

The Effect of *Mudra Therapy (Apana Vayu Mudra)* on Level of Blood Pressure among Hypertension Clients

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ABSTRACT

Mudra Therapy has the physiological effect of relaxing the muscles surround the small blood vessels which allows the blood to flow more easily and it relaxes the blood vessels and leads to an increase in blood flow and a lower pressure. This study was undertaken to evaluate the effectiveness of Mudra Therapy (Apana Vayu Mudra) on level of blood pressure among hypertensive clients. The study was done in 60 hypertensive clients. These clients were divided into two groups (n=60) one group pre-test and post-test - Pre experimental design were used for this study. In this study pre-test was done Mudra Therapy intervention were given for the clients, post-test were done after the intervention for each three days. The blood pressure were measured by Sphygmomanometer, it was analyzed statistically by using descriptive and inferential statistics. The result showed that in control group without Mudra Therapy level of blood pressure significantly increased ($p>0.001$) over time. Whereas, in experimental group, with Mudra Therapy level of blood pressure were significantly decreased ($p<0.001$) overtime. It indicated that daily practicing of Mudra Therapy may decrease the level of blood pressure among hypertensive clients.

Keywords: Systolic blood pressure (SBP); Diastolic blood pressure (DBP); High blood pressure (HBP), Hypertension.

INTRODUCTION

Hypertension is a major worldwide public health problem and a term used to describe HBP. It is a condition that occurs as a result of repeatedly elevated blood pressure exceeding 140 over 90 mmHg, it has been called as silent killer as it is usually without symptoms.⁵ Hypertension are known to have a two-fold higher risk of developing coronary artery disease four times higher Risk of congestive heart failure and seven times higher risk of cerebrovascular disease compared to normotensive subjects.⁶ WHO (2002) reports that hypertension causes 5 million premature death each year worldwide causing 13% of global Fatalities.⁷

The goal of hypertension management is to prevent short and long-term complications by achieving and maintaining the blood pressure at 140/90 mm Hg or lower. Therefore, lifestyle modifications should be actively performed not only before but also after starting of antihypertensive medications to improve patients controlling outcomes.

Lifestyle modifications were including; weight control, limitation of alcohol consumption, increased physical activity, yoga, mudras, increased fruit and vegetable consumption, reduced total fat and saturated fat intake, and smoking cessation and also Mudra Therapy.⁸ Yoga mudras are simply are used in both Hindu and Buddhist traditions which describes

some symbolic gestures. Mudras are also a form of yoga which is done while practicing pranayama and it is a kind of medication which allows direct flow of energy into our body. These mudras in yoga are performed with hands, the yoga hand mudra, but there are few mudras also which can be performed with whole body so by practicing these yoga mudras mediates our mind and helps us to heal emotionally. Mudra uses techniques which stimulate the different parts of our brain and heart promoting relaxation and calmness. Mudras are used to express and emphasize the intentions of our mind.⁹

Studies show that the Mudra Therapy has not only improves the physical health but also improves the physiological effect of relaxing the muscles surround the small blood vessels which allows the blood to flow more easily. Though numerous modalities and pharmacological management are practiced reducing blood pressure, the outbreak of hypertension is still sweeping to high. So, there is a need for additional coping behavior such as Mudra Therapy which has greater and positive role in the reduction of high blood pressure.¹⁰

MATERIALS AND METHODS

Participants

Clients who diagnosed with hypertension (systolic pressure between 140-180 mm of Hg and diastolic between 90 -110 mm of Hg) and also Hypertension clients who are diagnosed to have type 2 diabetes mellitus. The Clients with other associated diseases like renal diseases, eye diseases were excluded and also Clients who follows other yogic technique for relaxation were excluded from the study.

Study methods

A one group pre-test and post-test pre- experimental research design and Non-probability purposive sampling technique were used to select the samples for this study. Assessment of level of blood pressure before employment of Mudra Therapy was obtained and followed by fifteen minutes of Mudra Therapy is employed. Post

assessment was conducted after each sessions of exercise for three consequent days. The participants instructed not to change their habitual physical activity level during the study period.

In the present study, a structured interview schedule was used to assess the demographic variables of the samples. The level of blood pressure was measured by standardized sphygmomanometer. The blood pressure was measured before Mudra Therapy and after practicing Mudra Therapy for three days.

Statistical analysis

The data were analyzed by Descriptive statistics like Frequency and percentage distribution were used to analyze the variables of the study. Mean and standard deviation was used to compute before and after Mudra Therapy. Inferential statistics - Paired “t” test was used to assess the effectiveness of Mudra Therapy on level of blood pressure, and Chi square was used to associate the level of blood pressure with demographic variables.

RESULTS

Table.1 represents the frequency and percentage distribution of level of blood pressure among clients with hypertension before intervention. Considering systolic blood pressure majority 42(70%) clients had blood pressure between 140-150mm of Hg, 15 (25%) had 150-160mm of Hg and only 3(5%) clients had more than 160mm of Hg.

Table 1: Frequency and percentage distribution of level of blood pressure among clients with hypertension before providing Mudra Therapy n=60

S.NO	Variables	Frequency (No.)	Percentage (%)
1	Systolic blood pressure (mm of Hg)		
	a)120 – 130	0	0
	b)130 - 140	0	0
	c)140 -150	42	70
	d)150 - 160	15	25
	e)>160	3	5
2	Diastolic blood pressure (mm of Hg)		
	a)70 – 80	0	0
	b)80 - 90	0	0
	c)90 - 100	44	73.33
	d)100 - 110	14	11.67
	e) >110	2	3.33

Regarding diastolic blood pressure 44 (73%) clients had 90-100 mm of Hg, 14

(12%) clients had 100-110 mm of Hg and only 2 (3%) of them had more than 110 mm of Hg of diastolic blood pressure.

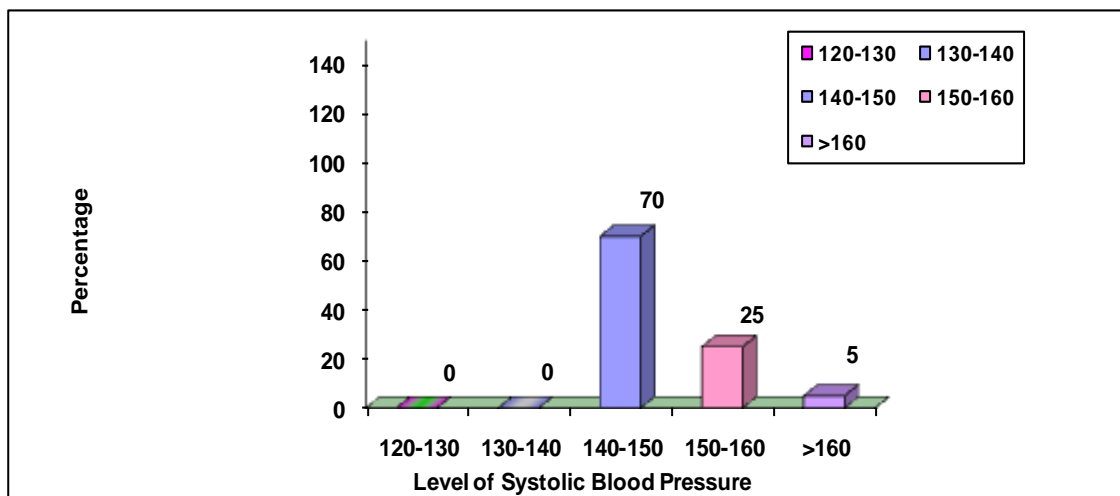


Fig.1: Percentage distribution of level of systolic blood pressure in the pretest

Fig.1 shows that percentage distribution of level of systolic blood pressure in the pre-test, 70% were between the 140-150mmHg, 25% were between 150-160 mmHg, and 5% were between more than 160mmHg.

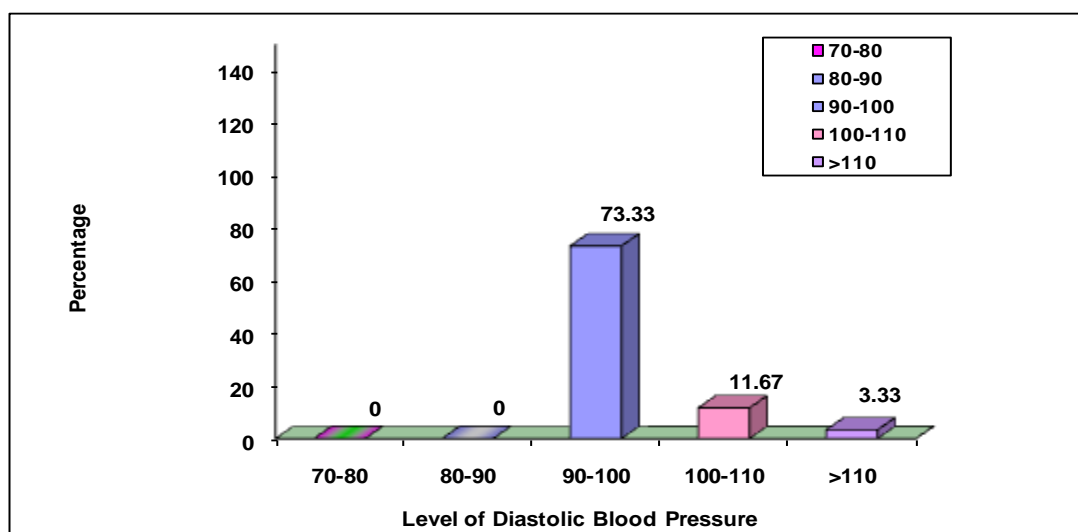


Fig.2: Percentage distribution of level of diastolic blood pressure in the pretest

Fig.2 shows that the percentage distribution of level of diastolic blood pressure in the pre-test, 73.33% were between 90-100 mmHg, 11.67% were between 100-110mmHg, were 3.33% were more than 110 mmHg.

Table 2 represent the frequency and percentage distribution of level of blood pressure among clients with hypertension after providing slow breathing exercise. Related to systolic blood pressure, after the

first day of intervention 61.67% clients had 140-150 mm of Hg, 16 (27%) clients had 130-140 mm of Hg and 7 (12%) had 150-160 mm of Hg and after the second day of intervention 32 (53%) clients had 130-140 mm of Hg, 24 (40%) clients had 140-150 mm of Hg and 4 (7%) clients blood pressure was reduce to 120-130 mm of Hg. With regard to diastolic blood pressure, after the first day of intervention 25 (42%) clients had 90-100 mm of Hg, 28(47%) clients had

80-90 mm of Hg and only 7(12%) of them had 100-110 mm of Hg. After the second day of intervention 46 (77%) clients diastolic blood pressure had reduced to 80-90 mm of Hg and only 14 (23%) clients had 90-100 mm of Hg. After the third day of intervention, majority 46 (77%) clients reduced to 80-90 mm of Hg, 9(15%) clients belongs to 90-100 mm of Hg and only 5(8%) clients had 70-80 mm of Hg.

Table 2: Frequency and percentage distribution of level of blood pressure among clients with hypertension after providing Mudra Therapy n = 60

S. No	Variables	I DAY		II DAY		III DAY	
		No.	%	No.	%	No.	%
1	Systolic Blood Pressure (mm of Hg)						
	a. 120 - 130	0	0	4	6.67	8	13.33
	b. 130 - 140	16	26.67	32	53.33	34	56.67
	c. 140 - 150	37	61.67	24	40	18	30
	d. 150 - 160	7	11.67	0	0	0	0
e. > 160	0	0	0	0	0	0	
2	Diastolic Blood pressure (mm of Hg)						
	a. 70 - 80	0	0	0	0	5	8.33
	b. 80 - 90	28	46.67	46	76.67	46	76.67
	c. 90 - 100	25	41.67	14	23.33	9	15
	d. 100 - 110	7	11.67	0	0	0	0
e. > 110	0	0	0	0	0	0	

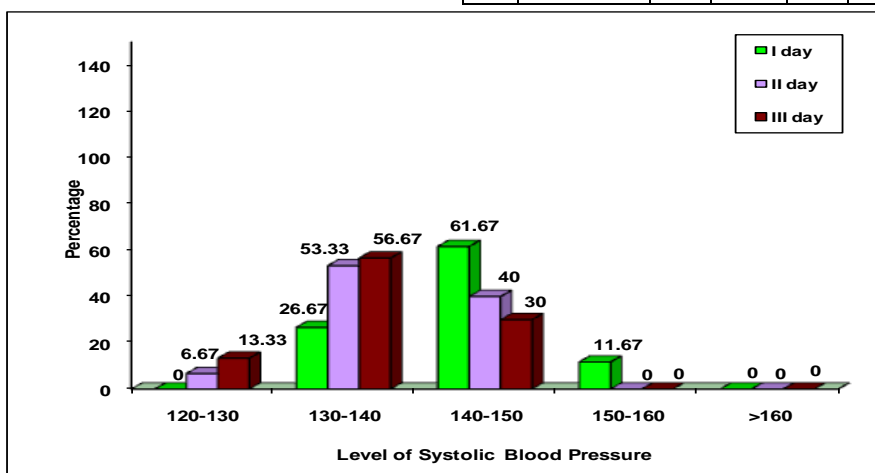


Fig.3: Percentage distribution of level of systolic blood pressure in the post test

Figure 3 shows that percentage distribution of level of systolic blood pressure in the post test on day 1 26.67% were between 130-140mmHg, 61.67% were between 140-150mmHg, 11.67% were between 150-160mmHg, whereas on the day two 6.67% were between 120-130mmHg, 53.33% were between 130-140mmHg, 40% were between 140-15-mmHg, 0% were between the 150-160mmHg respectively, on the third day of intervention 13.33% were between 120-130mmHg, 56.67% were between the 130-140mmHg, 30% were between the 140-15-mmHg, 0% were between the 150-160mmHg. It is statistically significant.

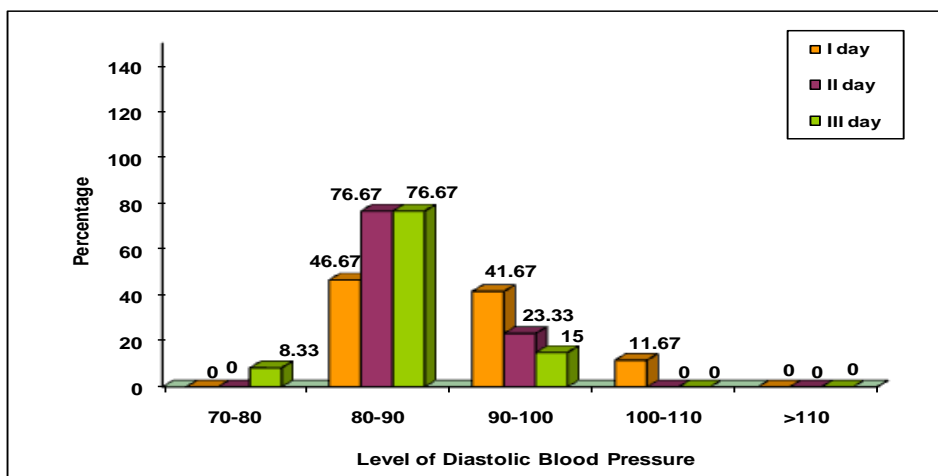


Fig.4: Percentage distribution of level of diastolic blood pressure in the post test

Figure 4 represent the percentage distribution of level of diastolic blood pressure in the post test on the first day 0%(70-80mmHg), 46.67%(80-90mmHg), 41.67%(90-100mmHg),11.67%(100-110mmHg), on second day 0%(70-80mmHg), 76.67% (80-90mmHg), 23.33%(90-100mmHg), 15%(90-100mmHg), on third day 8-33%(70-80mmHg), 76.67 (80-90mmHg), 15% (90-100mmHg) respectively, so it is statistically significant.

Table 4 represent the level of systolic blood pressure among clients with hypertension before and after providing Mudra Therapy. Before Mudra Therapy level of SBP Mean were 145.67, S.D were 6.36 and level of DBP Mean value is 95.07, S.D value is 6.9. After Mudra Therapy the post assessment level of SBP mean value is

133.13, S.D value 6.03, and DBP mean is value 82.77, S.D value is 4.25. The analysis reveals statistically significant between pre-test and post-test level of systolic and diastolic blood pressure among hypertensive clients and the 't' value were 19.39 and 20.99 respectively.

Table 3: Comparison of level of blood pressure among clients with hypertension before and after Mudra Therapy n=60

S. No	Variables	Mean	Standard Deviation	't' value	
1	Systolic blood pressure			19.39*** (S)	
	Pretest	O1	145.67		6.36
	Post test	O2	140.33		5.04
		O3	136.10		5.19
	O4	133.13	6.03		
2	Diastolic blood pressure			20.99*** (S)	
	Pretest	O1	95.07		6.9
	Post test	O2	89.83		6.04
		O3	84.83		4.65
	O4	82.77	4.25		

***p<0.001, S – Significant

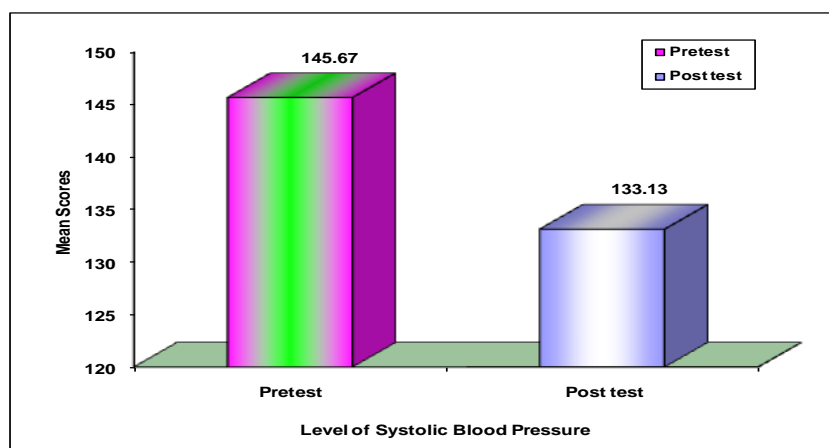


Fig.5: Comparison of level of systolic blood pressure in the pre and post test

Figure 5 represents the comparison of level of systolic blood pressure in the pre and posttest, pre-test mean value is 145.67 and the post-test mean value is 133.13.

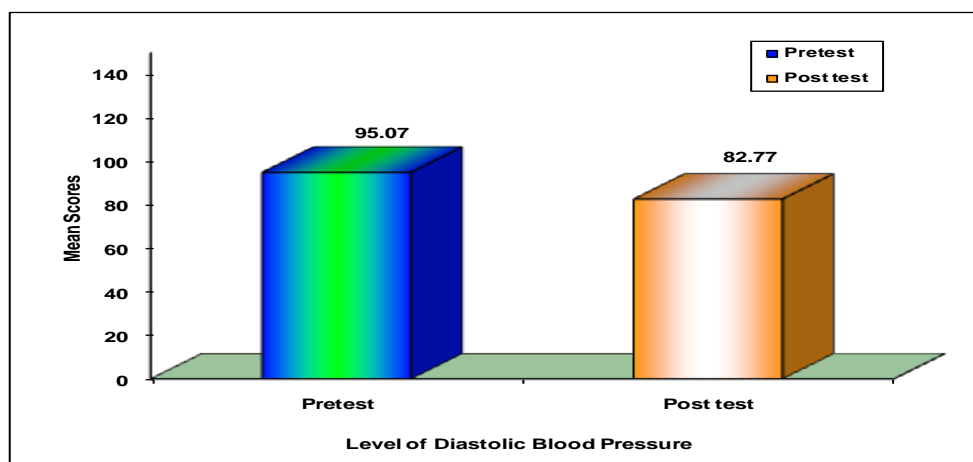


Fig.6: Comparison of level of diastolic blood pressure in the pre and post test

Figure 6 represents the comparison of level of diastolic blood pressure in the pre and post test the mean value of pre-test is 95.07 and post-test mean value is 82.77. It indicates there is statistically significant difference between the pre-test and post-test of level of SBP and DBP among hypertensive clients.

DISCUSSION

The present study was observed that in control group the level of blood pressure significantly increased over time. Whereas, in Mudra Therapy the levels of blood pressure were significantly decreased over time.

There have been several studies that examined the effectiveness of Mudra Therapy on level of blood pressure among hypertensive clients, Tripathi Deepti, conducted a study focus was on yoga hand mudra and its beneficial effect for controlling high blood pressure. Study was carried out on 34 subjects randomly, out of which 15 were diagnosed as hypertensive and 19 as normal. Yoga hand mudra was tried out on patients suffering from high blood pressure aged between 35- 65 years. Blood pressure and heart rate measurements of the subjects were recorded before and after performing yoga hand mudra. After practicing the yoga hand mudra, there was a significant reduction in both systolic and diastolic blood pressure. The study concluded that yoga hand mudra was found to be effective in normalizing high blood pressure.¹¹ The present study also revealed the effectiveness of Mudra Therapy in decreasing the blood pressure among hypertensive clients.

Bijlani RL conducted a study on lifestyle education program based on Apana Mudra reduces risk factors for cardiovascular disease and diabetes mellitus. One group per-posttest design was adopted and 98 subjects (67 male and 31 female) were selected in Integral Health Clinic. The Mudra Therapy employed on subject and variables were assessed at the end of 8th day and observations suggest that

a short lifestyle modification and stress a management education program leads to favorable metabolic effect with a period such as reduced blood pressure, heart rate and stress.¹² The study concluded that Apana Mudra reduces the high blood pressure, heart rate and stress. The present study results also revealed the effectiveness of Mudra Therapy on level of blood pressure among the hypertensive clients.

CONCLUSION

Hypertension is called “Silent Killer” which is designed to emphasize the direct relationship between the risk of morbidity and mortality from increasing level of blood pressure. The study concluded that hypertension is a prevailing cardiovascular health problem in India, so by Practicing these yoga Mudra therapy (Apna Vayu Mudra) mediates our mind and helps us to heal emotionally. So Mudra Therapy reveals high significant effect on level of blood pressure among hypertensive clients.

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