Effectiveness of JSJ (*Jin Shin Jyutsu*) Massage and Acupressure at Points of LR 3 (*Taichong*) and LR 2 (*Xingjiang*) in Reducing Blood Pressure of Pregnant Mothers with Preeclampsia

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Abstract: Pregnancy with preeclampsia is high-risk that needs to be monitored intensively in order not to become eclampsia. Massage and acupressure are non-pharmacological techniques to help it. The aims of this research was to identify the effectiveness of JSJ (*Jin Shin Jyutsu*) massage and acupressure at the point of LR3 (*Taichong*) and LR2 (*Xingjiang*) in reducing blood pressure of pregnant mothers with preeclampsia. The method was a quasy experiment with non-equivalent control group approach. The samples were 30 pregnant mothers consisting 15 treatments and 15 controls chosen by consecutive sampling technique. The treatment group was given intervention for 15-30 minutes. Blood pressure measurement devices were stethoscope and sphygmomanometer. The analysis used T-paired and Independent T-test. The result of T-paired test in the intervention group obtained p $(0,000) < \alpha$ (0.05) for the systole, p $(0,003) < \alpha$ (0.05) for the diastole. The independent test result of T-test after intervention showed p $(0,009) < \alpha$ (0.05) for the systole, p $(0,004) < \alpha$ (0.05) for the diastole. It meant JSJ massage and acupressure at the point of LR3 and LR2 reduced blood pressure. This research found that those techniques were effective and recommended midwives to apply them as the non-pharmacological therapy in reducing blood pressure.

1 INTRODUCTION

Preeclampsia is a set of symptoms in pregnant mothers in the form of high blood pressure, excessive body swelling, and the presence of protein in the urine (Varney, 2006). Other symptoms are severe headache, visual impairment (such as blurred vision and black spots), and excessive weight gain in a short time (Wiknjosastro, 2007). However, high blood pressure (which is usually above 130/90 and normally is 120/80) is called preeclampsia when the gestational age is 20 weeks up (Bobak, 2011). Preeclampsia is a major cause of maternal mortality (15-20% in developing countries) and morbidity (acute and long-term), perinatal deaths, preterm birth, and intrauterine growth restriction (Sibai, 2005). Based on the Indonesian Demographic and Health Survey (IDHS) in 2012, the maternal mortality rate in Indonesia was still high at 359 per 100,000 live births. This figure was still quite far compared to the 2015 Millennium Development Goal's target of 102 per 100,000 live births (BKKBN, 2013).

A high-risk pregnancy that is not well-managed can also cause maternal death. The high risk of high-risk pregnancy can be due to limited knowledge about pre-conception and pregnancy risk-related medical conditions, the desire to have pregnancy despite of knowing the risk of pregnancy, and the lack of control to avoid unwanted pregnancy (Chuang, 2010). The micro-impact of preeclampsia is an increasing high risk in pregnant mothers, especially increasing eclampsia and maternal morbidity. The macro impact of preeclampsia, if it is not addressed properly, will increase the MMR which is an indicator of national health. An increase in MMR means low levels of health (Norwitz, 2008).

Many challenges exist in the prediction, prevention, and management of preeclampsia. Promising prophylactic measures, such as low-dose aspirin and calcium supplementation, need further evidence before recommendation for use in developing countries. The treatment remains prenatal care, timely diagnosis, proper management, and timely delivery (Osungbade, 2011). The

treatment of preeclampsia in pregnant mothers can be pharmacological and non pharmacology. The pharmacological way is by administering drugs that can lower blood pressure. While non-pharmacological ways are with massage, relaxation techniques, and acupressure which at some point it can also help to keep blood pressure from increasing.

Acupressure is one of the non-pharmacological techniques in lowering blood pressure. Acupressure, which is also called acupuncture without needles or acupuncture massage, uses pressure, massage, and sorting along the meridian of body or energy flow lines, so it is relatively easier to do than acupuncture (Sukanta, 2008). Acupressure is a long-standing method, but in the application on pregnancy and childbirth is a new development in midwifery care that is expected to reach the maternal affection (Mehta, 2002). Acupressure method at the point of LR 3 (*Taichong*) and LR2 (*Xingjiang*) had considerable systems and therapeutic points, including acupressure associated with pregnancy and childbirth. So, if acupressure is to be done at all points, this method will be quite difficult to implement by midwives or family of patients as a routine care in pregnant mothers, but basically every point on the method of acupressure has certain functions according to the physical needs of patients (Sukanta, 2010).

In addition to acupressure, JSJ (*Jin Shin Jyutsu*) massage is one useful massage therapies used to reduce and maintain the stability of blood pressure in pregnant mothers. So that, in a mother with preeclampsia the blood pressure happens and avoids eclampsia. Therefore, a proactive prevention is needed from the beginning of pregnancy, during pregnancy, and until the end of delivery conducted jointly by health workers, village midwives with pregnant mothers, husbands, families and communities (Lee, 2012). The aims of this study was to identify the effectiveness of JSJ (*Jin Shin Jyutsu*) massage and acupressure at the point of LR3 (*Taichong*) and LR2 (*Xingjiang*) in reducing blood pressure of pregnant mothers with preeclampsia.

2 METHOD

2.1 Research Design

This research was a quantitative research with a quasy experiment design with non-equivalent control-group approach. In this study the researchers wanted to see the effectiveness of JSJ (*Jin Shin*

Jyutsu) and Acupressure Concentrations at LR 3 Point (*Taichong*) and LR 2 (*Xingjiang*) on blood pressure drop in pregnant mothers with preeclampsia by comparing the experimental group and the control group.

2.2 Research Sample

Sampling technique used non-probability sampling with consecutive sampling. The sample size of 30 respondents was divided into two parts, 15 respondents were in intervention group and 15 respondents were in control group.

2.3 Data analysis

The data were analyzed by T-paired and independent T-test with 95% of significance level.

3 RESULTS

From the data ccollected, it was obtained 30 respondents, 15 respondents were in intervention group and 15 respondents were in control group. Based on the assessment conducted on the control and treatment groups, data of the characteristics of the respondents including maternal age, gestational age, and gravida presented in Table 1.

Table 1: Characteristics of respondents research effectivity of JSJ (Jin Shin Jyutsu) massage and acupressure at point LR 3 (Taichong), LR 2 (Xingjiang) on decreasing blood pressure in pre-eclampsia pregnant women.

Characteristics	Treatment Group	Control Group	Frequency (f)	Percentage (%)
Age				
< 20 years	1	0	1	3
20-35 years	10	11	21	70
> 35 years	4	4	8	27
Total	15	15	30	100
Pregnancy age				
Trimester II	1	0	1	3
Trimester III	14	15	29	97
Total	15	15	30	100
Gravida				
Primigravida	4	4	8	27
Multigravida	10	10	20	67
Grandemulti Gravida	1	1	2	6
Total	15	15	30	100

Table 2: Frequency distribution of respondent's blood pressure before JSJ (*Jin Shin Jyutsu*) massage and acupressure at LR 3 (*Taichong*) and LR 2 (*Xingjiang*)

Respondent's Blood Pressure Before Intervention				
Group	Blood Pressure	n	Mean (mmHg)	SD
Intervention	Systole	15	148	8,619
	Diastole		92,67	11,629
Control	Systole	15	148	13,202
	Diastole		96,67	10,465

Table 3. Frequency distribution of respondent's blood pressure after being given JSJ (*Jin Shin Jyutsu*) massage and acupressure at LR 3 (*Taichong*), LR 2 (*Xingjiang*)

Respondent's Blood Pressure After Intervention				
Group	Group	Group	Group	Group
Intervention	Systole	15	136,67	8,165
	Diastole		86,00	8,281
Control	Systole	15	148,00	13,202
	Diastole		96,67	10,465

4 DISCUSSION

Age is one of the physiological factors that can directly affect the process of pregnancy. Based on the data in Table 1, it can be seen that from 30 respondents, most of them, in the age range of 20-35 years, were as many as 21 respondents (70%), which are the age of productive age and the right time to conceive and give birth. The preeclampsia rate in this research was largely unaffected by maternal age as explained by Simmons (2011) that risk factors of hypertension in pregnancy were primigravida, twin pregnancy, diabetes, previous hypertension, distant pregnancy interval, family history of preeclampsia, molahidatidosa, and blood clotting disorders. The common mean ages found to be affected for preeclampsia with a trend towards increasing severity with younger age population (Vata, 2015).

On the characteristics of gestational age, it was obtained the result of gestational age in the second trimester was 3% and in the third trimester was 97%. The age of pregnancy was 100% over 20 weeks. Dekker (1999) divided hypertension in pregnancy into several classifications and in all of these classifications this diagnosis of hypertension in pregnancy is established at gestational > 20 weeks.

The results showed that most mothers with hypertension in pregnancy were 8 (27%) respondents of primigravida, 20 (67%) respondents of multigravida, and 2 (6%) respondents of grandemultigravida. Most respondents had preeclampsia in the first pregnancy. This was because, in the first pregnancy, a mother had a greater risk compared to the second pregnancy. Self-monitoring of Blood Pressure made them more aware of the risks of hypertension and preeclampsia (Hinton, 2017).

The result of statistical test in the intervention group using T-Paired Test obtained p value (0.000) <0.05 for measurement of systolic blood pressure, and p value (0,003) <0.05 for measurement of diastolic blood pressure. This meant that there were masks of JSJ (*Jin Shin Jyutsu*) and acupressure at LR3 (*Taichong*) and LR 2 (*Xingjiang)* points on the blood decline. Independent T-Test statistic between intervention group and control group after treatment was obtained p value (0.009) <0.05 for systolic blood pressure, while p value (0,004) <0.05 for diastolic blood pressure. This proved that JSJ (*Jin Shin Jyutsu*) massage therapy and acupressure at the point of LR3 (*Taichong*) and LR 2 (*Xingjiang*) were effective in lowering blood pressure in pregnant mothers with preeclampsia.

The results of this research were in line with Adam's research (2011) which revealed that acupressure stimulation could stimulate mast cells to release histamine as a mediator of the vasodilation of blood vessels, resulting in an increase of blood circulation that makes the body more relaxed and ultimately can lower blood pressure.

The determination of blood pressure is believed by researchers as the effect of the intervention. Acupressure is a treatment of Chinese origin (Traditional Chinese Medicine) commonly referred to as acupuncture massage that is massage method at acupuncture points (acupoints) in human body without using needle (Sukanta, 2008).

According to Sukanta (2010), acupressure is used to provide stimulus or stimulation at points of meridians of body by using fingers that aims to affect certain organs by activating the flow of energy (qi) body. In this research, the point intervened is the Point of Lr 2 (*Xingjian*) and Point of Lr 3 (*Taichong*). The stimulus at those points will stimulate the sensory nerve cells around the acupressure points then forward the spinal cords, mesensefalon and pituitary complex of the hypothalamus which all three are activated for releasing endorphin hormone that can provide a sense of calm and comfort (Saputara&Sudirman, 2009). The relaxation conditions will affect the changes in blood pressure of elderly. This is in line with the results of research Tsay, Cho, Chen (2004) which stated that acupressure is effective for calm the mood, reduce fatigue and can lower blood pressure.

A conservative approach to the management of early-onset preeclampsia results in a good obstetric outcome for the majority of fetus but this must be balanced against the significant risk of morbidity to the mothers (Murphy, 2000).

5 CONCLUSION

JSJ (*Jin Shin Jyutsu*) massage and acupressure at 3 Points of LR (Taichong) and LR 2 (Xingjiang) were effective in reducing blood pressure of pregnant mothers with preeclampsia and recommended midwives to apply these techniques as non-pharmacological therapy to reduce blood pressure.

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