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A STUDY TO EVALUATE THE EFFECTIVENESS OF FOOT MASSAGE ON BODY BALANCE AMONG ELDERLY PEOPLE IN SELECTED OLDAGE HOME

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ABSTRACT

The main aim of the present study was to evaluate the effectiveness of Foot Massage therapy on body balance among Elderly People.

OBJECTIVES :

- To assess the pre and post test level of body balance among Elderly People in experimental and control group.
- To evaluate the effectiveness of Foot Massage on level of body balance among Elderly People in experimental group.
- To determine the association between the post test level of body balance among Elderly People and their selected demographic variables in experimental and control group.

METHODS: The research design adopted was quasi-experimental pre test and post test with control group design. Non-randomized purposive sampling technique was adopted to select the desired sample. The sample size was 60. Foot Massage was given to Elderly People with Body balance disturbance for a period of 20 minutes, once a day, for five consecutive days. Standardized Berg Balance Scale was used to assess the level of Body balance. The data collection tool was validated by experts and was found to be valid. RESULTS: Analysis using paired 't' test found significant values 7.47 $p < 0.05$ level. The findings of the study revealed that application of Foot Massage Therapy was effective in improving body balance among Elderly People with body balance disturbances. Keywords : Effectiveness, Foot massage therapy, Body balance.

INTRODUCTION

The increase in age may lead to increasing probability of degenerative changes in the biological systems which in turn may lead to functional and structural changes in the body mechanism. These changes may be extremely profound resulting in total disability. The changes in the biological systems may eventually lead to activity restriction and functional decline among Elderly People which contribute to fear of falling. Fear of falling is suggested to be a potential health problem of equal importance to fall and has been mentioned as an individual contribution for the decline of activities of daily living

Fall among the Elderly People is a growing problem due to the ageing population and it is a challenge for clinicians to manage these clients due to their multiple co-morbidities. The majority of falls are not reported. This leads to difficulties in estimating the exact prevalence and incidence of falls in the older population. Epidemiological studies have demonstrated that every year, one-third to one-half of the population age 65 and over experience falls. About one third of the population age 65 and above reports some difficulty with balance or ambulation; incidences increase in frequency and severity in the above age 75 population. Falls are the leading cause of fatal and non-fatal injuries in older adults. In 2000, 1.6 million seniors were treated in emergency departments for fall-related injuries and 353,000 were hospitalized. The Elderly People represent more than one third of all hospital injury admissions, and more than 80% of these injuries are caused by unintentional falls. The most important consequence of falls is an osteoporotic fracture, especially of the hip and wrist. Wrist fractures are more common than hip fractures between age 65 and 75, whereas hip fractures are more common in the overage of 75. Other consequences include non-fatal injury, fear and loss of function and independence.

Foot massage is a simple, non-invasive method to help maintaining the balance of the body. It has been described as a natural therapy that requires the application of a specific type of pressure on particular areas of the feet. Foot massage is based on the principle that there are reflexes in the feet which correspond to every part of the body.

Chisato., (2006) conducted a quasi experimental study in France on assessing the effect of foot massage and mobilization of the feet and ankles in Elderly People adults on their balance. The samples of the study were randomly selected Elderly People people from the age of 65 years to 95 years, who were residing in Community Nursing homes. The samples were given foot massage and joint mobilization and their balance were assessed using One Leg Balance (OLB) test, Timed Up and Go (TUG) test and Lateral Reach (LR) test. Results demonstrated a significant improvement after massage and mobilization, for the OLB test (1.1 ± 1.7s versus 0.4 ± 1.2s, $p<0.01$) and the TUG test (0.9 ± 2.6s versus 0.2 ± 1.2s, $p<0.05$). These results emphasize the positive impact of a single session of manual therapy applied to the feet and ankles on balance in Elderly People subjects

Foot massage is a simple intervention which can bring about a great deal of change in the life of the Elderly People by enhancing their balance and thereby improving their sense of independence and quality of life. Hence the researcher felt the need to assess the balance of the Elderly People and evaluate the effect of foot massage on the balance of the Elderly People

Statement of the Problem

"A Study to Evaluate the Effectiveness of Foot Massage on Body Balance among Elderly People in Selected Oldage Home at Coimbatore."

Objectives

- To assess the pre and post-test level of body balance among the Elderly People in the experimental and control group.
- To evaluate the effectiveness of Foot Massage on level of body balance among Elderly People in experimental group.
- To determine the association between the post-test level of body balance among Elderly People and their selected demographic variables in experimental and control group

Hypothesis

- H_1: There is a significant difference between mean pre and post-test score on level of body balance among Elderly People in the experimental group.
- H_2:There is a significant difference between the mean post-test level of body balance among Elderly People in the experimental and control group
- H_3:There is a significant association between the post-test level of body balance among Elderly People with their selected demographic variables in experimental and control group

A quasi-experimental pre-test and post-test design with a control group was chosen for analyzing the effectiveness of Foot Massage on level of body balance among Elderly People at selected oldage home. A total number of 60 subjects were selected for study. The samples selected were Elderly People with disturbances in body balance residing in St.Joseph old age home at Coimbatore. Standardized Berg Balance Scale which has 14 items used to

assess the balance and different positional changes. It is a 5 point scale ranging from 0 - 4. '0' indicated the lowest level of function and "4" indicated the highest level of function.

Maximum possible score was 56 and minimum possible score was 0.

Scoring Procedure

The body balance is classified as follows-

0 – 20 (< 35%) – Inadequate body balance

21 – 40 (35% - 70%) – Moderately adequate body balance

41 – 56 (> 70%) – Adequate body balance

Foot massage is a specific form of massage technique by therapeutic application of focused pressure to certain known reflex points located in the foot through six steps, (stroking, ankle rotation, pull & squeeze of the toe, toe slides, and arch press) for a period of 20 minutes, once a day, for five consecutive days.

Four sessions of subjects selection was undertaken based on inclusion and exclusion criteria. The subjects were randomly assigned to experimental and control group. On the day 1, the demographic variable and the standardized Berg balance scale was administered through structured interview schedule for pre test assessment of level of balance among Elderly People in selected oldage home. It took 20 minutes for each sample. On day 2, 3, 4,5,6 foot massage was given for 20 minutes (10 minute for each feet) to the study group. On day 7, post test assessment of level of balance among selected Elderly People was done by using the same Berg balance scale to both groups.

RESULTS

Frequency and Percentage Distribution of Elderly People According to their Demographic Variables in Experimental and Control Group.

n=60

S. No.	Demographic Variables	Experimental Group		Control Group		Total	
		f	%	f	%	f	%
1	Age (in years)						
	a) 60-65	4	13	5	17	9	15
	b) 66-70	4	13	6	20	10	16.7
	c) 71-75	6	20	9	30	15	25
	d) 76-80	16	53	10	33	26	43.33
2	Gender						
	a) Male	15	50	15	50	30	50
	b) Female	15	50	15	50	30	50
3	Body weight						
	a) <50kg	11	36.7	10	33	21	35
	b) 50-70kg	14	47	12	40	26	43.33
	c) >70kg	5	17	8	27	13	21.7
4	Previous use of alcohol						
	a) No use	19	63.3	17	57	36	60
	b) <10 years	0	0	0	0	0	0
	c) 10-25 years	2	6.67	5	17	7	11.7
	d) >25 years	9	30	8	27	17	28.33
5	Exercise						
	a) No specific exercise pattern	19	63.3	17	57	36	60
	b) Irregular exercise pattern	7	23	11	37	18	30
	c) Regular exercise pattern	4	13.3	2	6.7	6	10

S. No.	Demographic Variables	Experimental Group		Control Group		(Contd.,)	
		f	%	f	%	f	%

6	Dietary pattern						
	a) Vegetarian	7	23	3	10	10	16.7
	b) Non-vegetarian	23	76.7	27	90	50	83.33
7	Use of regular drugs						
	a) Yes	20	66.67	15	50	35	58.33
	b) No	10	33.33	15	50	25	41.7

Table 1 depicts the data on demographic variables among Elderly People with impaired body balance, majority of them 26 (43.33%) belonged to 76-80 years of age. Male and females were equally distributed in experimental and control group, regarding body weight, 26 (43.33%) were in the group of 50-70kg, regarding previous use of alcohol 36(60%) did not use alcohol previously, regarding exercise 30(60%) were not practicing any specific exercise pattern, regarding dietary pattern 50(83.34%) were non-vegetarians, and regarding use of drugs 35(58.3%) were taking regular drugs.

Frequency and Percentage Distribution of Level of Body Balance among Elderly People in Experimental Group.

n=30

S.No	Level of Body Balance	Experimental Group			
		Pre-test		Post-test	
		F	%	f	%
1.	Inadequate body balance	2	6.67	0	0
2.	Moderately adequate body balance	28	93.33	14	46.67
3.	Adequate body balance	0	0	16	53.33

The above table shows the level of body balance among the Elderly People in experimental group residing in selected old age home in the experimental group.

Among 30 subjects in the experimental group, 28(93.3%) had moderately adequate body balance and 2 (6.67%) had inadequate body balance during pre-test. Whereas in post-test, 16 (53.3%) of them had adequate body balance and 14 (46.7%) had moderately adequate body balance.

Data on the effectiveness of foot Massage on level of body balance Among Elderly People.

Mean, Standard Deviation, Mean Difference and 't' Value of Pre-test and Post-test Scores of Level of Body Balance among Elderly People

n=60

S.No.	Variables	Mean	SD	MD	't' Value
1	Experimental Group				
	Pre test	31.23	6.56	8	14.85*
	Post test	39.23	8.13		(2.045)
2	Control Group				
	Pre test	33.13	6.80	0.27	1.86
	Post test	32.86	6.71		(2.045)

*Significant at p<0.05 level.

Table 3 revealed that, among experimental group the mean pre test score was 31.23 with standard deviation 6.56 and the mean post test score was 39.23 with the standard deviation 8.13. The mean difference was 8. The obtained 't' value, 14.85 (2.045) was significant at $p < 0.05$ level. Whereas in the control group the mean pre test score was 33.13 with standard deviation 6.80 and the mean post test score was 32.86 with the standard deviation 6.71. The mean difference was 0.27. The obtained 't' value, 1.86 (2.045) was not significant at $p < 0.05$ level. Hence, there was no significant difference in the control group between the pretest and post test

Mean, Standard Deviation, Mean Difference and 't' Value of Post-test Level of Body Balance among Elderly People in Experimental and Control Group

n=60

S.NO	Variables	Mean	SD	MD	't' Value
1	Experimental Group	39.23	8.13	6.37	7.47*
2	Control Group	32.86	6.71		

*Significant at p<0.05 level.

Table shows the comparison of post test score of both groups. In experimental group the mean post test score was 39.23 with the standard deviation 8.13 and in control group, the mean post test score was 32.86 with the standard deviation 6.71. The calculated mean difference was 6.37. The obtained 't' value, 7.47 (1.960) which was significant at $p < 0.05$ level. It is inferred that Foot Massage Therapy was effective in improving the level of body balance among Elderly People.

DISCUSSION

The present study aims to evaluate the effectiveness of Foot Massage Therapy on Body Balance. The study was conducted by using Quasi-experimental pre-test and post-test with control group design. St. Joseph old age home was selected for conducting the study. Non-randomized purposive sampling technique was used. Total sample size was 60, among which 30 subjects were included in experimental group and 30 subjects in control group.

The study findings revealed that among experimental group majority of the subjects 28(93.3%) had moderately adequate body balance and 2 (6.67%) had inadequate body balance during pre test. Whereas in the post test 16 (53.3%) of them had adequate body balance, 14 (46.7%) had moderately adequate body balance. In the control group, 28(93.3%) had moderately adequate body balance and 2 (6.67%) had inadequate body balance during pre

test. Whereas in post test 26 (86.6%) of them had moderately adequate body balance, 2 (6.67%) had adequate body balance and 2 (6.67%) had inadequate body balance.

The findings were supported a study done by Exton Smith., (1997) a descriptive study regarding the incidence of fall in 963 people over the age of 65 years. Results showed that, in women the proportion who fell increased with age from about 30% in the 65- 69 year age group to over 50% in those over 85 years of age. In men, the proportion who fell increased with age from about 13% in the 65- 69 year age group to over 30% in those over 80 years of age and over.

The second objective of the study was to evaluate the effectiveness of Foot Massage on level of body balance among Elderly People in experimental group. Among experimental group the mean pre-test score was 31.23 with standard deviation 6.56 and the mean post-test score was 39.23 with the standard deviation 8.13. The mean difference was 8. The obtained 't' value, 14.85 (2.045) was significant at $p < 0.05$ level.

The study findings were supported by Soon Y.I., (2001) conducted a study to assess the effect of Foot massage on body balance among 58 institutionalized senior citizens. The findings revealed that Foot massage on experimental group showed more significant improvement in the body balance (t=3.56)

The study findings were also supported by S.H Tse., (2003) conducted a study regarding the effectiveness of foot massage on improvement of body balance among Elderly People in old age home at Netherland. The results showed that foot massage on experimental group showed more significant differences in the level of maintaining body balance(t = 5.40).

It is inferred that Foot Massage Therapy was effective in improving the level of Body Balance among Elderly People.

The third objective of the study was to determine the association between the post-test level of body balance among Elderly People and their selected demographic variables in experimental and control group.

There was no significant association between the level of body balance among Elderly People in experimental, control groups and with selected demographic variables age, gender, body weight, previous use of alcohol, exercise, dietary pattern and use of regular drugs.

Summary of the Study

The present study was under taken to evaluate the effectiveness of Foot Massage Therapy on Body Balance among Elderly People residing in selected old age home at Coimbatore. The study findings revealed that Foot Massage is effective in improving body balance among Elderly People.

Conclusion

The main conclusion drawn from this present study was that majority of the Elderly People had moderately adequate level of body balance. After practicing Foot Massage therapy, their body balance improved significantly. This ensured that Foot Massage therapy was effective in improving the level of body balance among Elderly People

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