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Original Research Article

AN ACTIVE AGEING MODEL FOR IMPROVING ACTIVITY AND PARTICIPATION OF COMMUNITY DWELLING ELDERLY IN AHMEDNAGAR (INDIA)

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ABSTRACT

Background: Active ageing allows people to realize their potential for physical, social, and mental well-being throughout the life course and to participate in society, while providing them with adequate protection, security and care when they need. Active ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age.

Method: In this study 200 volunteers were recruited from Ahmednagar cities, the screening was done during initial assessment and pre and post assessment was done by the variables, data was analysed and result was calculated.

Procedure: This study guided and Supervised Participation by the Elderly Subjects. Recruitment of subjects done with 200 subjects was recruited from local senior citizen organisation at Ahmednagar (Maharashtra).

Result: The quality of life, TUG score, 10 MWT, Step test score, and Hand grip strength of the elderly population was increased after the intervention. All the variable showed significant p value <0.005.

Conclusion: This study concluded that the active aging programme was an effective means of improving quality of life and physical performance in elderly population.

KEY WORDS: Active Aging, Elderly, Community Dwellers, Rural Area.

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INTRODUCTION

Active ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age. It applies to both individuals and population groups. Active ageing allows people to realize their potential for physical, social, and mental well-being throughout the life course and to participate in society, while providing them with adequate protection, security and care when they need [1].

The word "active" refers to continuing participation in social, economic, cultural, spiritual and civic affairs, not just the ability to be physically active or to participate in the labour force. Older people who retire from work, ill or live with

disabilities can remain active contributors to their families, peers, communities and nations. Active ageing aims to extend healthy life expectancy and quality of life for all people as they age [1].

Human development is conceptualized as a lifelong process with a dynamic interplay of age-connected and age-independent developmental factors, with people explicitly conceived of as agents of own development [2]. "Taking an individual perspective, maintaining activity in later years is linked to successful ageing because of its "empirical relationships to positive self-perception, satisfaction with life, and development of competencies, whereas from a societal perspective, active ageing implies usage of older people's life competencies as a human capital of society—a societal imperative, particularly in times of demographic change but also more basically substantiated in an ethics of responsibility, intergenerational solidarity, and generation equity". With the term "life competencies" we refer to experiences, strategies, and knowledge systems that people have acquired in earlier phases of the lifespan and through lifelong learning process. Life competencies are built up in the context of effective coping and do enable people to maintain or re-establish a personal satisfying perspective on their life when confronted with serious problems, tasks, and challenges in later years [2].

Supporting active ageing is motivated by the superior ambition to substantiate a society for all ages. Consequently, the guiding principles of active ageing explicitly include rights and obligations. "Following the principle of subsidiary, society is considered to be responsible to guarantee adequate opportunities to develop, expand, and realize potentials of old age; older people are considered to be obliged to use the opportunities offered by society to realize a self-responsible and jointly responsible life" [3]. Development and implementation of a model of active ageing will empower the elderly to control and prevent early onset of chronic diseases; it will also improve the quality of life of elderly [3].

It is believed that elderly-collaborative sessions on health and social issues, along with responsibility of self and others, and, through continuing evaluation of the morbidity profile of the elderly, may help the elders to be active wherever they are [4].

AIM AND OBJECTIVES

The aim is the development and implementation of a model on active aging to empower elderly-dwelling individuals at the community level for chronic disease prevention and control in old age through self-promotion, self-care and mutual help.

To find out the impact of the proposed model of active ageing on social participation, functional capacity (strength, balance and walking speed) and risk of fall.

MATERIALS AND METHODOLOGY

Target Population: Elderly (age 60 years old or above) of any socio economic strata residing in each cities belonging to Local Senior Citizen Organizations (at Ahmednagar)

· **Direct Beneficiaries:** Elderly in the community

· **Study Design:** Interventional study

· **Sampling method:** Convenience Sampling

· **Sample size:** A Study Sample of 200 elderly each in the two cities will be identified as explained above. With a significance level of 0.05, a power of 80% and an expected difference in chronic disease incidence of 50% between the pre-intervention and post-intervention.

· **Project Duration:** 12 months (July 2015 to June 2016)

· **Place of study:** City of Ahmednagar, State of Maharashtra, in India;

ELIGIBILITY CRITERIA

Inclusion criteria: Elderly (age 60 years or above, male or female) of any socio economic status willing to participate in the study.

Exclusion Criteria: Subject opting out of the study

· Subject totally dependent on her/his activities of daily living, requiring institutional support and care

· MMSE <23 (Mini Mental Score Examination)

OUTCOME MEASURES

Demographic details (Personal, Medical and

Socio-Cultural Profile): The participants' information was recorded in demographic form and morbidity profile

· Social Participation Profile

· Functional measurements (Quality of life (SF-36), 10 Meters Walking Speed Test, Timed Up & Go Test, Step Test and Hand Grip) were collected/analysed every 4 months.

· Home safety checklist (A Home safety checklist was gather information about hazards and environment fall risks) [8].

· Evaluation of program/feedback of subjects

· Other questions: use/no-use of assistive device, history of fall(s), afraid of fall, vision and hearing problems, number of medications, frailty criteria (loose more than 4,5 Kg (5%) in the last year, sedentary (>4 hours/day >5 days/week sit) [7,8].

STUDY PROCEDURE:

This study guided and Supervised Participation by the Elderly Subjects were facilitated to achieve chronic disease prevention and control in old age through self-promotion, self-care and mutual help.

Recruitment of subjects done with 200 subjects was recruited from local senior citizen organisation at Ahmednagar (Maharashtra). We made 10 group which contains 20 subjects in each group. Informed consent was taken from all subjects.

Demographic profile was collected on age, sex, marital status, education, socio economic status, Information in health information card, blood pressure measurement, present physical activities, medical history, surgical history, use of assistive devices, recent medications, information from pathological and radiological investigation (reported within 90 days before initial assessment).

200 elderly, chosen from local Senior Citizen Organization, was participate in this active ageing model. Ten local supervisors (LS) male or female, equal or more than 60 years of age, chosen (from subjects recruited) by the senior citizen organisations will be trained on self-care, mutual help and self-promotion.

The Sessions (taken in a period of 14 days) would be divided as 10 minutes of theory and 30 minutes of interaction between Physiotherapist/ Nutritionist and local supervisors. The session was end with demonstration of physical exercises to benefit prevention of NCDs (Non-communicable diseases) in older persons. The sessions were as per the following topics.

1. Concept of healthy ageing [7]

2. Physical activity in prevention of non-communicable disease

(Diabetes, Hypertension, Arthritis, Neurodegenerative diseases in older persons)

3. Nutrition, Metabolic diseases, diabetes, hypertension, obesity

4. Accidents at home, burns, falls, medication adherence/error, regarding visits to healthcare providers(polypharmacy)

5. Stress due to sleeping problems, social isolation, abuse

6. Fall prevention

7. Role play and feedback from local supervisors.

The 10 Supervisors would work as Master-trainers trained through a sessions organized in each city. Learning will be facilitated by Physiotherapists, through a social network wherein 10 mutual help groups (having twenty elderly adults in each group), where self-care is a daily practice for chronic disease prevention and control, as well as for achieving maximal functional capacity and social participation.

Table 1: Activities.

1	**Self Help**	1.	Screening and assessment of subjects recruited (n=200)
		2.	Recruitment of 10 Local Supervisor from all subjects (as per guidelines)
		3.	Group formation of 20 older persons
		4.	Sessions on different health issues by a Physiotherapist.
		5.	Physical Exercise demonstration by a Physiotherapist
2	**Mutual Help**	1.	Once a month, group activity focussing on collaborative sessions.
		2.	Guided and supervised by Physiotherapist.
		3.	Motivation of group members by Local supervisor for Group exercise
3	**Self- Promotion**	1.	Self-care, mutual help activities and health promotion

The 10 Supervisors would then work with 20 elderly each in respective groups. Booklets on health and social issues shall be shared with all the 200 members of the network in each of the two cities.

The small group of 10 local supervisors shall meet their members once a fortnight under the supervision of trained physiotherapists.

Local supervisors guidance and supervision of Physical Therapist was encouraged small group activities with local supervisor and their group members once a month.

Data Analysis: Data Analysis was undertaken using SPSS 22 in time frame of4, 8 and 12 months. Following statistical tests were used:

· Trend analysis

· Repeated measures ANOVA

· Paired t test/ Mann Whitney U Test as per normality distribution

· Multivariate regression analysis

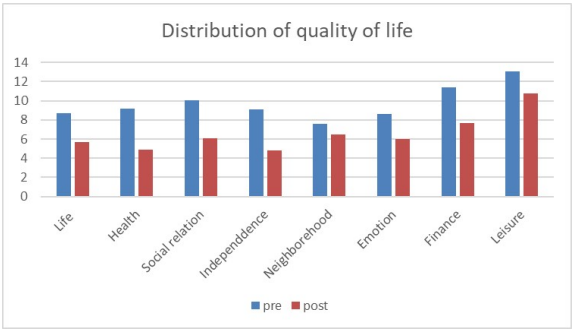
RESULTS

Table 2: Sociodemographic profile.

Items	Percentage, SD
Age*	Male (n= 117, 58.5%, 71.3±2.4)
	Female (n=83, 41.5%, 68.1±5.3)
Gender*	Male (n=117, 58.5%)
	Female (n=83, 41.5%)
BMI*	Male (25.1±3.35),
	Female (28.3 ± 2.68)
Marital status	Married (n=126, 63%, 2.18)
	Divorced (n=05, 2.5%, 5.63)
	Widowed (n=69, 34.5%, 4.21)
Education*	Illiterate (n=139, 69.5%,3.85)
	Literate (n=61, 30.5%, 1.73)
SEC status*	Score III (n=66, 33%, 3.12)
	Score IV (n=102, 51%, 2.65)
	Score V (n=32, 16%, 6.01)
Medical history*	Diabetes (n=53, 26.5%, 3.54)
	Hypertension (n=25, 12.5%, 5.12)
	Arthritis (n= 12, 6%, 5.62)
	Healthy Adults (n=110, 55%, 1.93)

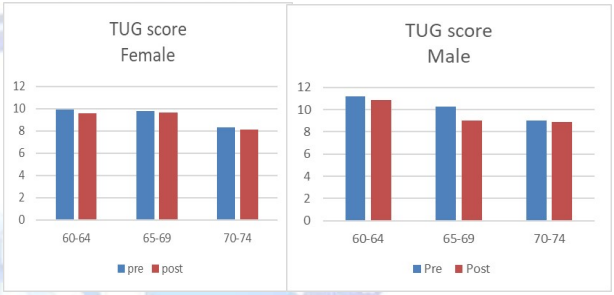
*Significant difference <0.005

It shows the distribution of male and females participated in the study. The total sample was 200 volunteer participants, out of this 58.5% were males and 41.5% were females. The mean age, BMI, marital status, education and related comorbidities were considered.



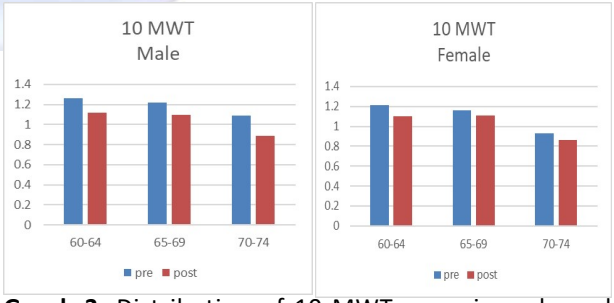
Graph 1: Distribution of quality of life.

Graph no 1 shows the distribution of quality of life of participants in which all the domains of quality of life of all the participants were less but after at the of session the domains mainly life, health, and independence level may have improved.



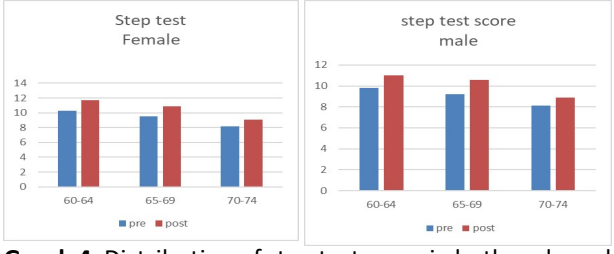
Graph 2: Distribution of TUG score in male and female (pre and post intervention).

Graph 2 showed the distribution of TUG score in both male and female and shows significant p value <0.005. The significant difference was seen in both male and female after the intervention.



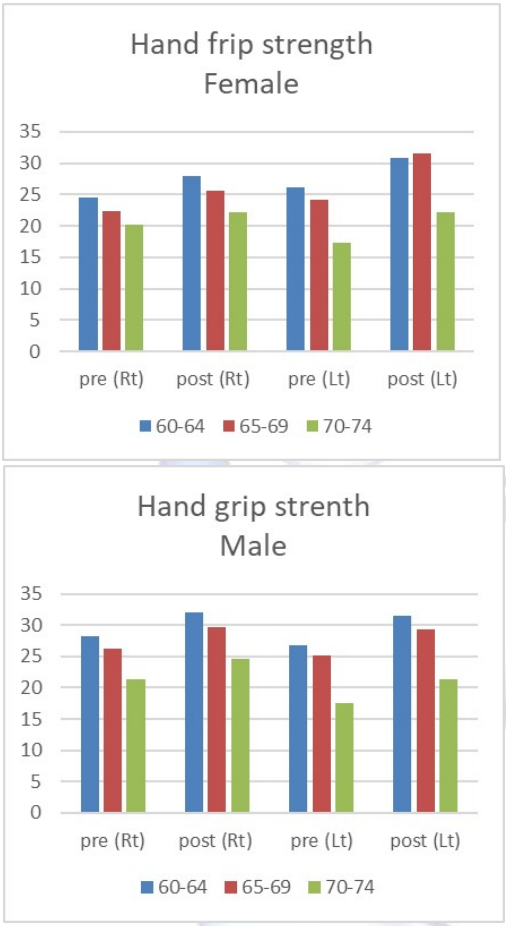
Graph 3: Distribution of 10 MWT score in male and females (pre and post intervention).

Graph no. 3 shows distribution of 10 MWT in which it shows the significant difference after the intervention in both male and female.



Graph 4: Distribution of step test score in both male and female (pre and post intervention).

Graph 4 showed distribution of step test score in both male and female. Significant increase in step test score seen after the intervention with p value < 0.005.



Graph 5: distribution of hand grip strength in both male and female. (pre and post intervention).

Graph 5 shows pre and post intervention of hand grip strength in both male and female. It shows the significant difference < 0.005.

DISCUSSION

This study was carried out to find out whether the active aging program helps in improvement of function of elderly people.

In this study the total 200 participants were included and these participants were grouped according to age. The mean age for male participants was 71.3 and for the female participants the age was 68.1.

We carried out various tests to assess the capability of the elderly person to perform Timed Up and Go test, 10 Meter Walk Test, Step test score, Hand Grip Strength and Quality of Life. The test used showed significant value <0.005.

We conducted pre and post sessions in Ahmednagar district and by analysing the data we found that there was a better performance in the activities of elderly people.

Also there was reduction in symptoms of non-communicable diseases like diabetes, hypertension, arthritis because of the exercise session and it was assessed by post intervention as they followed the instructions given during theory and physical activity session and practised the same.

As the concept of aging helped in obtaining awareness among the elderly person about importance of healthy aging. The components of active aging included physical activity that helped in improving the efficacy of their work.

The people were more enthusiastic about the program as they could meet their friends and other eldel=rs in the community and could share their experiences. It also helped them to get feedback from each other along with it they also engaged in social participation in the community.

Murray, Kory and Clarkson evaluated 64 individuals between 20 and 87 years old who were divided into five-year age groups and noticed that usual gait speed was significantly lower in the three higher age groups than the lowest age group.

TUG test score were improved as they performed exercises and it lead to reduction in the risk of fall. It is estimated that 30% of people aged e”65 fall at least once a year. Falls are one of the most common health related problems in the older population representing more than 50% of the hospital admissions and are also considered one of the main causes for institutionalization and loss of independence (Campbell, 1990; Gillespie et al., 2012; Davies & Kenny, 2000; NICE, 2013; Tinetti, 1988) [6].

Similar study was done by Alan Walker professor of social policy, University of Sheffield, United Kingdom, A strategy for active aging and found that this strategy is goof for citizens of all ages as aging individuals in terms of maximizing potential and QOL through to society as a whole by getting the best from human capital extending community participation and solidarity, avoiding intergenerational conflicts and creating a faire, more inclusive society also unusually it is strategy that makes sound

economic sense by responding to the economic challenge of aging and extending employment and at the time it improve quality of life.

CONCLUSION

This study concluded that the active aging programme was an effective means of improving quality of life and physical performance in elderly population and this study also concluded that the components of quality of life i.e., life, health, and independence were improved, by the TUG test risk fall also reduced, by the step test the physical performance also improved, and the hand grip strength also increased in the elderly population after given the active aging session.

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Conflicts of interest: None

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