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Dr. Mansi Manoj Mulye
Assistant Professor,
Occupational Therapy School
& Centre, LTMMC, Sion,
Mumbai, Maharashtra, India

Dr. Mohak Sharma
Occupational Therapist,
Occupational Therapy School
& Centre, LTMMC, Sion,
Mumbai, Maharashtra, India

Dr. Pooja More
Occupational Therapist,
Occupational Therapy School
& Centre, LTMMC, Sion,
Mumbai, Maharashtra, India

Dr. Rucha Sawant
Occupational Therapist,
Occupational Therapy School
& Centre, LTMMC, Sion,
Mumbai, Maharashtra, India

Corresponding Author:
Dr. Mansi Manoj Mulye
Assistant Professor,
Occupational Therapy School
& Centre, LTMMC, Sion,
Mumbai, Maharashtra, India

The relationship between level of participation and quality of life in the community-dwelling geriatric population with and without mild cognitive impairment: A cross-sectional study

Mansi Manoj Mulye, Mohak Sharma, Pooja More and Rucha Sawant

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Abstract

Aging, an inevitable process, is commonly measured by chronological age and, as a convention, a person aged 60 years or more is often referred to as 'elderly'. Aging is associated with changes in dynamic biological, physiological, environmental, psychological, behavioral, and social processes. Cognition is defined as the acquisition of knowledge. correlation between aging and cognition is a dynamic interplay of factors. Cognitive function is central to participation in everyday life. Participation is the ability of a person to engage in various tasks in a home, work, and community environment. The quality of life of an individual depends on participation. Quality of Life (QOL) is an individual's perception of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards, and concerns. This study aims to find the relationship between the participation of older individuals residing in urban areas and its relationship to their overall quality of life and the impact of mild cognitive impairment and its effect on social engagement and overall quality of life. The study concludes the participation restriction with decreased overall QOL in subjects with MCI, compared to subjects with no cognitive impairment.

Keywords: Cognition, participation, quality of life

Introduction

Aging, an inevitable process, is commonly measured by chronological age and, as a convention, a person aged 60 years or more is often referred to as 'elderly'. According to the National Policy for Older Persons 1999, people aged more than 60 years are considered to be a part of the geriatric population ^[1]. Aging is associated with changes in dynamic biological, physiological, environmental, psychological, behavioral, and social processes. This process is highly complex and multifaceted, involving various systems and functions. The changes can include a decline in muscle mass, bone density, and organ function, as well as alterations in cognitive abilities and sensory perception ^[2]. Cognition is defined as the acquisition of knowledge, which involves Endurance Specific Cognitive Abilities & Executive functions ^[3]. The correlation between aging and cognition is a dynamic interplay of factors that decline in certain cognitive abilities, such as processing speed and memory, language, visuospatial functions, and executive function is called Mild Cognitive Impairment (MCI) ^[4]. People with MCI experience mild problems in thinking and memory that do not interfere with daily living activities. This memory impairment interferes with complex daily activities. They are functionally independent but may be less socially active. Active engagement in social activities is considered to be beneficial for the maintenance of cognitive abilities in the geriatric population. Cognitive function is central to participation in everyday life. Participation is the ability of a person to engage in various tasks in a home, work, and community environment ^[5]. Social participation is a critical element of active aging and has been associated with improved health, quality of life, and functional abilities ^[3]. WHO defines Quality of Life (WHO-QOL) as an individual's perception of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards, and concerns ^[5]. There is an established relationship between participation and quality of life ^[3].

Various studies have found a relationship between social engagement and quality of life but this association is not established in the Indian population. The role of cognitive decline in aging individuals is well established but its role in the limitation of participation is yet to be explored. This study aims to find the relationship between the participation of older individuals residing in urban areas and its relationship to their overall quality of life and the impact of mild cognitive impairment and its effect on social engagement and overall quality of life.

Methods

A Cross-sectional study on community-dwelling geriatric patients was conducted to study participation and QOL in the Mumbai Suburban. The study was conducted adhering to the principles of 'Declaration of Helsinki'. The Convenient Sampling method was used to screen 100 individuals out of which 65 individuals met the inclusion criteria (male & female community-dwelling elderly

persons- Aged 60+ years, who scored between 18-30 on Montreal Cognitive Assessment). Individuals with physical disabilities and major illnesses and people with moderate to severe cognitive impairment were excluded. Signed and informed consent was taken along with socio-demographic and clinical data associated with personal and contextual factors. The Montreal Cognitive Assessment (MoCA) scale [6] was administered while the Participation scale (P-Scale) [7] & WHO-Quality of Life-BREF Scale [8], based on the individual's perception, were used to collect data on the mean variable Activity participation and QOL. The screening and evaluation took about 60 minutes. Data was collected and analyzed by using window-based IBM SPSS Statistics 23.

Results

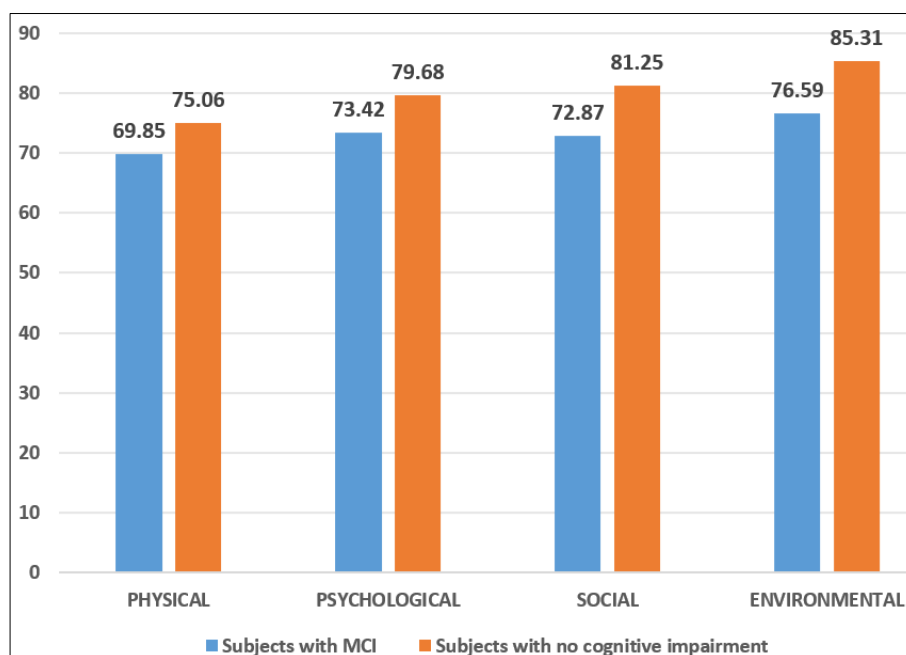
Table 1 shows the distribution of subjects with MCI and No cognitive impairment on the participation scale.

Table 1: The distribution of subjects with MCI and No cognitive impairment on the participation scale

Level of Participation Restriction	Subjects with Mild Cognitive Impairment	Subjects with No Cognitive Impairment
None	43	15
Mild	2	0
Moderate	0	1
Severe	4	0
Extreme	0	0

Graph 1 shows the Quality of Life of all subjects as per WHO-QOL BREF in all 4 domains. The mean scores of WHO-QOL BREF in Physical, Psychological, Social, and

Environmental domains are 71.14, 74.97, 74.94, and 78.74 respectively.



Graph 1: Mean Score of WHO-QOL BREF of Subjects with MCI & No cognitive impairment

Karl Pearson's Correlation test was used for correlation between variables for 3 groups as statistical tests of

significance (*p* value < 0.05). Table 2 shows correlation between WHO-QOL-Bref & Participation Scale.

Table 2: Correlation between WHO-QOL-Bref & Participation Scale

Whoqol-Bref Domains	Participation			
	Subjects with MCI		Subjects with no cognitive impairment	
	P value	R Value	P value	R value
Physical	0.05	-0.7723***	0.05	-0.137*
Psychological	0.05	-0.5397***	0.05	+0.2212
Social	0.05	-0.3175**	0.05	-0.045*
Environmental	0.05	-0.581***	0.05	-0.0928*

*Significant, **Moderately Significant, ***Highly Significant

Discussion

A total of 100 community-dwelling geriatric population from Mumbai Sub-urban, aged above 60 years, were approached and screened using the MoCA. 65 subjects met the inclusion criteria of having no cognitive impairment (MoCA score between 26 and 30) or mild cognitive impairment (MoCA score between 18 and 25). The Participation Scale (P-Scale) and the WHO Quality of Life BREF scale (WHO-QOL BREF) were administered to the included 65 subjects. This study was conducted to find the correlation between the participation of individuals and its effect on their Quality of Life. Out of 65 subjects, 36 were females and 29 were males. Among which 20 Males and 29 Females had Mild Cognitive Impairment, whereas 9 Males and 7 Females had No Cognitive Impairment.

In this study, among subjects with MCI, 43 subjects had no restriction in participation, 2 subjects had mild restrictions in participation, 4 subjects had severe restrictions in participation; whereas in subjects with no cognitive impairment, 15 subjects had no restriction in participation, 1 subjects had moderate restrictions in participation. This shows that most community-dwelling subjects participate in their routine activities and socially engage with other people with cognitive impairment not affecting it. As per the activity theory of aging, normal aging is a continuing engagement in meaningful occupations and relationships. Most of the subjects, even with mild cognitive impairments, had a continuing active lifestyle unless they had significant physical impairments. The similar results were observed in the study by Sima Ataollahi Eshkoor *et al*, that Mild cognitive impairment is a common condition in the elderly and does not have a significant effect on daily living activities [9].

The Quality of Life of the subjects as per WHO-QOL BREF in all 4 domains (Physical, Psychological, Social, and Environmental) were studied for both the cognitive groups. The multifactorial nature, that is, demographic factors, and clinical and behavioral factors influenced the QOL among the elderly. The influence of age on quality of life can be due to a direct effect of aging and indirectly through the effect of aging on factors that influence the quality of life. Self-care decreases when people enter the aging process and heavily rely upon others for daily activities, thus decreasing the QOL.

This goes in favour with the study by Mélanie Levasseur *et al*, that when the activity level was more limited, the participation level was further restricted and the physical environment was perceived as having more obstacles. No differences were observed for facilitators in the physical and social environment or for obstacles in the social environment. This study suggests that older adults' participation level and obstacles in the physical environment differ according to their activity level [10]. Also, in the study by Edmond Teng *Et al*, stated that Significant declines in

QOL are seen in MCI & associated with neurological symptoms & functional decline [11].

We have observed that in subjects with MCI, though there is no marked participation restriction, the subject's QOL decreases, compared to subjects with no cognitive impairment. Quality of life and satisfaction with participation also differ but only when activity level is sufficiently disrupted. Older adults with activity limitations have been known to experience an increased sensitivity to physical barriers in the environment. A study by K. Ahmad and M. Hafeez in 2011, Factors affecting social participation of elderly people in Lahore indicated that older individuals' social participation was significantly associated with severely limiting chronic conditions, widowhood status, and gender. Chronological age is largely attributed to reduced participation in social life [12].

Conclusion

The study was conducted on the geriatric population with and without mild cognitive impairment, to find out the correlation between participation and quality of life. The study concludes the marginal participation restriction with decrease overall QOL in subjects with MCI, compared to subjects with no cognitive impairment.

Limitations

The participation and quality of life data of this research came from subjective answers of aged people. Since this study deals with the elderly population there are chances of recall bias. Due to a lack of time and resources the study team adopted a convenient sampling procedure and this study could be treated as a preliminary outcome to further study. Small sample size. This study used a cross-sectional design that does not indicate any direction between the associations. During the data collection exercise, many times, elderly people were expecting some monetary benefits for sharing their details. However, after knowing the study was only for purposes, their side was reluctant to actively participate. We could not study all factors such as that affect the quality of life of the elderly due to feasibility constraints.

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Recommendations

Random Sampling Method should be used for a better understanding of the population. A larger sample size.

Multi-centric data should be collected. Appropriate prevention and intervention strategies must be emphasized at a local and community level to ensure a healthier & independent living which will ultimately improve Quality of life.

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