeness in the experimental group of 65.65 and an average emotional closeness in the control group of 61.71 (p value = 0.019) (Nurul Afdila Fannia, 2023)

Bivariate Analysis

Table 3. Effect of applying prenatal bounding stimulation with internal posters prevention of high-risk pregnancies in the Tugu sub-district, Semarang

	Group	N	Mean Rank	Sum of Rank	ρ value	Z
Prenatal Bounding Stimulation	Negative rank	0	0.00	0.00	0,000	-5.477
	Positive rank	30	15.50	465.00		
	Ties	9				
	Total	39				

The results of the bivariate analysis test obtained a Positive Rank result or a positive difference between prenatal bounding stimulation for the pre test and post test of 30, meaning that 30 or all pregnant women experienced an increase in prenatal bounding stimulation after being given the application of prenatal bounding stimulation. The mean rank or average increase in prenatal bounding stimulation was 15.50, while the number of positive ranks was 465.00. There is a Ties value of 9, so there are 9 respondents with the same prenatal bounding stimulation score between the pre-test and post-test. The Wilcoxon test results obtained a ρ value of 0.000 < 0.05, which means that H0 is rejected or Ha is accepted, so there is an effect of applying prenatal bounding stimulation with posters in preventing high risk pregnancies in the Tugu sub-district, Semarang.

Children who have a good start in growth and development will grow into healthier adults, this is influenced by the interaction of genetic factors and environmental factors, so that later they will have a better life (Deki, 2015). The results of the study state that there are several factors that influence developmental delays children include a history of asphyxia, low birth weight babies, poor nutrition, no stimulation (Hikmah, 2016)

The results of this research are in accordance with research conducted by (Herlina, 2017) that bounding stimulation with media (such as posters, audio-visual videos, booklets, modules, etc.) has an effect on increasing prenatal bounding stimulation in preventing risky pregnancies because brain cells have been formed during pregnancy. . the number of brain cells at birth is around 60% while the new brain reaches 27%. Based on research results (Besse Darmita Yuana Putri, 2021) it is stated that providing health promotion in the form of animated videos is very influential in increasing pregnant women's knowledge about bounding attachment. Information using audio-visual or video media contains images that can be seen and sounds that can be heard. Tactile stimulation is beneficial for the mother and reduces stress levels in the mother as well, reducing stress can reduce the possibility of high risk in pregnant women (Marx, 2015).

Recent research entitled the effect of applying prenatal bounding stimulation with posters in preventing high-risk pregnancies has not previously been carried out on the same research, the difference with previous research is in the learning media. This research uses poster media in which there are pictures and explanations related to prenatal bounding stimulation so that it can help remind pregnant women and their husbands about carrying out prenatal bounding stimulation. Posters can be stuck on the walls of the house. This makes it easier for pregnant women and their husbands to apply prenatal bounding stimulation. Prenatal bounding stimulation is very beneficial in the growth and development of the fetus. Apart from that, it also increases the closeness and inner bond between mother and baby, automatically the mother becomes calmer and anxiety can be reduced so that the mother's quality of life becomes much better and can reduce the incidence of risky pregnancies.

CONCLUSION

The results obtained were the characteristics of respondents based on age < 20 years, there were 5 (13%) aged 20 - 35 years there were 20 (51%), gestational age in the second trimester there were 16 (41%), in the third trimester there were 13 (33%), elementary school education. – SMP 2 (5%) and SMA 24 (62%) and PT 3 (8%), Working jobs 6 (15%) not working 23 (59%), Primipara parity 10 (26%) and multipara 29 (74 %). The results of prenatal bounding stimulation with posters for the quality of attachment before being given prenatal bounding stimulation were 41.6 and after being given the results were 47.2 and prenatal bounding stimulation for intensity of preoccupation before being given the application of prenatal bounding stimulation was 28.6 and after being given 31.7. There is an increase in pre and post implementation of prenatal bounding stimulation in preventing risky pregnancies in pregnant women. Based on the results of the bivariate analysis, a Positive Rank result or a positive difference between prenatal bounding stimulation for the pre test and post test was 30, meaning that 30 or all pregnant women experienced an increase in prenatal bounding stimulation after being given the application of prenatal bounding stimulation. The mean rank or average increase in prenatal bounding stimulation was 15.50, while the number of positive ranks was 465.00. There is a Ties value of 9, so there are 9 respondents with the same prenatal bounding stimulation score between the pre-test and post-test. The results obtained from the Wilcoxon test obtained a Z value of -5.477 and Asymp. Sig (2-tailed) 0.000 or the same as p-value < 0.05. From these results it can be concluded that there is an effect of applying prenatal bounding stimulation with posters in preventing high-risk pregnancies

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