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A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT REFLEXOLOGY ON BLOOD PRESSURE OF THE HYPERTENSIVE PATIENTS IN IN-PATIENT DEPARTMENT AT DISTRICT HOSPITAL, UDAIPUR (RAJ.).

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ABSTRACT

BACKGROUND - Hypertension is fast emerging as a modern epidemic in the world. Developed countries are considering it as a leading cause of death but even developing countries do not lag behind in being affected by it. The Hypertension is often called the "Silent Killer as it is asymptomatic in early stages. **Foot reflexology** is a well-known complementary therapy which claims to help the body achieve homeostasis. It is believed that pressing specific areas on the feet related to specific glands or organs of the body can help these glands and organs to function at their peak, allowing the body to heal itself.

METHODOLOGY - The research approach used for study was quasi-experimental (Non-equivalent control group) research design. The sample size consisted of 60 hypertensive patients and was selected on the basis of the sampling criteria of convenient purposive sampling technique for the study. The tool used were, Part–A**:** Consists of demographic data of the samples &Part–B**:** consist of Assessment profile observation check list for systolic and diastolic blood pressure. A protocol was used for the foot reflexology to maintain accuracy and the uniformity of the Foot Reflexology Intervention. The collected data was analyzed and interpreted in terms of the objectives of the study using descriptive and inferential statistics.

RESULT–The mean systolic blood pressure in experimental group before& after administration of foot reflexology was 156.80 mmHg and 138.26mmHg. Whereas in control group pretest and post test systolic B.P. was 153.87 mmHg & 152.97mmHg respectively. Similarly the mean diastolic blood pressure in experimental group before& after administration of foot reflexology was 94.34 mmHg and 86.26 mmHg. Whereas in control group pretest and post test diastolic B.P. was 90.00mmHg & 89.93 mmHg respectively.

The effectiveness of Foot Reflexology Intervention was computed through the independent 't' test and it showed that there was significant normalization of systolic and diastolic blood pressure at 5% level i.e. $P<0.05$ after administration of Foot Reflexology in experimental group. The findings shows significant positive effect on normalizing blood pressure in hypertensive patients in the experimental group and that is due to foot reflexology intervention.

Keywords: Blood Pressure, Hypertension, Foot Reflexology

INTRODUCTION

Hypertension is a major cause of heart failure, stroke, kidney failure and other vascular conditions. Once it is developed it is a life time condition and about 20% of the adult population develops hypertension. The treatment of hypertension must normally be life long and requires taking regular medication along with diet and other life style changes. Cardiovascular diseases caused 2.3 million deaths in India in the year 1998; this is projected to double by the year 2020. Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India.

An increase in blood pressure represents one of the most common conditions in daily medical practice. Many different factors are regarded as risk factors for a stroke. Hypertension, cardiac diseases, atrial fibrillation, smoking, diabetes mellitus, alcohol consumption and dyslipidemia are central stroke risk factors. The pathophysiological importance of these different risk factors is discussed. Hypertension represents the most prevalent risk factor for stroke in the general population.

In alternative treatment, reflexology involves the practice of massaging, squeezing, or pushing on the certain areas of the body, particularly the feet are massaged to improve the functioning of the internal organs and to reduce the pain sensation. Reflexology has been used to treat a number of common aliments including back pain, digestive problems, migraine, menstrual problems, sinus problems, and general stress and tensions. It has also been used for more serious aliments such as heart disorders and multiple sclerosis. Reflexology has quiet powerful effects.

Foot reflexology is an alternative treatment therapy. It is believed that pressing specific areas on the feet related to specific glands or organs of the body can help these glands and organs to function at their peak, allowing the body to heal itself The principle difference between massage or touch and foot reflexology is that foot reflexology provides not only the relaxation effect obtained from massage or touch is said to also improve bodyï¿½s immunity contributing to healing process[1]

OBJECTIVES

1. To assess the blood pressure among the hypertensive patients of experimental group and control group before administration of foot reflexology.
2. To assess the blood pressure among the hypertensive patients after administration of foot reflexology in experimental group.
3. To determine effectiveness of foot reflexology among the hypertensive patients in terms of normalization of the Blood Pressure
4. To find the association between the selected demographical variables and pre-interventional blood pressure of the hypertensive patients.

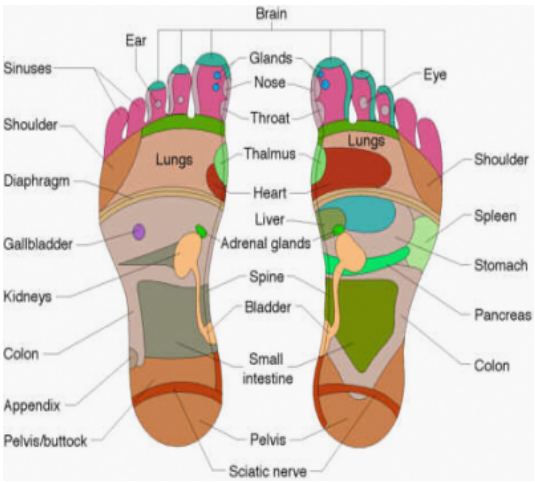
MATERIAL AND METHODS

- **Research design**: - Non-equivalent control group quasi-experimental design.
- **Variables**: - Independent variable was Foot Reflexology Intervention and dependent variable was Blood Pressure of Hypertensive Patents.
- **Sampling technique**: - non-probability Purposive sampling technique was used samples
- **Sample size**- The sample size for the present study comprised of 60 hypertensive patients

DEVELOPMENT OF TOOL – Tool consisted of 2 parts, Part –A: Consists of demographic data of the samples about information of Age, sex, religion, marital status, educational status, occupation etc.Part –B: consist of Assessment profile observation check list for Blood Pressure, Pulse and Respiration.

FOOT REFLEXOLOGY PROTOCOL- The following techniques will be used to implement foot reflexology.

1. Position the two feet close to each other and imagine as looking at a map of the body than gently press various points on the feet. Use the diagram below to work from the head (big toe) down the foot, moving from side to side.
2. Work firmly but gently to stimulate all the points in order. The foot must be held firmly and steadily or treatment can be uncomfortable and "ticklish" for sensitive feet. Hold the foot as shown in the diagram below for best effect.
3. In this study as per the protocol Foot Reflexology Intervention was given for five minutes twice a day continues for seven days. And Blood Pressure was checked before and after the Foot Reflexology Intervention.



COLLECTION OF DATA:- The Formal written permission was obtained from the concerned authority. The data collection procedure carried out from Aug 2013 to Oct 2013. The investigator established good rapport with hypertensive patients and consent from each participant was obtained. Each day the investigator went for the collection of the data as per the schedule.

DATA ANALYSIS:- The collected data was analyzed in terms of the objectives of the study using descriptive and inferential statistics. Mean, median, and Standard Deviation of systolic & diastolic blood pressure was calculated. Paired t test was applied to determine the significance of mean difference between blood pressure before and after Foot Reflexology Intervention on 1st and 7th day. Chi square test was used to associate the demographic variables with blood pressure.

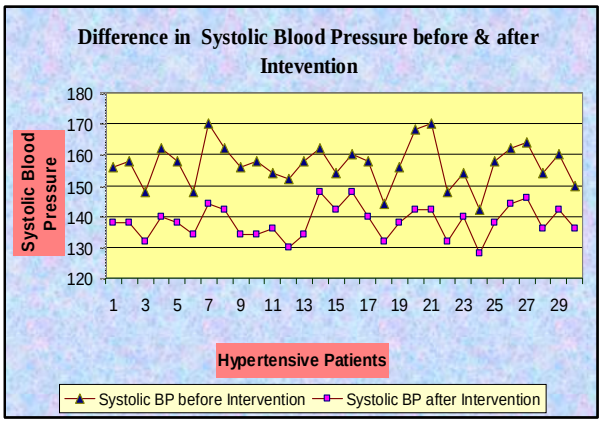
RESULT– (1) Analysis and comparison of data related to blood pressure before and after foot reflexology.

a) Difference of pre test and post test score of systolic BP in experimental and control groups

In experimental group the Mean value of pretest 156.50 was more than the post test value of 134.50 and in control group Mean value of pre test 153.87 was almost same as post test value of 152.97. So, values observed for systolic B.P. on day 7 in control groups is not significantly different than what is observed in control group on day 1. Hence one can conclude that the treatment shows significant positive effect in experimental group.

N=60

	Experimental Group		Control Group	
Phase	**Mean**	**SD**	**Mean**	**SD**
Pre test (Day 1)	156.50	9.10	153.87	10.30
Post test (Day 7)	134.50	4.66	152.97	8.77

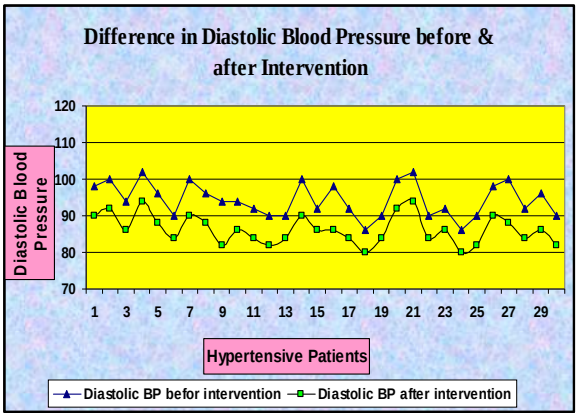


b) Difference of pre test and post test score of diastolic BP in experimental and control groups

In experimental group the Mean value of pretest 91.67 was more than the post test value of 81.00 and in control group Mean value of pre test 90.00 was almost same as post test value of 89.93. So, values observed for diastolic B.P. on day 7 in control groups is not significantly different than what is observed in control group on day 1. Hence one can conclude that the treatment shows significant positive effect in experimental group.

	Experimental Group		Control Group	
Phase	**Mean**	**SD**	**Mean**	**SD**
Pre test (Day 1)	91.67	5.82	90.00	4.50
Post test (Day 7)	81.00	3.00	89.93	4.38

N=60



(2) Comparison of difference between pre-test and post-test Blood Pressure after foot reflexology in experimental group & control group

(a) Mean, mean difference, standard deviation of difference and 't' value, of systolic blood pressure from pre test to post test scores of hypertensive patients in experimental group and control group-N=30+30

Group	Phase	Mean	S.D.	Mean $_D$	SD_D	Paired 't' test value	
Experimental Group	Pre test (Day 1)	156.50	9.10	22.00	4.44	4.415	't' (29) = 1.699
	Post test (Day 7)	134.50	4.66				p < 0.05
Control group	Pre test (Day 1)	153.87	10.30	0.90	1.53	0.133	't'(29) = 1.699
	Post test (Day 7)	152.97	8.77				P > 0.05

The data presented in table shows that in the experimental group the mean difference between the pre-test and post-test systolic blood pressure score is 22.00. This indicates that the foot reflexology has helped to normalize systolic blood pressure in experimental group. To find significance of the reduction in systolic blood pressure scores from pre to post-test, paired 't' test was computed and the obtained value of 't' (29) = 4.415 is found significant at 0.05 level. However, in the control group, the mean difference between the pre-test and post-test is only 0.90. To find the significance of decrease in systolic blood pressure scores, paired 't' test was computed and obtained value of 't'(29) = 0.133 is not found significant at 0.05 level.

b) Mean, mean difference, standard deviation of difference and't' value, of diastolic blood pressure from pre test to post test scores of hypertensive patients in experimental group and control group - N = 30+30

Group	Phase	Mean	S.D.	Mean $_D$	SD_D	Paired 't' test value	
Experimental Group	Pre test (Day 1)	91.67	5.82	10.67	2.83	3.592	't' (29) = 1.699,
	Post test (Day 7)	81.00	3.00				p < 0.05
Control group	Pre test (Day 1)	90.00	4.50	0.07	0.12	0.0212	't' (29) = 1.699,
	Post test (Day 7)	89.93	4.38				p > 0.05

The data presented in Table shows that in the experimental group the mean difference between the pre-test and post-test diastolic blood pressure mean score is 10.67. This indicates that the foot reflexology has helped to normalize diastolic blood pressure in experimental group. To find significance of the decrease in diastolic blood pressure scores from pre to post-test, paired 't' test was computed and the obtained value of 't' (29) = 3.592 is found significant at 0.05 level.

3) Association between selected demographic variables and pre interventional Blood Pressure

In order to examine the association between socio demographic variables Chi-square test was worked out. Among the variables accounted for association, the variable habits(x^2 = 4.596 df =1), and family

history of hypertension (x^2 = 3.975, df =1) were found to be statically significant with blood pressure at 5% level. The remaining characters like Gender, Age, Religion, Educational status, Occupation, Nature Of Work, Monthly Income, etc. were not found to be statically significant with blood pressure at the same level.

CONCLUSION

The study shows that after comparing the blood pressure before and after the administration of foot reflexology in experimental group and without foot reflexology in control group, the findings shows significant positive effect on normalizing blood pressure in hypertensive patients in the experimental group and that is due to foot reflexology intervention.

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