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The efficacy of occupational therapy intervention in gaining independence in activities of daily living: A study with reference to the geriatric homes inmates in Pondicherry

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Abstract
Old age is the later part of life characterized by deterioration in physical capacities. Occupational Therapy interventions (OT) are essential for maintaining functional abilities and independence as people age. The aim of the study was to assess the efficacy of occupational therapy on improving activities of daily living skills in elderly population. *Design:* It was a quasi-interventional research design. Subjects: A total of 100 subjects participated and were allocated to two groups i.e. occupational therapy treatment (routine home care) group & conventional therapy group with50 subjects in each. *Conclusion:* Occupational therapy intervention implemented for the geriatrics population has significant and positive effects on the physical and mental health & wellbeing of the elderly population.

Keywords: activities of daily living skill; aging; elderly; geriatrics; occupational therapy intervention

1. Introduction

Occupational Therapy interventions are essential for restoring & maintaining functional performance abilities and independence in activities of daily living skill in elderly population. It helps to maintain physical and mental health well-being. Being active can provide health benefits, even for those who become physically active later in life. However, those aged 65 and above are the least active age group, and spend the most time idle. Occupational therapy activity recommendations for elderly population includes engaging in at least 150 minutes of moderate-intensity aerobic activity per week; doing a range of activities that incorporate fitness, strength, flexibility and balance; minimising the amount of time spent in prolonged sitting; and breaking up long periods of sitting as often as possible

Occupational therapy intervention results in improved physical function & mental health, high exercise adherence rates, enhanced mobility, need satisfaction, increased caloric expenditure and improved socialization thereby improving quality of life (QOL).

Other effective interventions include using technology to deliver programs; advice by health professionals; evidence-based healthy living programs and interventions to reduce sedentary behavior.

The current study reveals the fact that occupational therapy plays, an important role in maintaining independent living skill for elderly people and promotes independent living skills.[2]It was also evident from the improved functional ability from occupational therapy intervention & its implication on QOL.

The study focused on various dimensions of psychosocial aspects of caregiving and assessed the effect on caregivers' quality of life. The socio-demographic factors that might have influenced the caregiving by the caregiver were also taken into consideration. The researchers had also intended to find out the linkage between the psychosocial impact of caregiving and the quality of life of the caregivers.

2. Subjects and Methods

It was an experimental study having two groups with 50 participants in each i.e. experimental group & control group. The intervention was given for a period of 3 months in 5 phases.

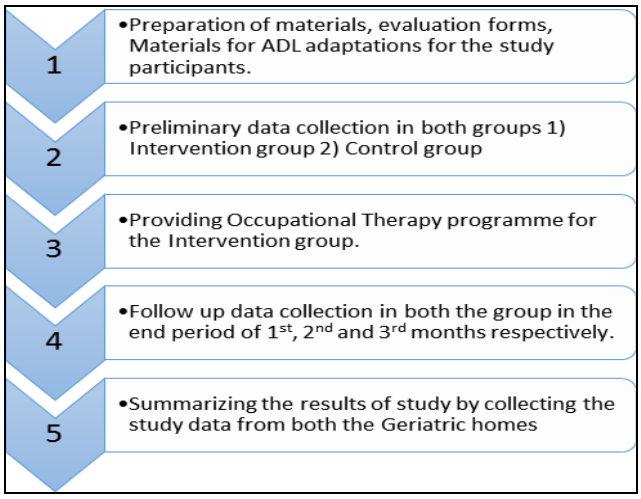


Fig 1

Following data collection tools were used.

1. **Short Portable Mental Status Questionnaire (SPMSQ)** used to detect the presence of mental impairment and to determine its degree.
2. **Demographics Checklist** included age, sex, marital status, level of education financial status and perceived health status.
3. **Barthel Index of Activities of Daily Living** used to measure of daily living activities in relation to personal care and mobility of the patient.
4. **Fatigue Severity Scale** used to investigate fatigue/function measures, that is, the connection between fatigue intensity and functional disability.
5. **Caregiver Strain Index** used to assess individuals of any age who have assumed the role of caregiver for an older adult. The scale was used to investigate fatigue/function measures, that is, the connection between fatigue intensity and functional disability[3]

2.1 Health Promoting Interventions

Health-promoting intervention was designed based on the areas emphasized by healthy lifestyle and social support[4]. Occupational Therapists provide with exercises to improve Joint Range of Motion of the extremities within pain free range, following with muscle toning/muscle strengthening exercises. ADL training with suitable adaptations and modifications were provided which helps them to manage their self-care independently.

Health-promoting interventions included healthy lifestyle, proper nutrition, elders' physical activities and interpersonal relations, control of stress, night sleep, memory empowerment, and acceptance of aging. The interventions were educated in a weekly manner in care homes for three months with a frequency of 8 sessions each, of 45 minutes duration each.

Table 1: Health Promoting Interventions

Intervention Context	Intervention Type
Occupational Therapy Intervention	The elderly are recommended: i) Regular and suitable exercises. ii) daily exercises and mobility depending on bodily conditions, iii) maintain proper weight & iv) slow walking in fresh air in mornings and afternoons twice each one lasting 15 to 20 minutes
Range of Motion Exercise	Range of motion (ROM) exercises is done to preserve flexibility and mobility of the joints. These exercises reduce stiffness and will prevent or at least slow down the freezing of the joints. i) Lower Extremity Passive ROM Exercises. ii) Upper Extremity Passive ROM Exercises.
Stress control Interventions	i) Preparing the elderly to seek the help of others when necessary. ii) Involving in favorite activities and programs, spending time with friends and others. iii) Daily walks, participation in social & group activities, helping with household chores and avoiding seclusion. iv) Meditation and progressive muscle relaxation
Assistive technology and Adaptive Aids	i) Adaptive aids and environmental modifications to promote safety and independence in performing a broad range of ADLs are in common use. ii) Adaptive aids are recommended after assessing the elderly's underlying impairments. iii) An Activity clock chart was provided individually to follow their daily routine task.

2.2 Data Analysis

Data were analysed using the Statistical Package for Social Science (SPSS) version 22. 'p' values less than 0.05 were considered as significant. Descriptive statistics were used to analyse the frequency, percentage, mean and standard deviation. Inferential statistics were used to determine the relationship, association and comparison to identify the differences. The pretest & post test scores for stress level were assessed for each of the 100 subjects at one month interval for the duration of three months. 5 reminiscence therapy sessions of 45 minutes duration each were conducted for per session in experimental group.

Mean scores of each group were compared. The results at an outset showed that the intervention (experimental) group showed better results than control group.

3. Results and Discussion

The results were recorded in three different sections. First section represents the results of descriptive analysis and the socio-demographic profile. The cognitive and physical status of the elderly was analysed using Chi-Square test. The Barthel index score was used to assess the functional ability in Activities of Daily Living status among the elderly.

Relationship between Socio-demographic characteristics of the elderly among the intervention and control groups and ADLs score pre-post OT intervention, were analysed using ANOVA test. The second section represented the fatigue severity of the elders in the intervention and control group. The three important factors the age, cognitive status and the ambulation capacity were tabulated and analyzed in each stage. The third section presents the comparison of the caregiver strain. Score changes of the caregiver who take care the elders in the intervention and control group before and after the occupational therapy interventions. The care giver strain score were tabulated and analysed in each stage. The t test results were used.

The socio-demographic characteristic of the elderly were analysed to see the psychosocial impact of the occupational therapy interventions. Table 2 shows the socio-demographic profile of the study participants, both intervention and control group. The age of the intervention group ranged from 60 to 90 years, with a mean age of 70.72 $\pm$ 9.18 years, for the control group the age ranged from 60 to 78 years, with a mean of 68.58 $\pm$ 4.63. Females were dominant among the studied subjects and constituted 62% of the intervention group and 100% of the control group. The majority of the subjects in both intervention and control groups (42% and 44% respectively) were able to read and write. 34% in the intervention group and 24% in the control group were illiterates. The majority of the subjects was either widowed or separated (66% of the intervention group and 68% of the control group). 80% of the intervention group and 88% of the control group received Government Old-age Pension. Generally both groups were from low income group. No statistical significant difference was found between both groups in relation to socio-demographic characteristics.

Table 2: Socio-demographic Characteristics of the Elderly

Description	Intervention Group		Control Group	
	n (50)	%	n (50)	%
Age (in years)				
< 65	16	32.0	7	14.0
65 - 75	16	32.0	36	72.0
> 75	18	36.0	7	14.0
Mean ± SD	70.72 ± 9.18		68.58 ± 4.63	
Sex				
Male	31	62.0	0	0.0
Female	19	38.0	50	100.0
Educational Level				
Illiterate	17	34.0	12	24.0
Read & Write	22	44.0	21	42.0
Secondary	9	18.0	11	22.0
University	2	4.0	6	12.0
Marital Status				
Married	9	18.0	7	14.0
Unmarried	8	16.0	9	18.0
Widow / Separated	33	66.0	34	68.0
Income				
Pension	7	14.0	4	8.0
Govt. Old age Pension	40	80.0	44	88.0
Dependent on others	3	6.0	2	4.0

Table 3 shows the distribution of cognitive and physical status of the elderly among the study and control groups according to their pre-experimental stage. Based on the eligible criteria, only patients with intact cognitive functions or mild cognitive impairment were included in this study. Those with intact cognitive impairment were more prevalent in both study and control groups, 82.0% and 86.0% respectively. Regarding visual status, the majority of elderly in both study and control groups reported visual problems but not using glasses (46.0% and 36% respectively). In relation to hearing status, 60% of the study subjects and 56% of the control group reported having no hearing problems. Concerning the ambulation status of the subjects the majority of the elders in the study and control groups were able to ambulate independently (84.0% and 78.0% respectively). No statistical significant difference was found between both groups in relation to cognitive, visual, hearing or ambulation capacity.

Table 3: Distribution of Cognitive and Physical Status of the Elderly

Description	Intervention Group		Control Group		Test of Significance	
	n	%	n	%	x^2	P value
Cognitive Status						
Intact cognitive functions	41	82	43	86	0.298	0.585
Mild cognitive impairments	9	18	7	14		
Visual Status						
No visual problem	14	28	11	22	2.852	0.240
Use eye glasses	13	26	21	42		
Visual problem but not using eye glasses	23	46	18	36		
Hearing Status						
No hearing problem	30	60	28	56	0.469	0.791
Use a hearing aid	4	8	3	6		
Hearing problem but not using hearing aid	16	32	19	38		
Ambulation Capacity						
Independent	42	84	39	78	0.711	0.701
Use cane / walker	6	12	9	18		
Wheel Chair	2	4	2	4		

Table 4 shows the comparison of the level of ADL status among geriatric patients between the intervention and control groups prior to the OT intervention. Out of 50 subjects of each group 45 of the intervention group and 47 of the control group were able to feed on their own with no statistically significant difference. Bathing was independent in 42 subjects of Intervention group &40 subjects of control group and were able to dress on their own.

Table 4: Functional Ability in Activities of Daily Living Skill

Basic ADL	Intervention Group		Control Group		χ^2	p
	Yes	No	Yes	No		
Feeding	45	5	47	3	0.544	0.4610
Bathing	42	8	40	10	0.271	0.6266
Grooming	35	15	38	12	0.457	0.4992
Dressing	38	12	40	10	0.233	0.6292
Bowels	32	18	35	15	0.407	0.5235
Bladder	15	35	15	35	0.000	1.0000
Toilet Use	27	23	30	20	0.367	0.5445
Transfers	32	18	28	22	0.667	0.4142
Mobility	22	28	30	20	2.564	0.1093
Stairs	12	38	15	35	0.457	0.4992

A total of 32 subjects in intervention group and 28 of the control group were independent in transfer skill from bed to chair and vice versa, with no statistically significant difference while for independent toileting skill ability it was in intervention group and 30 in control group. Among intervention group 22 and from control group 30 subjects were able to walk. Climbing stairs was considered as most difficult task. 12 of the intervention group and 15 of the control group were able to climb the stair, with statistically no significant difference.

Table 5: Factors affecting Physical Disability (Pre-intervention)

Factors	Intervention Group		Control Group		χ^2	p*
	BIS < 20	BIS = 20	BIS < 20	BIS = 20		
Age (in years)						
< 65	12	4	3	4	2.218	0.136
65 - 75	15	1	33	2	0.006	0.940
> 75	17	1	7	0	-	-
Sex						
Male	18	1	-	-		
Female	26	5	43	7		
Educational level						
Illiterate	15	2	23	1	0.847	0.357
Read & Write	20	2	16	3	0.427	0.513
Secondary	7	2	1	3	3.259	0.071
University	1	1	3	0	-	-
Marital Status						
Married	7	2	7	2	0	1
Unmarried	6	3	8	2	0.434	0.510
Widow / Separated	27	4	28	3	0.161	0.688
Income						
Pension	7	2	5	0	-	-
Govt Old age Pension	40	3	32	3	0.069	0.793
Dependent on others	3	1	7	1	0.300	0.584

Table 5 shows the factors affecting physical disability and their association among the study participants before the OT intervention. The Barthel score of<20 indicates partial disability and BIS score = 20 indicates total disability. The participants were divided in to three subgroups viz. less than 65 years, 65–70 years and age above 75 years and analysis based was done. The other subcategory was based on gender. The disability in the female was more when compared to the male counterparts. The limitation of the study was that only female subjects were included in the control group. The other sub-categories were education level, marital status and income. Chi-Square test was conducted and no significant difference was observed. Table 6 shows the relations between Socio-demographic characteristics of the elderly among the intervention and control groups and ADLs scores before the OT. There was gradual decline in ADL skill with increasing age of the elderly in both the intervention and control groups. The statistically significant differences were observed in the intervention group p=0.006. The mean age of the female participants was higher mean in the intervention group than the control group. This difference in ADLs mean score between males and females was not statistically significant in the intervention group p=0.438 and not comparable as the control group has only the male participants. The confounding variable such as marital status, education level and income showed no statistical significant difference among the intervention and the control groups.

Table 6: ADL Score (Pre-test)

Factors	Intervention Group		Control Group	
	ADLs score (Pretest)		ADLs score (Pretest)	
	Mean ± SD		Mean ± SD	
Age (in years)				
< 65	18.500±1.826		17.000±4.509	
65 - 75	17.875±1.204		15.417±2.931	
> 75	16.444±2.229		14.714±2.984	
ANOVA test	F = 5.738	p= 0.006	F = 0.999	p = 0.376
Sex				
Male	16.731 ± 3.336		-	
Female	17.355 ± 2.303		15.54±3.18293	
ANOVA test	F = 0.613	p = 0.438	F =	p =
Educational level				
Illiterate	16.375±1.857		15.042±3.394	
Read & Write	18.182±1.816		15.789±2.879	
Secondary	18.222±1.563		18.500±3.000	
University	17.333±3.055		14.000±1.732	
ANOVA test	F = 3.379	p = 0.026	F = 1.690	p= 0.182
Marital Status				
Married	17.300± 2.359		16.778 ± 1.922	
Unmarried	18.222±2.048		16.000 ± 3.771	
Widow / Separated	17.452±1.877		15.032 ± 3.240	
ANOVA test	F = 0.618	p = 0.543	F = 1.189	p= 0.313
Income				
Pension	17.667±2.517		16.167±2.401	
Govt Old age Pension	17.525±2.038		15.343±3.115	
Dependent on others	17.714±1.799		15.889±4.076	
ANOVA test	F = 0.030	p = 0.970	F = 0.230	p= 0.795

Table 7 shows the relations between socio-demographic characteristics of the subjects among the intervention and control groups and ADLs scores after three months of OT interventions. The mean ADL score shows a drastic improvement even in the age group > 75. The intervention group mean ADL score for age group > 75 is 19.167 wherein the control group is 15.143.These differences are statistically significant in the intervention group (p = 0.001) and control group (p<.001). There was more improvement among the females in intervention group with mean ADL score 19.156. The mean ADL score for the intervention group based on the education level also improved but the p value was not significant for both, the intervention group (p=0.622)and control group (p = 0.240). ADL mean score for the variables marital status, and income level also showed significant improvement.

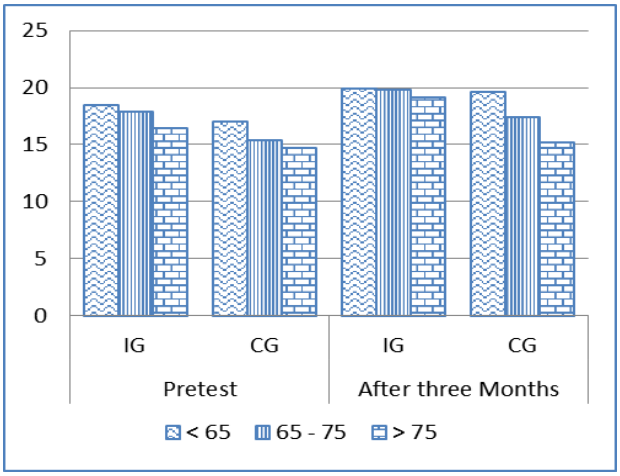


Fig 2: ADL Score (Before and After 3 Months)

Table 7: ADL Score (After 3 Months)

Factors	Intervention Group		Control Group	
	ADLs score (After 3 months)		ADLs score (After 3 months)	
	Mean ± SD		Mean ± SD	
Age (in years)				
< 65	19.875 ± 0.342		19.571 ± 0.787	
65 - 75	19.813 ± 0.403		17.389 ± 1.990	
> 75	19.167 ± 0.786		15.143 ± 1.069	
ANOVA test	F= 8.494	p= 0.001	F= 10.812	p= 0.000
Sex				
Male	18.846 ± 3.438		-	
Female	19.516 ± 0.724		17.38 ± 2.1082	
ANOVA test	F = 1.111	p = 0.297	F = -	p =
Educational level				
Illiterate	19.438 ± 0.629		16.750 ± 2.069	
Read & Write	19.636 ± 0.727		17.895 ± 1.997	
Secondary	19.778 ± 0.441		18.000 ± 2.828	
University	19.667 ± 0.577		18.333 ± 1.528	
ANOVA test	F = 0.595	p = 0.622	F = 1.451	p = 0.240

Marital Status				
Married	19.500 ± 0.972		18.333 ± 1.500	
Unmarried	19.556 ± 0.527		17.600 ± 2.171	
Widow / Separated	19.677 ± 0.541		17.032 ± 2.198	
ANOVA test	F = 0.339	p = 0.714	F = 1.420	P = 0.252
Income				
Pension	19.667 ± 0.577		19.167 ± 0.983	
Govt. Old age Pension	19.650 ± 0.662		17.000 ± 2.072	
Dependent on others	19.429 ± 0.535		17.667 ± 2.291	
ANOVA test	F = 0.401	p = 0.672	F = 3.042	p = 0.057

Table 8 shows the impact of age, cognitive status and ambulation capacity on fatigue among the intervention and control groups, assessed using Fatigue Severity Scale (FSS) scores.

Table 8: Fatigue Severity Scale Score (Pre-test)

Factors	**Intervention Group**		**Control Group**	
	FSS score (Pretest)		**FSS score (Pretest)**	
	Mean ± SD		**Mean ± SD**	
Age (in years)				
< 65	47.625 ± 1.628		48.000 ± 1.000	
65 - 75	47.563 ± 1.861		49.278 ± 2.199	
> 75	47.667 ± 2.058		49.571 ± 2.149	
ANOVA test	F= 0.013	p= 0.099	F= 1.283	p= 0.287
Cognitive Status				
Intact cognitive functions	47.122 ± 1.584		48.837 ± 1.926	
Mild cognitive impairments	49.889 ± 0.928		51.000 ± 2.236	
t test	t= 2.438	p= 0.9889	t= 2.4176	p= 0.9769
Ambulation Capacity				
Independent	47.143 ± 1.555		48.641 ± 1.693	
Use cane / walker	50.000 ± 0.894		50.222 ± 2.167	
Wheel Chair	50.500 ± 0.707		54.000 ± 0.000	
ANOVA test	F= 13.635	p= 0.000	F= 10.827	p= 0.000

The mean FSS score of the elderly of age less than 65 was 47.625 for the intervention group and 48.0 for the control group. The mean FSS score of the participants of age range between 65 and 75 was 47.563 for intervention group and 49.278 for control group. But the mean FSS score for age more than 75 was 47.667 for intervention group and 49.571 for control group. The p values for the intervention group was 0.099 and there was no significant difference among both the groups. The mean score for intact cognitive function for the intervention group was 47.122 and 48.337 for the control group. The mean score for the cognitive impairment for the intervention group was 49.889 and 51.000 for control group. The p value was not significant for both the intervention and control group while for the variable ambulation capacity significant difference in both the intervention and control groups were observed.

Table 9 shows the relations between the age, cognitive status and ambulation capacity of the elderly among the intervention and control groups, assessed using Fatigue Severity Scale (FSS) scores after three months of OT interventions. The mean FSS score of for age less than 65 was 34.563 for intervention group and 41.857 for control group. The mean FSS score of the elderly for the age range 65 to 75 years was 35.438 for the intervention group & 44.167 for control group. But the mean FSS score for age more than 75 was 36.222 for intervention group and 45.000 for control group and p values for the intervention group was not significant(p=0.312). The intact cognitive function for the intervention group was 35.000 and 43.977 for control group. The mild cognitive impairment mean score for the intervention group was 37.444, while for control group it was 43.857. The t test values show that there was no significant difference in both the intervention and control group. With regard to the ambulation capacity there was no significant difference in both the intervention and control group.

Table 9: Fatigue Severity Scale Score (After 3 Months)

Factors	**Intervention Group**		**Control Group**	
	FSS score (After 3 months)		**FSS score (After 3 months)**	
	Mean ± SD		**Mean ± SD**	
Age (in years)				
< 65	34.563 ± 2.828		41.857 ± 1.215	
65 - 75	35.438 ± 3.032		44.167 ± 2.261	
> 75	36.222 ± 3.439		45.000 ± 1.826	
ANOVA test	F= 1.194	p= 0.312	F= 4.532	p= 0.016
Cognitive Status				
Intact cognitive functions	35.000 ± 3.098		43.977 ± 2.262	
Mild cognitive impairments	37.444 ± 2.603		43.857 ± 2.340	
t test	t= 2.4602	p= 0.9857	t= 0.1264	p = 0.5485
Ambulation Capacity				
Independent	34.881 ± 2.998		44.103 ± 2.393	
Use cane / walker	37.833 ± 2.137		43.444 ± 1.810	
Wheel Chair	40.000 ± 1.414		43.500 ± 0.707	
ANOVA test	F= 5.321	p= 0.008	F= 0.348	p= 0.708

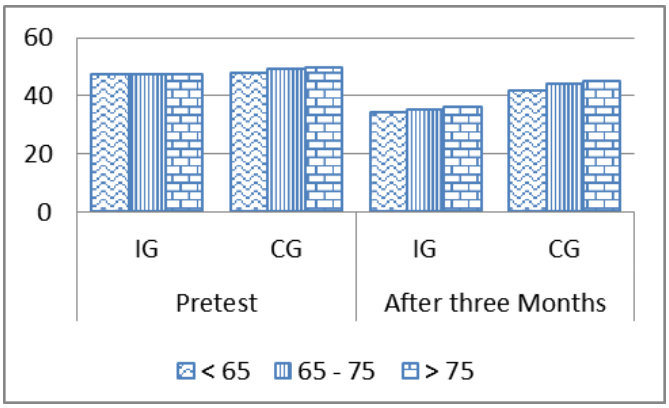


Fig 3: Fatigue Severity Scale Score (Before and After 3 Months)

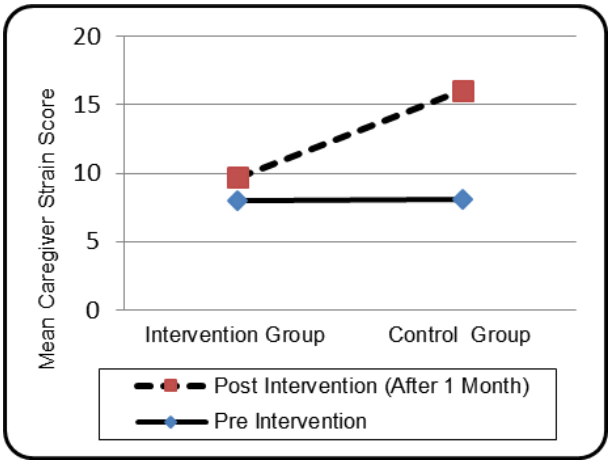
The Caregiver Strain Score changes for the intervention and control group before & after the occupational therapy intervention were also analyzed using paired t test results at different timelines i.e. 1 month, 2 month& 3 months were analysed.

The table 10 shows the mean caregiver strain score for intervention group was 7.98 ± 0.141, and it dropped to 1.720 ± 0.970 after one month. The paired t-test showed that there is a significant difference pre and post intervention ($p < 0.001$). The mean caregiver strain score for control group was 8.1 ± 0.364, and it dropped to 7.980 ± 0.820 for the post control group. There was no significant difference observed in control group ($p = 0.193$).

Table 10: Comparison of Caregiver Strain Score Changes Pre Intervention and Post Intervention in the Intervention and Control Groups (After three months)

Caregiver Strain	Pre Intervention	Post Intervention (After 3 Months)	Statistical Indicators	
	Mean±SD	Mean±SD	t	p
Intervention Group	7.98 ± 0.141	1.720 ± 0.970	45.04	0.00
Control Group	8.100± 0.364	7.980 ± 0.820	0.95	0.17

Table (III) Comparison of Caregiver Strain Score Changes Pre-intervention and Post-intervention in the Intervention and Control Groups (After three months)



In the present study, the caregiver strain index decreased significantly in the intervention group with patient-caregiver education and follow-up program ($P < 0.001$), while the control group no significant difference was observed.

4. Findings

The major findings of the study are detailed below:

The Occupational Therapy Intervention is effective in improving the Activity of Daily Living skill and decreasing the fatigue among geriatric population. The study reveals there is significance difference among the intervention group and control group in terms of ADL skill after 3 months of interventions. The fatigue level has also considerably decreased in the intervention group members.

Occupational Therapy intervention has positive impact on geriatric population in gaining independence in ADL and decreasing the fatigue level and build up confidence among the participants of intervention group. Also the caregivers strain reduces with occupational therapy intervention.

The study has explored a positive relationship in terms of decrease in ADL dependency, decrease in fatigue level as well as caregivers strain after occupational therapy Intervention. The three factors decrease in ADL dependency, decrease in fatigue level and decrease in caregiver's strain are interrelated.

There is correlation between range of motion exercises& muscle strengthening exercises. There was gradual improvement among the intervention group.

Occupational Therapy increases the motivation among the demographic variables (geriatric population) in gaining independence in ADL. The ADL independence and increase in confidence level indicates the improvement.

There is significant correlation between fatigue level and caregivers strain in geriatric population. The fatigue level decreases as the caregiver's strain decreases and improves the participation in community events and ability to adjust in the external environment. The irritability level also reduces.

Frail elderly persons have been benefited with Occupational Therapy intervention. The Occupational Therapy interventions especially the Range of motion exercises were carefully selected to suit the frail elderly. The results of the intervention were positive and the frail elderly were also benefitted.

5. Limitations

There is a need to consider age, socio-economic factor, health, psychological stress and social security related issues.

There is a need to conduct further long term multicentered studies with larger sample size.

The control group had only female participants that may influence the observations.

6. Conclusion

Based on the findings of the present study, it can be concluded that the occupational therapy intervention has a significant and positive effects on the physical and mental health of the elderly population. The following conclusions can be drawn:

The occupational therapy Intervention is effective in improving level of confidence, reducing the stress less level, improving the ROM, posture, physical & mental well-being, and level of independence in Activities of Daily Living, in geriatric population. Also the fatigue level reduces and decreased the caregivers strain.

The decrease in ADL dependency, decrease in fatigue level and decrease in caregivers strain were interrelated. As the fatigue level decreases the caregivers strain also decreases.

The geriatric-caregiver education and follow-up program had a beneficial effect on the caregiver strain index

compared to the usual care. However, the generalized ability of the results may be limited by the relatively short intervention period.

Creating better infrastructures such as installing low vision devices, home modification/adaptation, lighting options, medication management strategies, feeding adaptations, etc. would be more effective for improving quality of care to geriatric patients.

Empowering geriatrics to make physical activity as regular part will reduce the risk of developing a range of chronic and disabling health conditions.

7. Recommendation

Occupational Therapist should incorporate person-centered self-management strategies into intervention with elderly to enhance self-efficacy and maintain participation in valued activities and roles, thus mitigating the negative effects on health and quality of life.

Occupational Therapist should provide adaptation training.

There is a need to promote healthy lifestyles and behavioral changes and address psychosocial issues.

8. References

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