



Effect of Meditation as a Behavioral Medicine on Blood Pressure of Pregnant Women

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ABSTRACT

Meditation is found effective in having positive outcomes in extensive blood pressure related studies of national and international origin. The present research aims at determining effectiveness of meditation as a behavioural medicine in blood pressure of pregnant women. This is a longitudinal study with purposive sampling. The study was carried on a sample size of sixty pregnant women. There were two groups: experimental and control. Women in their first and second trimester till twenty weeks were included for the study. The age group was in the range of twenty years to thirty five years. Meditation intervention was given to the experimental group. Results of experimental group was compared with the controlled group. Meditation is found to be effective as a Behavioral Medicine in optimizing Blood Pressure among pregnant women.

KEYWORDS: Behavioral medicine, pregnancy, meditation, blood pressure.

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I. INTRODUCTION

National Health Portal of India [8] considers Preeclampsia as the most prevalent hypertensive disorder among pregnant women. It is highly rated morbidity, perinatal mortality¹ and maternal mortality. Hypertensive disorders those are pregnancy specific include chronic hypertension, gestational hypertension and eclampsia.

Preeclampsia counts to happen in 3- 5% of pregnant women and total hypertensive disorder affects around 10 % pregnancies around the globe. In India this percentage reportedly ranges from 8 -10% in cases of preeclampsia.

Eclampsia and HELLP² syndrome are serious preeclampsia complications [8].

Chronic high blood pressure in pregnant mothers is considered as an important factor along with others in pre- term birth [14]. The number of pre- term birth is sadly the highest in India (i.e., 3519100) leaving other developing countries behind (Blencowe, Cousens, Oestergaard, Chou, Moller, Narwal, & Lawn, 2012 as cited in [14]).

Major number of the studies are done on hypertension related to pregnancy and medical books also emphasize on hypertension as it an obvious cause of concern in pregnancy.

Behavioral medicine didactic model like relaxation response training, cognitive restructuring, awareness training and mind body approach have been found efficacious in reducing physical symptoms with psychosocial components e.g. sleep disorder, malaise, headache, pregnancy hypertension [2]. Lehman and Benson (1982) concluded that techniques of relaxation meditation, regular exercise, reduced salt intake and weight loss sustained lowering of high BP.

In the present study the effect of Blessings Meditation is seen on blood pressure of pregnant women. Blessings meditation composed of instructions for the health and happiness of the mother and the foetus and Naad yoga (instrumental music) formed the base of the meditation.

¹Death of the neonate or fetus.

² HELLP- Hemolysis, elevated liver enzymes, and low platelet count. A group of symptoms is known as syndrome. HELLP syndrome is a triad of symptoms stated above and is a serious pregnancy complication (Stone, 1998 as cited in [10]).

II. OBJECTIVE:

To study the effect of Blessings Meditation (as Behavioral Medicine) on Blood Pressure of Pregnant Women.

III. HYPOTHESIS

H_a- There would be a significant positive effect of meditation on Blood Pressure of pregnant women.

IV. VARIABLES

Following independent, dependent and control research variables were taken in the present study:

Table: Research variables description.

<i>Independent Variable:</i>	Blessings Meditation (as Behavioral Medicine).
<i>Dependent Variables:</i>	Blood pressure
<i>Controlled Variables:</i>	Gestation age (>= 20 weeks) and Chronological age (20-35).

V. Sample Demographics-

Characteristics		n/60
Age (years)	20-25	18
	26-30	27
	31-35	15
Educational status	Literate	6
	Elementary	8
	High school	11
	University	35
Family Type	Nuclear	32
	Joint	28
Pregnancy weeks		
	2 - 4 weeks	10
	5 - 12 weeks	36
	13 - 20 weeks	14

VI. DESCRIPTION OF ASSESSMENT TOOL:

Digital Blood Pressure Monitor was used to measure blood pressure.

VII. PROCEDURE:

The longitudinal research design was implied in the present study.

Table: Longitudinal research design. Where G₁- Experimental group 1; G₂- Control group 2; X- intervention; DV- dependent variables; O- observation; M- months; W- weeks; D- days; BP- Blood Pressure of pregnant women.

Groups	Intervention	DV	O x W/ D x M	Total O
G1	X	BP	O x 4 weeks x 3 months	12
G2	-	BP	O x 4 weeks x 3 months	12

VIII. MEDITATION INTERVENTION:

Particulars of the program:

Table: Intervention program.

Duration:	Inclusion Criteria:
1 session per week for 3 months. Total 12 sessions	Pregnant Women
Meditation audio was provided to pregnant women for daily practice at home. Group sessions were planned per week for effective follow up. Self-reported health records were kept.	

IX. RESULT:

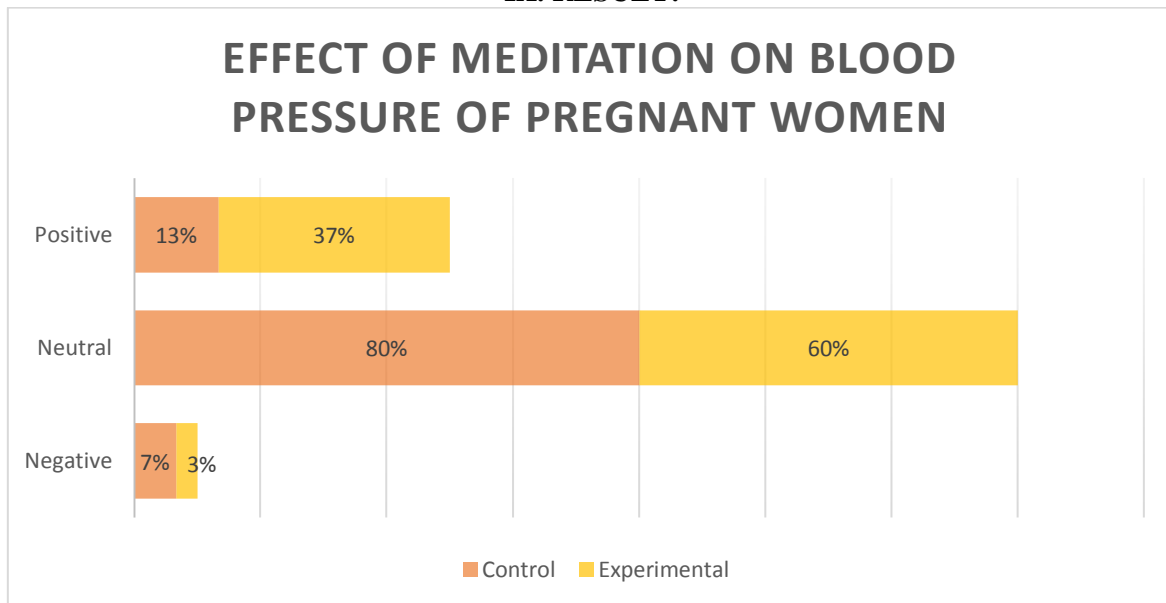


Figure: Effect of meditation on Blood Pressure of pregnant women. Negative = BP turned less than or more than the normal range i.e. > 90/60 mmHg - <120/80 mmHg over the course of 12 weeks; Neutral= No significant change in BP over the course of 12 weeks; Positive= BP turned to normal range over the course of 12 weeks.

Table: Wilcoxon test between Control and Experimental Groups with respect to Blood Pressure. Significant at * $p < 0.05$.

Variables	W-value	p-value
Control Group	561*	0.04137
Experimental Group		

The above table shows that there is a significant positive effect of meditation on blood pressure of pregnant women. The alternate hypothesis was accepted at 95 percent of significance level. The figure above shows that in experimental group 11 women benefited while in control group only 4 women get positive difference. 80 percent and 60 percent women in the control and experimental group respectively did not show any significant changes in BP. 7 percent and 3 percent had either high or low BP.

X. DISCUSSION:

The alternate hypothesis is accepted as there is a positive effect of blessings meditation on BP of Pregnant women. The alternate hypothesis is accepted at 0.05 level of significance.

Outside the meditative state also the meditator feels physiological de-arousal [13] that kept the mothers to be in a physically and mentally sound state.

Any major life event, negative or positive, that need people to adjust, change or adapt their lifestyles would result in stress [3]. In Social Readjustment and Rating Scale (SRRS) pregnancy is taken as a major life event. Pascoe et al. [9] had admired meditation for stress reduction, it helped pregnant women to deal with the stressors in a more effective way as pregnancy stressors are also a major underlying cause of BP fluctuations.

Taylor et al [11] in their research found that mental health improved, anxiety and depressive symptoms were reduced by mindfulness meditation and biofeedback. Guided meditation provided a psychological support in easing the anxieties related to pregnancy that women had about health of baby and their own health as the blessings meditation included the positive affirmations for the same.

In a single case study of a 49 year old pregnant women with twin pregnancy, meditation and pranayama were found to reduce hypertension when medical treatment were unable to control the same. On two time practice of meditation and pranayama the antihypertensive drugs were reduced and then stopped [5].

In the present research subjects were advised to perform meditation at the same time daily to maintain the compliance and make meditation their habit. This gave more positive results.

Macdonald- Wallis, Silverwood, Fraser, Nelson, Trilling, Lawlor and Stavola [4] developed a reference range of BP for pregnant women in their prospective cohort study. 112.1 mmHg and 65.4 mmHg systolic and

diastolic blood pressure was the mean reference for 12 weeks of pregnancy and at 37 weeks 116.0- 70.0 mmHg was the reference range. Stratified ranges were lower for smokers and higher for women with pre-pregnancy high BMI. In multiparous women reference ranges of blood pressure were 1-2 mmHg lower throughout pregnancy. Vital sign measurement across the lifespan – 1st Canadian edition [12] quoted pregnancy, medication, diurnal rhythm, emotions, stress, exercise, ethnicity, age, weight, sex, disease condition and medication as factors that determine blood pressure. Blood pressure was found to vary during the whole course of pregnancy, the first phase being the decreasing phase until mid-pregnancy due to dilation of blood vessels as an effect of increased progesterone peripheral vascular resistance is decreased. It becomes normal in the end term of pregnancy.

In the present study, it was noticed that there was a pattern of Blood Pressure among pregnant women as in the initial phase BP lowers down due to the probable increased needs of the body and hormonal alterations. In the middle phase it stays normal and in the final trimester it raises to meet the increased needs of growing fetus. These are the observational findings and could be more specifically tested.

Mehta, Kumar, Chawla, Sachdeva and Mahopatra[7] in a study of 931 Indian pregnant women found that 6.9% i.e., 64 research participants were hypertensive.

Männistö, Mendola, Vääräsmäki, Järvelin, Hartikainen, Pouta and Suvanto [6] indicated that elevated blood pressure increases the risk of diabetes mellitus, cardiovascular diseases like ischemic stroke, heart failure, myocardial infarcts, ischemic heart disease, and chronic kidney disease among pregnant women. [1] Hypertensive women were found prone to developing preeclampsia with related premature delivery and renal failure or having stroke.

On the other hand low blood pressure comparatively does not found to have fatal outcomes if confounding variables are controlled those women with low blood pressure have, like they are lighter, shorter, poorer, younger, leaner, they gain less weight and are generally a minority [15]. In the present study positive results are observed in both elevated or higher BP (120–139 / 80-89) and low BP (less than 90/60) readings as they turned towards normal ranges (less than 120/80) as a result of blessings meditation.

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