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"Quality Of Life In Elderly Individuals With Physical Disability Among Rural Population: A Cross Sectional Study"

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ABSTRACT :
Background : In India, the total population of elderly in 2011 was 8.2% and this number is expected to increase dramatically over 40 years approximately till 19% in 2050. The link between aging and disability is a biological fact, and disability in the elderly is an important health indicator pointing to jeopardized quality of life. The International Classification of Functioning, Disability and Health (ICF) defines disability as an umbrella term for impairments, activity limitations and participation restrictions. Disability has affected the quality of life of the disabled individual mainly in the older population.
Aim : To assess quality of life (QOL) in elderly individuals with physical disability.
Methodology: Research Design – Cross Sectional Study **Sampling Method –** Purposive Sampling **Study Setting (Location of study):** The study is done in villages at Ahmednagar district. **Targeted Population:** Physically Disabled elderly individual aged above 60 in both genders male and female
Result: The WHOQOL BREF Scale's physical domain showed positive corelation with Kuppuswamy scale which was statistically significant. The study also showed positive correlation of WHOQOL BREF Scale with Katz Index Scale which was statistically significant. The study showed negative correlation of WHOQOL BREF Scale with disability percentage which was statistically significant.
Conclusion: The study concluded that quality of life in elderly physically disabled population of rural area is moderately influenced by their socioeconomic status, their activity of daily living and their disability percentage.
Keywords: *ADLs – Activity of Daily Living, WHO – World Health Organization, QOL – Quality of Life*

INTRODUCTION

The National policy of older people has well defined the "Senior citizen" & "Elderly" people are 60 years & above.[1] In India, the total population of elderly in 2011 was 8.2% and this number is expected to increase dramatically over the 40 years approximately till 19% in 2050.[1,2] The International Classification of Functioning, Disability and Health (ICF) defines disability as an umbrella term for impairments, activity limitations, and participation restrictions.[3,4]

The Result of Pilot Study done in India of Longitudinal Aging showed the result of 13% of the older Indians consists of some or the other type of disability which affects atleast one of the ADL or activity of daily living.[5] According to 2001, census data India had 2.1% disabled population and disability in the movement was observed in 27.8% population.[7] Disability has affected the quality of life of the disabled individual mainly in the older population.[8]

World Health Organization (WHO) has said person with different types of disability are often of diverse and heterogeneous. Hence, the environment factors, personal factor and the health interaction has a major impact in experiencing disability by the individual. In physically disabled people there are many restriction in participation of social activities as compared to non physically disabled people, this ultimately causes the lower level of well being, also with the poorer quality of life. But it is even found that the individual with low level of disability doesn't have the higher level quality of life.[9,10]

An individual suffering from physical disability has their own attitudes towards disability this is an important subjective factor; this can be associated with the severity of disability and also affects their quality of life. The other studies shows that negative attitude towards the disability affects and hampers the physically disabled peoples quality of life, the role of person with physical disabilities own attitude towards disability between the severity of disability and QoL remains unknown.[11]

According to census of India 2011, Maharashtra District, Census Handbook Ahmednagar, Nagar Sub-District contains Total Population of 304,199 person, Rural Division consists of 255,862 persons, while Urban Division consists of 48,337 persons. The study attempted to explore and understand disability, particularly in the light of its psychological and social impacts. The results of this study are expected to help us understand in detail the impact of disability on the quality of life of disabled people in rural sector of Ahmednagar.

LITERATURE REVIEW:-

1) **KUNAL KUVALEKAR, ET AL, (2015)** conducted study on quality of life among persons with physical disability in Udupi Taluk, it was a cross sectional study. The aim was to assess the quality of life (QOL) of physically disabled persons, the impact of physical disability on activities of daily living (ADL) and to study the awareness about laws and facilities available for disabled persons. The method of this study was a cross-sectional community based study which was conducted among 130 physical disabled persons which were selected using convenience sampling technique. The WHO BREF scale was used to assess QOL, while assessment of ADL was done using Barthel Index. Socio-demographic assessment was done using Udai Pareek scale.The study concluded that Physical disability had affected social participation as well as marriage of the respondents.

2) **G.M. MONAWAR HOSAIN ET AL, (2002)** conducted study on Impact of Disability on Quality of Life of Rural Disabled People in Bangladesh. This study examined the impact of disability on the quality of life of disabled people in rural Bangladesh. The study revealed that disability had a devastating effect on the quality of life of the disabled people with a particularly negative effect on their marriage, educational attainment, employment, and emotional state. Collaborative communication between professionals and parents, behavioural counselling, formation of a self-help group, and comprehensive support to families will reduce their suffering.

3) **RACHEL DEVITT ET AL, (2004)** conducted study on The Effect of Wheelchair Use on the Quality of Life of Persons with Multiple Sclerosis. This pilot study describes the effect of wheelchair use on the quality of life of persons with multiple sclerosis (MS), and examines the clinical utility of the Psychosocial Impact of Assistive Devices Scale (PIADS) as an outcome measure for use by occupational therapists. Results suggest that using a wheelchair has a positive impact on the quality of life of persons with MS. The PIADS was found to be clinically useful for exploring person-environment interactions and appears to be well suited to the goals and values of occupational therapy.

4) **JENNIFER KING ET AL**., conducted study on Quality of Life in Late-Life Disability: "I Don't Feel Bitter Because I Am in a Wheelchair" with objectives to determine perceived quality of life in a diverse population of elderly adults with late-life disability. Elderly adults who scored higher than 17 points on the Mini-Mental State Examination were interviewed. Respondents were asked to rate their overall quality of life on a 5-point scale. Open-ended questions explored positive and negative aspects of participants' daily

experiences. Interviews were analyzed using modified grounded theory and digital coding software. Most themes could be grouped into four domains that dependent elderly adults considered important to their quality of life: physical (e.g., pain), psychological (e.g., depression), spiritual or religious (e.g., religious coping), and social (e.g., life-space). It concluded that Factors that influence quality of life in late-life disability were similar across ethnic groups.

5) **MYUNG KYUNG LEE** conducted study on Disability and quality of life in community-dwelling elderly cancer survivors: Case-control study in the Korean population. The study analyzed Advanced age is a significant risk factor for cancer and functional disabilities increase with age. This study is a case-control study of Korean individuals was to determine the effect of cancer and cancer treatment on functional disability and quality of life (QOL). They compared community dwelling elderly cancer patients (ECPs) with individuals from the general elderly population (GEP) who never had diagnoses of cancer. Functional disability was measured using the Instrumental Activities of Daily Living (IADL) scale, and QOL was measured by the EuroQol Group EQ-5D. This study concluded that ECPs had multiple physical and psychological symptoms that adversely affected functional disability and QOL, but higher functional ability, such as self-care and handling of financial responsibilities. Promotion of self-care by ECPs is pivotal for effective management in community practice.

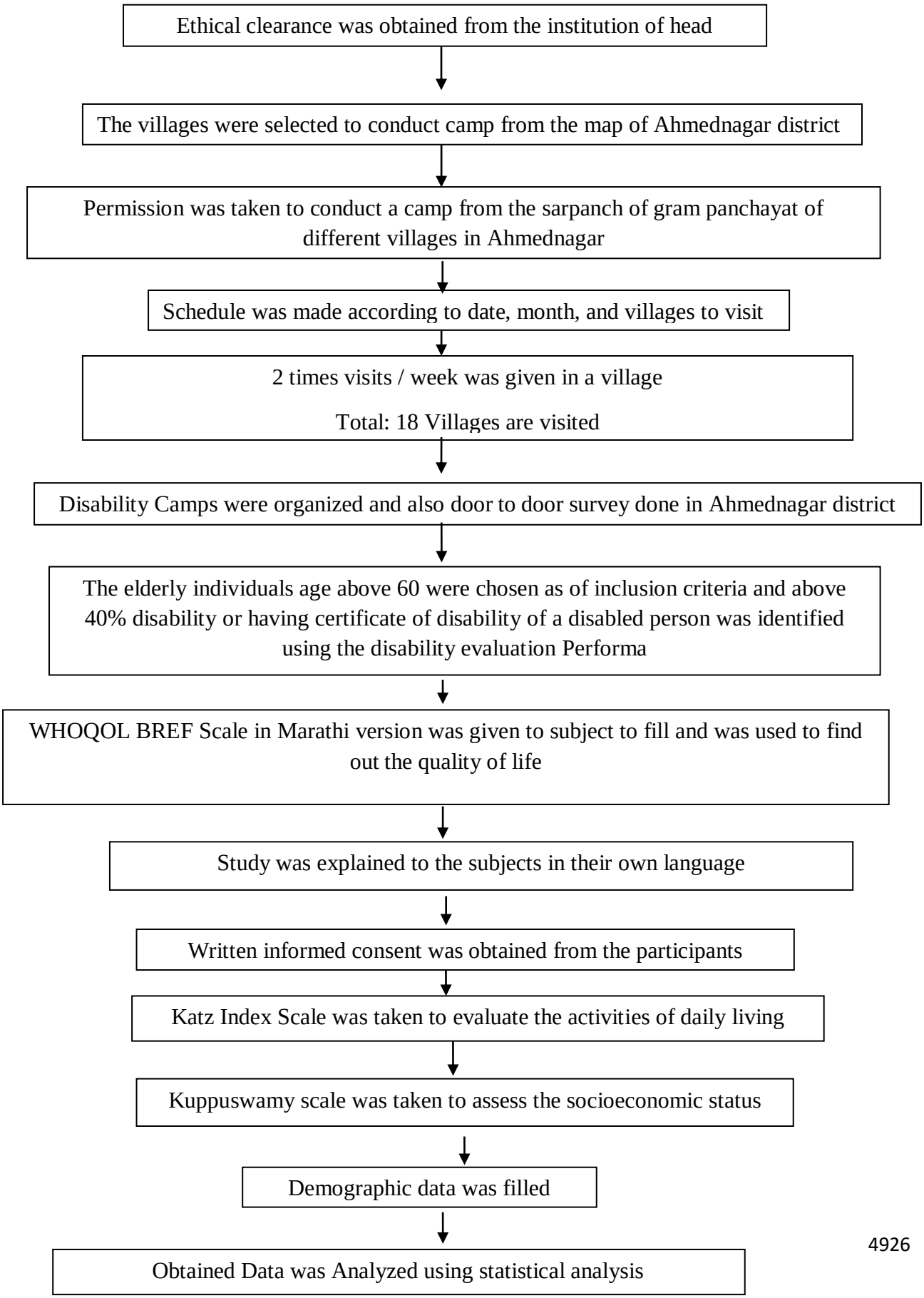
MATERIALS AND METHODOLOGY

This study was designed to find out the quality of life (QOL) in elderly individuals with physical disability. The objectives of the study were to assess the impact on overall quality of life in physically disabled elderly individual based on physical, psychological, social, environmental domains. Also to evaluate the disability percentage in physically disabled elderly individual & its relationship with quality of life domain. The level of Activity of daily living performance in physically disabled elderly individual was assessed by using Katz index scale & its relationship with quality of life domains was found out.

The study was done in villages at Ahmednagar district**.** Physically Disabled elderly individual aged above 60 in both genders male and female were selected for the study. Persons having disability including loss or absence or inactivity of whole or part of hand or leg or both due to amputation, paralysis, deformity or dysfunction of joints which affected his/ her "normal ability to move self or objects." and with physically disabled greater than 40% were included in the study. Participants were excluded from the study on the basis of physically disabled lesser or equal to 40%, functionally independent, medically unstable, and mentally challenged participants.

Study design was Cross sectional study. Requisite permission and approval was obtained from head of the institution and institutional ethical committee before the commencement of work and the study was carried out for one year from January 2017 to January 2018. A purposive sampling method was used for current study. Sample size came out to be 127 after analyzing it in open epi software using the confidence level at 80%. The Outcome Measures used for the study were WHOQOL BREF Scale (Marathi Version), Kuppuswamy Scale and Katz Index Scale.

PROCEDURE


Ethical clearance was obtained from the institution of head
The villages were selected to conduct camp from the map of Ahmednagar district
Permission was taken to conduct a camp from the sarpanch of gram panchayat of different villages in Ahmednagar
Schedule was made according to date, month, and villages to visit
2 times visits / week was given in a village
Total: 18 Villages are visited
Disability Camps were organized and also door to door survey done in Ahmednagar district
The elderly individuals age above 60 were chosen as of inclusion criteria and above 40% disability or having certificate of disability of a disabled person was identified using the disability evaluation Performa
WHOQOL BREF Scale in Marathi version was given to subject to fill and was used to find out the quality of life
Study was explained to the subjects in their own language
Written informed consent was obtained from the participants
Katz Index Scale was taken to evaluate the activities of daily living
Kuppuswamy scale was taken to assess the socioeconomic status
Demographic data was filled
Obtained Data was Analyzed using statistical analysis

STATISTICAL ANALYSIS

The Software used for the statistical analysis was done by Statistical Package for Social Sciences (SPSS) release 20.0 version and Graph Pad 6.0 version and $p<0.05$ is considered as level of significance ($p<0.05$) for Windows was used for data analysis. The Pearson Correlation coefficient test was used to correlate between the Quality of life domains, Kuppuswamy Scale, Katz Index Scale.

RESULTS

Table 1: Gender wise distribution in physically disabled elderly individual

Gender	Number of Subjects (n=127)
Male	89
Female	38
Total	127

Graph no. 1: Pie diagram showing of gender wise distribution in physically disabled elderly individuals

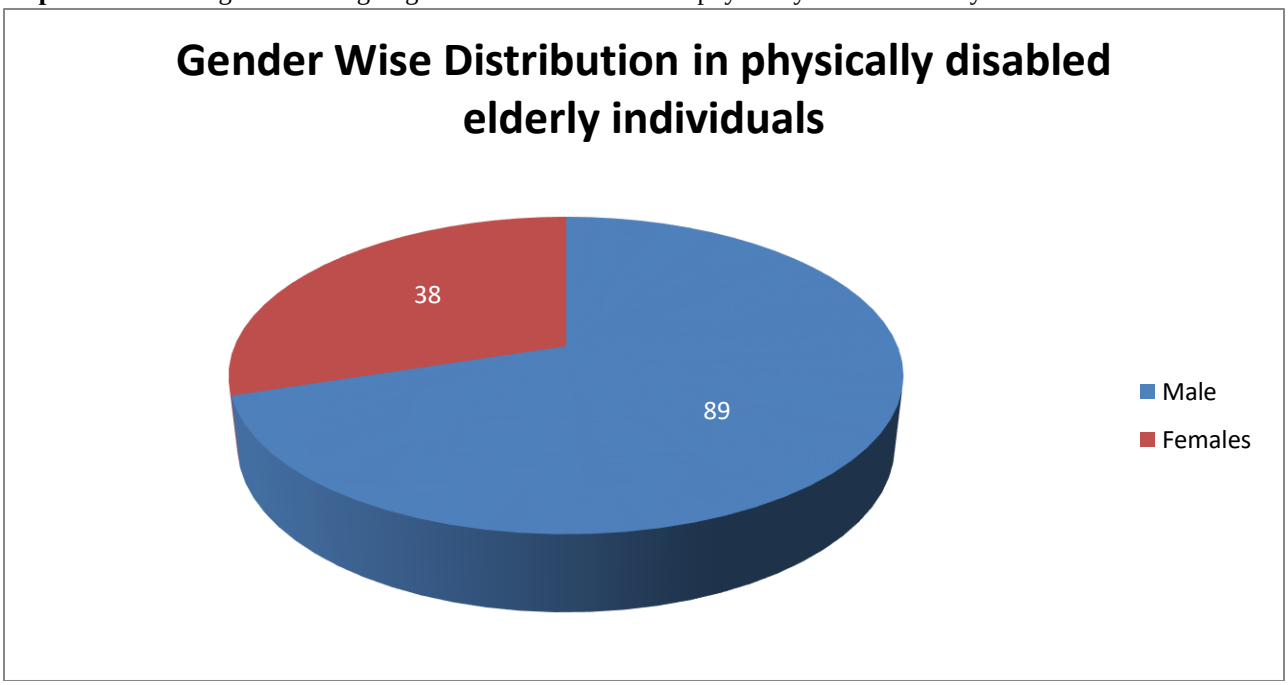


Table No. 2: Mean values of Kuppuswamy Scale Score, Katz Index Scale Score and Disability Percentage In Male And Female In Physically Disabled Elderly Individuals

Scale	Male (n=89) Mean ± SD	Female (n=38) Mean ± SD	Total (n=127) Mean ± SD
Kuppuswamy Scale Score	9.53 ± 4.30	10 ± 3.51	9.67 ± 4.07
Katz Index Scale Score	4.07 ± 1.41	4.23 ± 1.45	4.12 ± 1.42
Disability % Score	52.19 ± 7.07	52.52 ± 8.22	52.29 ± 7.40

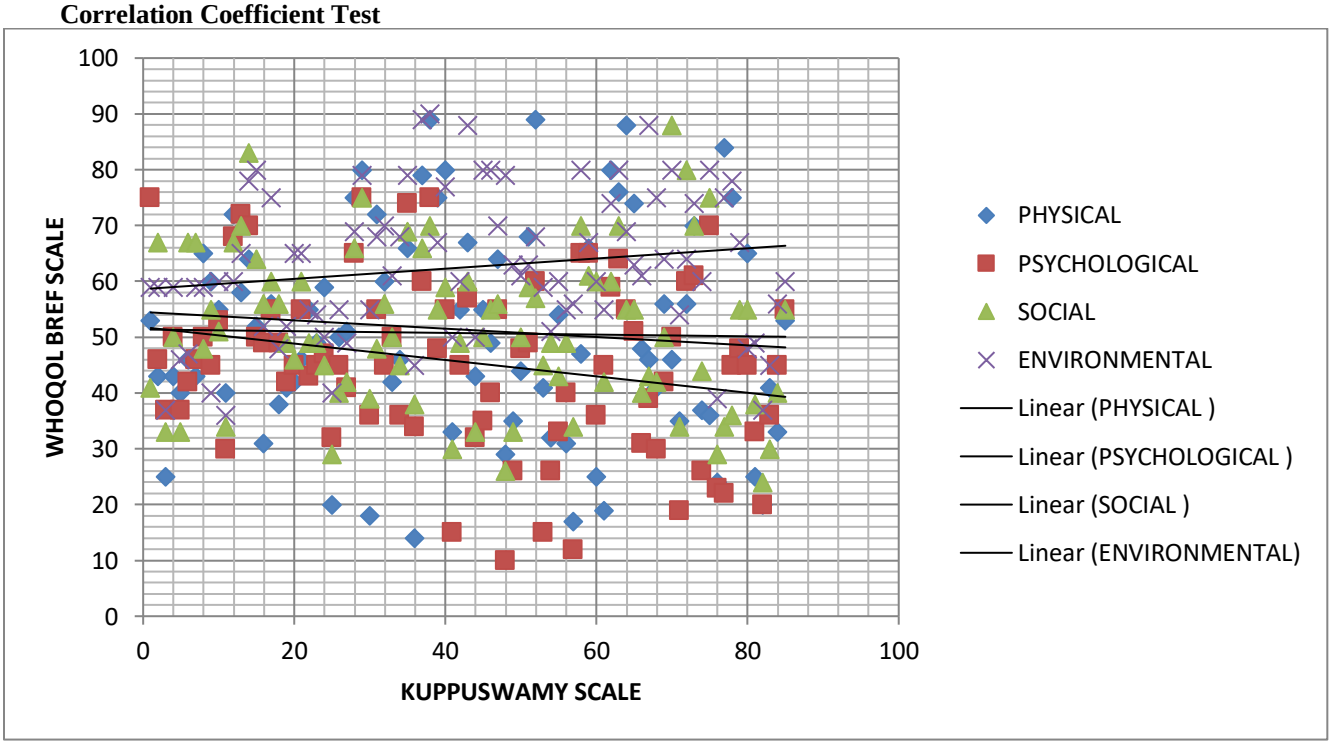
Table No. 3: Mean Values of Overall quality of life in physically disabled elderly individual based on Physical, Psychological, Social, Environmental domains

WHOQOL BREF Scale Score				
Total	Physical Domain Mean ± SD	Psychological Domain Mean ± SD	Social Domain Mean ± SD	Environmental Domain Mean ± SD
n=127	49.29 ± 18.54	44.80 ± 14.60	50.17 ± 14.06	62.07 ± 13.14

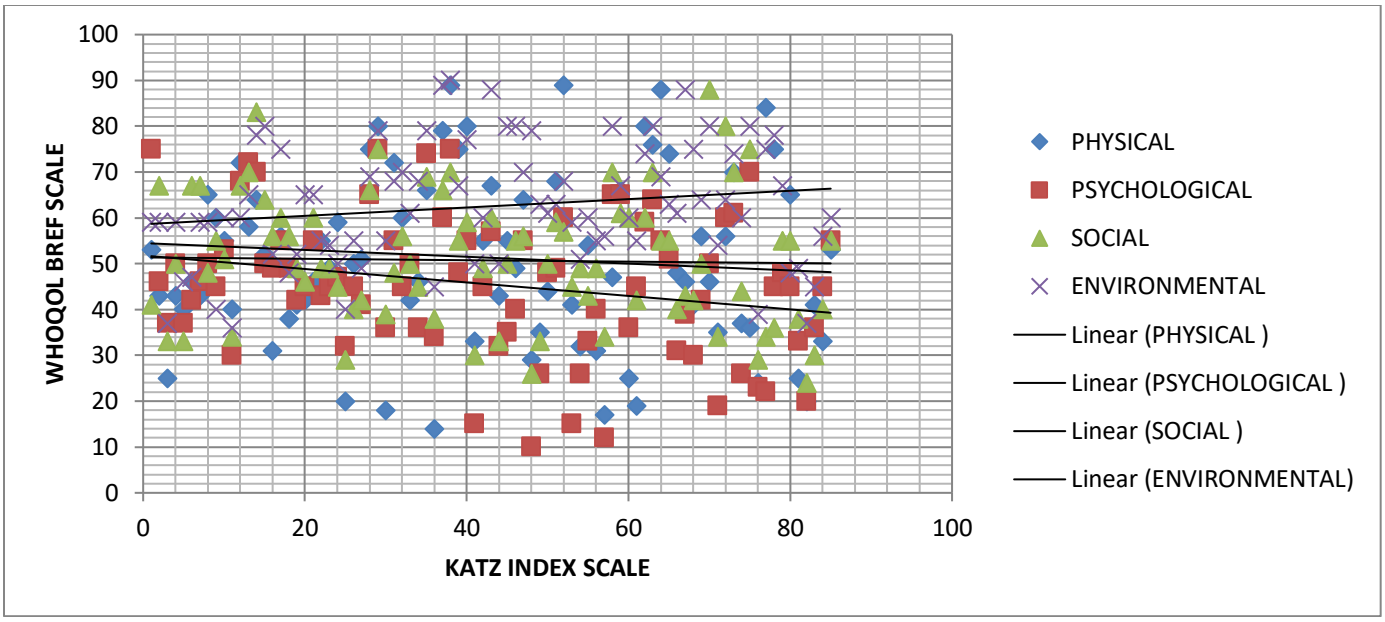
Table No. 4: Relationship of WHOQOL-BREF Scale with Kuppuswamy Scale, Katz Index Scale and Disability Percentage by using Pearson Correlation Coefficient Test

		WHOQOL-BREF Scale			
Variables	**Values**	**Physical Domain**	**Psychological Domain**	**Social Domain**	**Environmental Domain**
Kuppuswamy Scale	r	0.194	0.051	0.032	0.037
	p value	0.028	0.572	0.721	0.682
		Significant	Not Significant	Not Significant	Not Significant
Katz Index Scale	r	0.609	0.423	0.312	0.290
	p value	0.000	0.000	0.000	0.001
		Significant	Significant	Significant	Significant
Disability %	r	-0.551	-0.344	-0.268	-0.221
	p value	0.000	0.000	0.002	0.013
		Significant	Significant	Significant	Significant

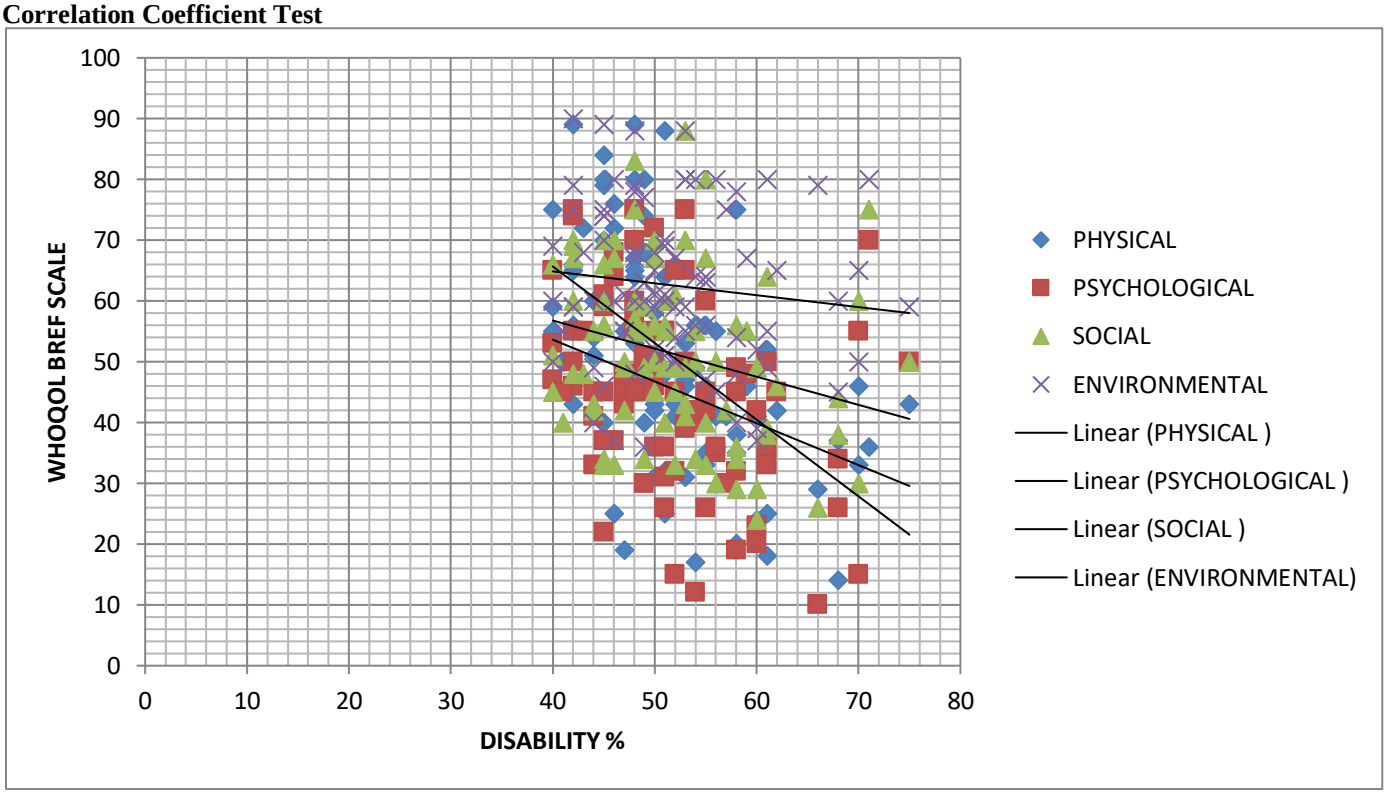
Graph No. 2 showing the relationship of WHOQOL-BREF Scale with Kuppuswamy Scale by using Pearson Correlation Coefficient Test



Graph No.3 showing the relationship of WHOQOL-BREF Scale with Katz Index Scale by using Pearson Correlation Coefficient Test



Graph No. 4 showing the relationship of WHOQOL-BREF Scale with Disability Percentage by using Pearson Correlation Coefficient Test



Discussion

The present study was undertaken to assess quality of life (QOL) in elderly individuals with physical disability in Ahmednagar Rural population.

In our study, 127 individuals were included. The quality of life in physically disabled elderly individual was assessed by using the WHOQOL-BREF Scale. The socioeconomic status in this individual was obtained by using the Kuppuswamy scale. The activity of daily living affected was evaluated by using the Katz Index Scale. The percentage of disability affected was found by using the disability assessment performa.

In our study we have seen that table & graph no. 1 shows that the age wise distribution in physically disabled elderly individual with mean age group in men is (68.43 ± 6.91) and in female is (70.28 ± 6.30) which shows that the females were significantly older than men in relation to physically disabled elderly group.

Another study conducted by Palacios-Cena D et. al. (2012) on prevalence of disability increased over the past decade in elderly people, which was a Spanish population based survey. Their results showed that women were significantly older than men in all the surveys. Women showed higher prevalence of disability (ADL, IADL, and mobility) as compared to men in all surveys. Their study found similar results stating that older population showed greater disability where their mean age group was found to be 84 as well , which corresponds to the results of our studies. Lower education levels, obesity, not practicing physical activity and sleeping more than 8 hrs per day were further associated with higher disability in their study.[21]

In our study, table 2 denotes that the mean value of Kuppuswamy Scale in both gender for physically disabled elderly individual shows a mean value of (9.67 ± 4.07) which according to Kuppuswamy Scale of version 2014 belongs to upper lower class (IV).

To support our results, a reference of R R Patti's study was considered (2004) who conducted a study on prevalence and pattern of disability in a rural community in Karnataka. Socioeconomic status of the respondents in this study was compared with studies conducted in rural community of Karnataka where 51% respondents belonged to middle socioeconomic class and 61% of them were from low socioeconomic class.[20]

In our study, table 2 shows that the Activity of daily living which was assessed through Katz Index Scale in physically disabled elderly population, depicted a mean score of (4.12 ± 1.42) which means that the ADLs in physically disabled are moderately affected.

Another study reported by Daniel J. Berlau, M Corroda et. al. on disability in the oldest-old: incidence and risk factors in the 90+ study stated that a low QOL was predictive of incident disability, even after adjusting the baseline ADL difficulty levels. Individuals with a low QOL may feel less motivated to maintain their health, which probably lead to disabilities. Several other factors were associated with increased risk of disability including history of congestive heart failure, history of depression poor self-rated quality of life and cognitive impairment.[19]

In our study table 2 explains that the percentage of disability in our study is moderately affected with mean value of (52.29 ± 7.40) and graph no. 4 explain the relationship of disability percentage and with WHOQOL-BREF Scale (Physical domain) which says that there is a negative correlation between the disability percentage & quality of life hampering physical domain.

Qiao-Lan Zheng et. al. (2014) conducted a study on the role of quality of care and attitude towards disability in the relationship between severity of disability and quality of life: findings from a cross-sectional survey among people with physical disability in China. The result of this study showed that there was a mild disability (mean score: 1.72) and relatively low level of QoL (mean score: 2.65-3.22) in people who were physically disabled. Our study's result also matches with this study's result as moderate disability can also affect the quality of life in physically disabled elderly individuals.[18]

In our study, table 3 shows the WHOQOL-BREF Scale's (Psychological Domain Score) mean value was 44.80 ± 14.60, which is considered low for physically disabled elderly individuals. Quality of life consisting of psychological domain gets lower in elderly population with physically disabled individuals.

Yu-Chen Chang et. al. (2015) conducted a study on: depression affects the scores of all facets of the WHOQOL-BREF and may mediate the effects of physical disability among community-dwelling older adults. In this study rather than selecting people with diagnosed depression, they included only relatively healthier (both healthy adults and those with mild ADL impairment) people from the community to avoid potential confounding by major co morbidity / physical disability. The result of this study showed that depression affects the QOL in older adults. Depression likely plays a mediating role in the relationship between physical function impairment and QOL. In other words, an older adult with mild physical challenges may still live with good QOL if their depressive symptoms are effectively managed.[15]

Similar study conducted by author Rodda & Walker (2011) on depression in older adults which concluded that the depression in older adults is associated with an increased risk of death and disability. Hence, physical disabilities may increase the risk of depressive symptoms in older adults.[22]

In our study, table no. 4 & graph no. 2 shows a relationship of WHOQOL-BREF Scale (Physical Domain) with Kuppuswamy scale with the value of (r=0.194). This shows a positive correlation between the Kuppuswamy scale and physical domain of WHOQOL BREF Scale

A study conducted by Srivastava D K et. al. (2012) on prevalence of physical disability in rural population of district Mau of Uttar Pradesh, India (2007). In this study, they found that prevalence of physical disabilities among the age group of ≥60 was highest (90.28 per 1000). Prevalence among the illiterate followed (47.20 per 1000). Physical disability was found to be higher in illiterates and community having low and medium standard of living. [23]

In our study, table 4 & graph no. 4 shows a negative relationship between the disability percentage & social domains of WHOQOL-BREF Scale in elderly individual (r value -0.268) which means that the disability can not affect the social relationship between the physically disabled individuals. Also table 3 denotes the WHOQOL-BREF Scale (Social Domain) score with a mean value of 50.17 which shows it is moderately affected in physically disabled elderly population.

A. G. de Belvis et. al. conducted a study on Social relationships and HRQL: a cross-sectional survey among older Italian adults, which concluded that social relationship affiliations and social activity participation could be influenced by the disability.[24]

The WHOQOL BREF Scale's physical domain showed positive corelation with Kuppuswamy scale which was statistically significant.. The study also showed positive correlation of WHOQOL BREF Scale with Katz Index Scale which was statistically significant. The study showed negative correlation of WHOQOL BREF Scale with disability percentage.

CONCLUSION:-

The quality of life in elderly physically disabled population of rural area is moderately influenced by their socioeconomic status, their activity of daily living and their disability percentage.

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