

Effectiveness of Swedish Massage Therapy on Stress and Blood Pressure Among Patients with Hypertension

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Abstract: Hypertension is a major public health problem in the world because of its high frequency and concomitant risk of cardiovascular and kidney disease. Among the chronic diseases in India, the most prevalent one is Hypertension. The American Heart Association (2013) estimated that In India (2013) about 972 million people suffer from hypertension. It is anticipated that the number of people with hypertension will increase in future posing major issues to the health and quality of life of people. The present study was conducted to determine the effectiveness of Swedish massage therapy on stress and blood pressure among patients with hypertension in OPD. The research design adopted was randomized controlled trial. The tool used for the study was perceived stress assessment scale to assess the stress and mercury sphygmomanometer to measure the blood pressure. Swedish massage therapy (SMT) was given to patients in the study group twice with 15 days interval. Blood pressure and stress level were assessed before and after each intervention. The study group showed significant reduction of stress level from (18.13) to (13.80) ($p < 0.01$) and in the control group (18.33) to (21.53). The mean value of systolic blood pressure (128.67) and diastolic blood pressure (85.8) in the study group during posttest-II showed a significant reduction than the control group in which the mean value of systolic blood pressure (140.8) and diastolic blood pressure (92.2) remained high. Hence, Swedish massage therapy was found to be effective in reducing the level of stress and blood pressure among patients with hypertension.

Keywords: Swedish massage therapy, blood pressure, stress and patient with hypertension.

1. Introduction

Hypertension is a silent disease as it is generally asymptomatic during its clinical course. Because of its outward asymptomatic nature and hidden ill effects, World Health Organization (WHO) named it as a silent killer.

Blood pressure is the force of the blood against the walls of the arteries. Sustained elevation of blood pressure is termed as hypertension. In adults, hypertension exists when systolic blood pressure exceeds above 140 mm of Hg or diastolic blood pressure measures above 90 mm of Hg.

Among the chronic diseases in India, the most prevalent one is Hypertension. In India (2013) about 972 million people suffer from hypertension. The prevalence study on hypertension revealed that hypertension ranges between 20-40% in urban adults and 12-17% in rural adults. It is anticipated that the number of people with hypertension will increase from 118 million in 2000 to 214 million in 2025, with nearly equal number of men and women. -American Heart Association (2013)

Hypertension and stress are the most prevalent risk factors in cardiovascular disease, causing impact on quality of life of patients

Stress is considered as a major causative factor for hypertension. The current societal scenario is highly demanding and competitive which in turn causes stress among individuals. The acute or chronic exposure to stress

results in alterations in blood pressure leading to damages in major organs. Thus, hypertension makes people five times more prone to stroke, three times more likely to have heart attacks and two or three times likely to experience heart failure.

“Massage”, a word derived from French which means “a friction of kneading”. In Arabic “Massa” means to touch, feel & handle”. It is a management and practice of manipulation of the soft body tissue with medical, therapeutic and in some cases emotional reasons. There are many beneficial effects of massage including alleviation of pain, declination of stress and also relief from many chronic diseases.

Swedish massage therapy (SMT) is a complementary treatment that provides relaxation and therefore able to reduce blood pressure caused by stress

2. Literature Survey

The review of literature is grouped under the following headings:

Prevalence of hypertension

Stress and hypertension

Effect of Swedish massage on stress and hypertension

3. Methods and Approach

The research design adopted for this study was randomized controlled trial. The study was conducted in the

hypertension OPD in a tertiary care hospital, Chennai. The population selected for the study was patients diagnosed with hypertension attending the hypertension OPD.

The objectives of the study were to

- 1) Determine the effectiveness of Swedish massage therapy on stress among patients with hypertension
- 2) Find out the effectiveness of Swedish massage therapy on blood pressure among patients with hypertension.
- 3) Associate the stress and blood pressure with selected background variables.

The sample consists of patients who fulfilled the inclusion criteria and diagnosed to have hypertension.

The sample size was 30 with 15 patients in the study and 15 patients in the control group.

Tool consisted of background variables like, gender, age, marital status, education, occupation, total family income, residence, BMI, blood pressure classification, co- morbidity, name of anti hypertensive agent.

Perceived stress assessment scale was used to quantify the patient level of stress and mercury sphygmomanometer was utilized to measure the blood pressure.

Before the implementation of Swedish massage therapy, the patient is requested to lie prone position with only the neck, back and lower limbs are exposed. The massage techniques used as combination of knead/hacking and long strokes with medium pressure on the neck, back and lower limbs, with the use of olive oil for 20 minutes two times in a month. A pretest was conducted to identify background variables of the patients and their level of stress and blood pressure.

4. Results and Discussion

Data were analysed by using descriptive and inferential statistics.

Descriptive statistics- Frequency, percentage, mean and standard deviation were used to describe the background variables, level of stress, systolic and diastolic blood pressure of patients with hypertension.

Inferential Statistics – Paired „t“ test was used to find out the changes in the level of stress and blood pressure within the groups after Swedish massage therapy and Independent „t“ test was used to compare the effectiveness of Swedish massage therapy on stress and blood pressure.

The findings showed that 60% of the patients in the study group had moderate stress in the pretest I and 53.3 % of them had a low level of stress during posttest I. 66.7% of the patients in the study group had moderate stress in the pretest II and 53.3% patients had low stress in the posttest II. (Table1). Figure 1 shows that after Swedish massage therapy there was a statistically significant difference in the mean stress level at $p < 0.001$. With related to systolic blood pressure 60% of the patients in the study group had hypertension stage I in the pretest I and 53.3% of them had hypertension stage I in the posttest I. Pretest II 60% of the

patients in the study group had hypertension stage I and 20% of the patients had stage I hypertension in the posttest II. (Table2). Figure 2 shows that after Swedish massage therapy there was a statistically significant difference in the posttest mean scores systolic blood pressure of the study and control group at $p < 0.001$ level.

Regard to diastolic blood pressure 66.7% of the patients had hypertension stage I in the pretest I and in the posttest I it was reduced to 60%. In pretest II 60% of patients had hypertension stage I and in the posttest II it was reduced to 20 %.(Table 3). Figure 3 depicts that there was a statistically significant difference in the posttest mean scores diastolic blood pressure of the study and control group at $p < 0.001$ level.

Table 1: Percentage distribution of level of stress among patients with hypertension in the study and control groups (N=30).

Duration of the study	Level of stress	Study group (n=15)		Control group (n=15)		χ^2 and p value
		No.	%	No.	%	
Pretest I	Low	06	40	03	20	1.429
	Moderate	09	60	12	80	0.232
	High	—	—	—	—	(NS)
Posttest I	Low	08	53.3	05	33.3	1.222
	Moderate	07	46.7	10	66.7	0.269
	High	—	—	—	—	(NS)
Pretest II	Low	05	33.3	02	13.3	1.677
	Moderate	10	66.7	13	86.7	0.190
	High	—	—	—	—	(NS)
Posttest II	Low	08	53.3	01	06.7	7.778
	Moderate	07	46.7	14	93.3	0.003**
	High	—	—	—	—	

Table 2: Percentage distribution of systolic blood pressure among patients with hypertension in the study and control groups (N=30).

Duration of the study	Blood pressure	Study group (n=15)		Control group (n=15)		χ^2 and p value
		No.	%	No.	%	
Pretest I	Normal	—	—	—	—	0.600 0.439 (NS)
	Pre hypertension	06	40.0	04	26.7	
	Hypertension stage I	09	60.0	11	73.3	
	Hypertension stage II	—	—	—	—	
Posttest I	Normal	—	—	—	—	0.556 0.456 (NS)
	Pre hypertension	07	46.7	05	33.3	
	Hypertension stage I	08	53.3	10	66.7	
	Hypertension stage II	—	—	—	—	
Pretest II	Normal	—	—	—	—	0.600 0.439 (NS)
	Pre hypertension	06	40.0	04	26.7	
	Hypertension stage I	09	60.0	11	73.3	
	Hypertension stage II	—	—	—	—	
Posttest II	Normal	—	—	—	—	10.851 0.000 ***
	Pre hypertension	12	80.0	03	20.0	
	Hypertension stage I	03	20.0	12	80.0	
	Hypertension stage II	—	—	—	—	

Table 3: Percentage distribution of diastolic blood pressure among patients with hypertension in the study and control groups (N=30).

Duration of the study	Diastolic Blood pressure	Study group (n=15)		Control group (n=15)		χ^2 and p value
		No.	%	No.	%	
Pretest I	Normal	—	—	—	—	0.682 0.407 (NS)
	Pre hypertension	05	33.3	3	20	
	Hypertension stage I	10	66.7	12	80	
	Hypertension stage II	—	—	—	—	
Posttest I	Normal	—	—	—	—	1.429 0.02*
	Pre hypertension	6	40	03	20	
	Hypertension stage I	9	60	12	80	
	Hypertension stage II	—	—	—	—	
Pretest II	Normal	—	—	—	—	0.600 0.439 (NS)
	Pre hypertension	6	40	04	26.6	
	Hypertension stage I	9	60	11	73.4	
	Hypertension stage II	—	—	—	—	
Posttest II	Normal	—	—	—	—	13.393 0.000***
	Pre hypertension	12	80	02	13.3	
	Hypertension stage I	03	20	13	86.7	
	Hypertension stage II	—	—	—	—	

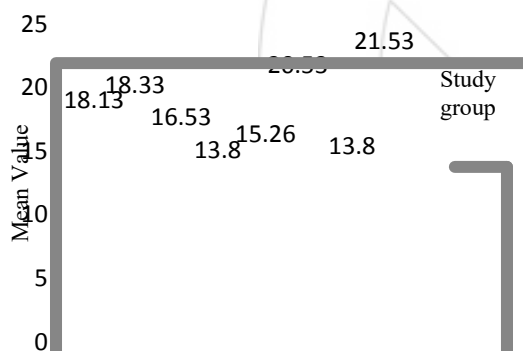


Fig 1 Comparison of mean score of stress among patients with...

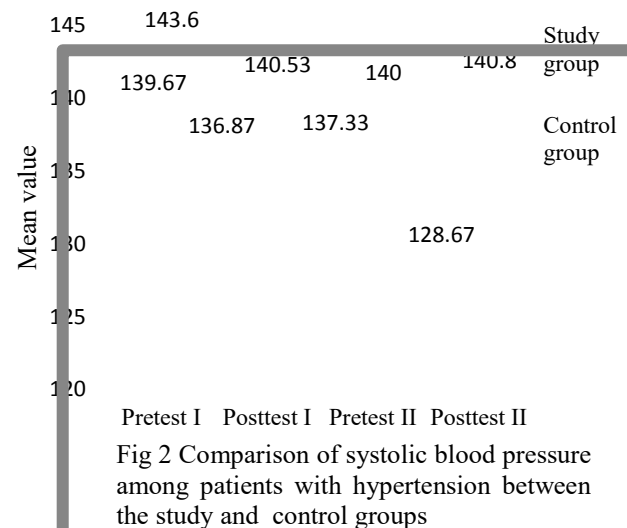


Fig 2 Comparison of systolic blood pressure among patients with hypertension between the study and control groups

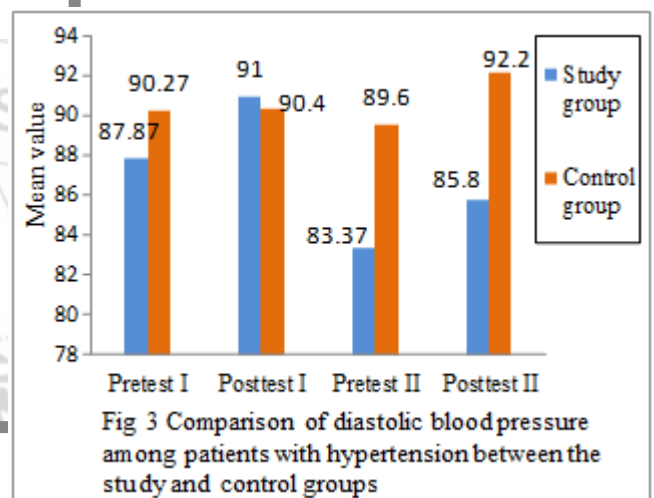


Fig 3 Comparison of diastolic blood pressure among patients with hypertension between the study and control groups

5. Conclusion

The results related to the effectiveness of Swedish massage therapy on stress showed that mean scores of perceived stress during posttest I among patients with hypertension in the study and control groups were 16.53 and 13.80 respectively and posttest II the mean values were 13.80 and 21.53. This showed that the stress mean score decreased among the study group than in the control group which were statistically significant at $p < 0.01$.

The systolic blood pressure mean score was reduced in the study group from 139.67 to 136.87 and in the control group from 143.60 to 140.53, which was statistically significant at $p < 0.01$ during posttest I. During posttest II, the mean score decreased in the study group from 137.33 to 128.67 whereas in the control group it is increased from 140.00 to 140.80, which was statistically significant at $p < 0.001$.

The diastolic blood pressure mean score in the study group increased from 87.87 to 91.00 during posttest I and in the control group it increased from 90.27 to 90.40, which was not statistically significant. During posttest II, mean score in the study group increased from 83.37 to 85.80. In the control group it increased from 89.60 to 92.20, which was statistically significant at $p < 0.001$.

6. Future Scope

Swedish massage therapy helps the patients in reducing stress and hypertension. It is simple and an effective technique known to reduce stress and hypertension. The study can be replicated on a large sample to enhance generalization of the results. The study concluded that the Swedish Massage Therapy was an effective method to reduce the stress and blood pressure among patients with hypertension.

The limitations identified were

- The duration of the intervention was limited to two days.
- Both the pilot study and main study were conducted in the same settings.

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