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Development and Implementation of Healthy Ageing Model in Community Dwelling Elderly Individuals- Quasi- Experimental Study

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Abstract:

Introduction: Healthy Ageing "as the process of developing and maintaining the **functional ability** that enables **wellbeing** in older age". **Functional ability** is about having the capabilities that enable all people to be and do what they have reason to value. This includes a person's ability to meet their basic needs; to learn, grow and make decisions; to be mobile; to build and maintain relationships; and to contribute to society.

Methodology: Total 80 participants were recruited. The Study setting was rural community area in vadgao-gupta Ahmednagar. Random sampling technique was used. The inclusion criteria were elderly above 60 yrs old were included, Presence of controlled chronic condition individuals was included (hypertension <140/90, blood sugar level 80-130mg/dl)) and ability to perform basic ADL's independently, no clinically significant cognitive impairment (mmse>=24). The exclusion criteria were Terminal illness (life expectancy less than 6months), unstable or uncontrolled co-morbidities were excluded. Those who were not willing to participate were excluded.

Procedure: This healthy ageing model implemented on elderly individuals for the two weeks and pre and post data were taken. **6**-Minute Walk Test (meters) for the Endurance, Timed Up and Go Test (seconds) for Balance & Risk of Fall, 30-Second Sit to Stand Test (reps)for Strength & Endurance and Geriatric Depression Scale Score for Depression,Older People Quality of Life(OPQOL),Mini-cog Scale for Cognitive impairment were assessed with help of these outcome measures and data was analysed.

Result: This study examined the 80 elderly individuals. **Table 1** shows the demographic data regarding age, gender, education level and occupation level. The average age of elderly individual was 68.5 ± 5.2 . There were 45 male and 35 female participants. **Table 2** shows the pre and post values for the 6-Minute Walk Test, Timed Up and Go Test, Sit to Stand Test, geriatric depression scale and quality of life scale which shows p-value 0.001(significant). Figure 1, 2,3 and 4 shows the graphical representation of all the outcome measures.

Conclusion: A healthy aging model for rural community was developed and it is found to be more effective in rural community population in Ahmednagar. The healthy aging model has the advantage of reflecting the perspectives of rural community elderly and of including a positive health dimension, allowing it to encompass a wide spectrum of aspects of health-related quality of life.



Keyword: Healthy ageing model, Quality of life

Introduction:

Older people are a valuable resource for any society. Ageing is a natural phenomenon with opportunities and challenges. According to Census 2011, India has 104 million older people (60+years), constituting 8.6% of total population. Amongst the elderly (60+), females outnumber males.⁽¹⁾

Increase in longevity and decline of joint family and breakdown in social fabric pushes seniors into loneliness and neglect. A heathy life, with physical activity, good diet, avoiding tobacco, alcohol and other habit-forming substances is recommended. Positive attitude and mental wellbeing promote quality of life in advancing years.⁽¹⁾

Government of India's National Policy on Older Persons 1999, Maintenance and Welfare of Parents and Senior Citizens Act, 2007 and National Policy for Senior Citizens 2011, provide the legal framework for supporting the needs of seniors. The National Programme for Health Care of Elderly and Health and Wellness Centres under the Ayushman Bharat programme provide dedicated healthcare to elderly at primary health care settings.⁽¹⁾

Globally, demographic patterns across all nations have changed considerably over the past century, recognized as an achievement for humanity.⁽²⁾ Factors, such as decreased mortality rates, decreased birth rates, and migration trends, contribute to changes in population structure, and thus, can be directly related to population aging.⁽²⁾ Defining 'older' persons, however, has been challenging across low-, middle- and high-income nations, compelling the United Nations to establish the definition of 'older' persons as those persons over age 60 years. As the global population of older persons is estimated to increase from 11% in 2000 to 22% in 2050, population aging will clearly transform all aspects of society, ranging from changes in economic security, employment opportunities, family structure, housing resources, and transportation services.⁽³⁾

Healthy Ageing "as the process of developing and maintaining the **functional ability** that enables **wellbeing** in older age". **Functional ability** is about having the capabilities that enable all people to be and do what they have reason to value. This includes a person's ability to meet their basic needs; to learn, grow and make decisions; to be mobile; to build and maintain relationships; and to contribute to society. Functional ability is made up of the **intrinsic capacity** of the individual, relevant **environmental characteristics** and the interaction between them. Every person – in every country in the world – should have the opportunity to live a **long and healthy life**. Environments are highly influential on our behaviour, our exposure to health risks (for example air pollution, violence), our access to quality health and social care and the opportunities that ageing brings.⁽⁴⁾

Healthy ageing aims to extend healthy life expectancy and quality of life for all people as they age, including those who are frail, disabled and in need of care. Healthy ageing depends on a variety of influences or "determinants" that surround individuals, families and nations.⁽⁴⁾ Aim of the study is to provide awareness and training about healthy ageing model in community dwelling elderly individuals.

Methodology:

Total 80 participants were recruited. The Study setting was rural community area in vadgao-gupta Ahmednagar. Random sampling technique was used. The inclusion criteria were elderly above 60 yrs old were included, Presence of controlled chronic condition individuals was included (hypertension <140/90, blood sugar level 80-130mg/dl)) and ability to perform basic ADL's independently, no clinically



significant cognitive impairment (mmse>=24). The exclusion criteria were Terminal illness (life expectancy less than 6months), unstable or uncontrolled co-morbidities were excluded. Those who were not willing to participate were excluded.

Procedure:

This study was conducted in the rural community and Physiotherapy OPD. The study protocol was approved by the Institutional Ethical Committee of College of Physiotherapy. The assessment was done on elderly individuals. Written informed consent was obtained from all participants after the explanation of the details of this study and its benefits and risk in their own language the patient able to understand. The demographic data were obtained from assessment form. On the basis of WHO Healthy ageing model, this healthy ageing model was developed for the rural elderly population. This healthy ageing model includes Personal Determinants, Health & social services and Behavioral Determinants. Personal Determinants includes Psychological problems, ability to solve problems activities given i.e. simple calculations, memorizing poems, songs etc. The Health & social services determinant includes Health promotion, quality of life and the Behavioral Determinants includes Physical exercises like Resistance training, Aerobic training, Balance training, Flexibility. This healthy ageing model implemented on elderly individuals for the two weeks and pre and post data were taken. 6-Minute Walk Test (meters) for the Endurance, Timed Up and Go Test (seconds) for Balance & Risk of Fall, 30-Second Sit to Stand Test (reps)for Strength & Endurance and Geriatric Depression Scale Score for Depression,Older People Quality of Life(OPQOL), Mini-cog Scale for Cognitive impairment were assessed with help of these outcome measures and data was analysed.

Unpaired t-test and descriptive data (mean, standard deviation) was used to analyzed the data.

Result:

This study examined the 80 elderly individuals. **Table 1** shows the demographic data regarding age, gender, education level and occupation level. The average age of elderly individual was 68.5 ± 5.2 . There were 45 male and 35 female participants. **Table 2** shows the pre and post values for the 6-Minute Walk Test, Timed Up and Go Test, Sit to Stand Test, geriatric depression scale and quality of life scale which shows p-value 0.001(significant). Figure 1, 2,3 and 4 shows the graphical representation of all the outcome measures.

Variable	Mean ± SD / Frequency (n)	Percentage (%)	
Age (years)	68.5 ± 5.2		
Gender			
Male	45	56.25%	
Female	35	43.75%	
Marital Status			
Married	60	75%	
Widowed	18	22.5%	
Unmarried/Divorced	2	2.5%	
Education Level			

Table No 1: Demographic Data



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No Formal	10	12.5%
Education		
Primary	25	31.25%
Secondary	30	37.5%
Graduate and Above	15	18.75%
Occupation (Past)		
Retired Govt/Private	25	31.25%
Job		
Farmer/Laborer	30	37.5%
Homemaker	20	25%
Business	5	6.25%
MMSE Score	26.8 ± 1.9	-

Table I	No. 2:	Pre	and	Post	Values
		-			

Outcome Measure	Pre-	Post-Intervention	p-value
	Intervention	(Mean ± SD)	
	(Mean ± SD)		
6-Minute Walk Test	310.4 ± 65.2	360.7 ± 68.5	< 0.001
(meters)			
Timed Up and Go	14.8 ± 2.5	12.2 ± 2.1	< 0.001
Test (seconds)			
30-Second Sit to	10.5 ± 2.3	13.6 ± 2.8	< 0.001
Stand Test (reps)			
Geriatric Depression	8.2 ± 2.1	5.7 ± 1.8	< 0.001
Scale Score			







Figure 2: Shows Timed and go test pre & post values



Figure 3: Shows 30 second sit to stand test pre & post values



Figure 4: Shows Geriatric depression scale pre & post values



Discussion:

In this healthy aging model three determinants are selected with expert's suggestion that was on the basis of health condition and physical performance of rural community elderly individuals. Firstly, the active aging model of world health organization for elderly was administered in that health and social services, behavioral determinants, social determinants, economic determinant and physical environment and personal determinants are present. With the help of expert group three items were excluded from this model these were economic determinants, social determinants and physical environment because this determinant was not matching with the elderly's day to day life in rural community population. ⁽²²⁾

With considering all the aspects of elderly individual's life this model was developed. Also, to checked the physical performance, balance and risk of fall tests were administered on rural community elderly individuals. TUG test was used to checked the risk of fall in elderly individuals and for physical performance 30 seconds chair stand were performed. 6 minutes-walk test were taken for endurance. All these tests were taken before and after the intervention. Before given the intervention mean test score was



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low and that was not clinically significant (p=0.06). After given the intervention to the elderly individuals the mean test score was increased and also it is significant (p=0.001) & 80% people were satisfied with this rehabilitation program.

Maria Fernanda Rivadeneira et.al conducted study on A multidimensional model of healthy ageing: proposal and evaluation of determinants based on a population survey in Ecuador. Sample was 1797 adults aged 65 years or more. For the analysis, two groups were created: a healthy ageing and a less healthy ageing group. This study contributes with a multidimensional approach to healthy ageing. It proposes to evaluate the intrinsic capacity of the individual, the social and political environment and the interaction with it, through indicators that discriminate who are ageing in a healthy way and who are not. By using this model, it was identified that gender and economic situation seem to play an important role on heathy ageing of the Ecuadorian population.⁽²³⁾

Conclusion:

A healthy aging model for rural community was developed and it is found to be more effective in rural community population in Ahmednagar. The healthy aging model has the advantage of reflecting the perspectives of rural community elderly and of including a positive health dimension, allowing it to encompass a wide spectrum of aspects of health-related quality of life.

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