

Prevalence of Chronic Diseases and Quality of Life among Elderly People of Rural Varanasi

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ABSTRACT

Introduction: Chronic (non-communicable) diseases are major cause of morbidity and mortality worldwide and have a significant impact on an individual's quality of life. The objectives of this study were to assess the magnitude of common chronic diseases among elderly, to assess their quality of life and to compare the quality of life of diseased elderly with non diseased elderly persons.

Material and methods: This community based cross sectional study was conducted among 402 rural geriatric persons of Varanasi district. The Quality of Life was assessed using World Health Organization Quality of Life Questionnaire—short version (WHOQoL-BREF).

Results: The prevalence of musculoskeletal problem, hypertension, cataract, diabetes, stroke and cancer was 56%, 34.1%, 25.4%, 6.7%, 2% and 0.7% respectively among geriatric population. The total score for Quality of Life was 60.69 on 0-100 scale. The mean score was 59.16, 59.14, 63.25 and 61.20 for physical, psychological, social and environmental domain respectively. The effect of any chronic disease was quite significant on all the domains of QOL i.e. physical, psychological, social and environmental with maximum effect was on physical domain.

Conclusions: Elderly living in the rural community who have chronic disease experience significant impairment in their quality of life. Awareness among the elderly population should be created for regular medical check-ups to ensure prevention and early detection of the chronic diseases and to ensure better Quality of Life.

Keywords: Quality of Life, WHOQOL-BREF, Elderly, Varanasi, Rural

INTRODUCTION

Ageing is generally defined as a process of deterioration in the functional capacity of an individual that results from structural changes, with advancement of age¹. Population aging is a worldwide phenomenon, and India is no exception. Demographic transition resulted in increase in life expectancy and increase in proportion of elderly population in India and other developing countries². Indian population has approximately tripled during the last 50 years, but the number of elderly Indians has increased more than fourfold. In India the elderly population accounted for 8.2% of the total population in 2011, and the number is expected to increase dramatically over the next four decades (to 19% in 2050)³. The Government of India adopted the National Policy on Older Persons in January, 1999 and this policy defines “senior citizen” or “elderly” as a person who is of age 60 years or above⁴.

Due to the process of epidemiological transition the morbidity and mortality pattern has also changed. Non-communicable diseases have surpassed the communicable diseases in terms of most common cause of morbidity and mortality in India. Many chronic illnesses can influence the quality of life in elderly populations, and there is evidence that there is increased risk of multiple co-morbidities in elderly populations that may lead to disability⁵.

World Health Organization defined quality of life (QoL) as “an individual's perception of life in the context of culture and value system in which he or she lives and in relation to his or her goals, expectations, standards and concerns”. It is thus a broad concept covering the individual's physical health, mental state, level of independence, social relationships, personal beliefs and their relationship to salient features in the environment⁶. Health related Quality of Life (HRQoL) reflects an individual's perception of overall well-being with regard to disease and treatment related symptoms.

With the current statistics for the elderly there is a need to highlight the medical and psychosocial problems that are being faced by them and strategies for bringing about an improvement in their quality of life also need to be explored. On this background the present study was conducted with following objectives: 1. to assess the magnitude of common chronic diseases among elderly, 2. to assess the quality of life of elderly persons suffering from chronic diseases and 3. to compare the quality of life of diseased elderly (non-communicable) with non diseased elderly persons.

MATERIAL AND METHODS

The present community based cross-sectional study was conducted at Chiraigaon block of Varanasi district where the Rural Health Training centre of the Institute of Medical Sciences, BHU is situated. This study was conducted in year 2014. Elderly persons aged 60 years and above residing in Chiraigaon block were eligible for the study. Those who were unable to talk or respond to the questionnaire and those

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who were not willing to take part in the study were excluded.

Sample size calculation: Sample size was calculated with the help of a pilot survey conducted among 30 rural elderly persons from different village which showed that around 60% of the elderly were suffering from at least one chronic health problem. The total sample size estimated by using formula; $n = 4PQ/L^2$ taking permissible margin of error as 5% with 95% confidence limit. The required sample size was calculated to be 384. Assuming a non response rate of 10% the number of persons to be selected for interview was fixed at 422.

Sampling technique: Villages of Chiraigaon Community Development block were divided into 3 categories according to distance from Block headquarter (i.e. <1 km, 1-2 km and >2km). Then from each group one village was selected by simple random sampling method. All the elderly persons in selected village constituted a sampling frame. The required number of study subjects for each village was obtained by probability proportion to size sampling technique. The selection of study participant was done by simple random sampling technique. Twenty persons were not found during repeated visit so finally 402 elderly persons were interviewed.

Study tool: A pretested semi structured questionnaire was used for the study. The questionnaire was divided into four parts. The first part comprised of the socio-demographic information which covered a diverse set of parameters such as age, sex, marital status, occupation, education, and socio-economic status. Socio-economic status was calculated by using Udai Parikh classification for the rural area⁷. The second part comprised of detailed history about the health profile of respondents. The third part of the questionnaire was for some anthropometric measurement and clinical examinations like height, weight, body mass index and measurement of blood pressure and blood sugar. The fourth part comprised of WHOQOL-BREF scale for measurement of Quality of Life.

Clinical examination and measurements: Respondents were asked for their various joint problems, diminished vision and previous cataract surgery. Eyes were examined for the presence of cataract. History of various other problems was also taken. It included Hearing problems, Asthma, cancer etc. The blood pressure was measured using mercury sphygmomanometer by standard procedure. A random blood glucose sample of all the respondents was taken with the help of glucometer. Fasting and postprandial blood glucose levels of respondents were taken on the next day for those respondents with raised random blood glucose.

Quality of life assessment: We used the World Health Organization Quality of Life Questionnaire—short version (WHOQoL-BREF) to assess QoL⁸. The WHOQOL-BREF has total 26 questions covering 4 domains- Physical Health (7 questions), Psychological (6 questions), Social Relationship (3 questions), and Environment (8 questions) with 2 additional items, the perceived Quality of Life

(overall) and Perceived Health Status. The physical domain included questions pertaining to pain, energy, sleep, work, and activities. Questions in psychological domain were on positive and negative feelings and body image. Social domain included questions pertaining to personal relationships and social support. Questions in environmental domain were on home and work environment and satisfaction regarding facilities such as transport, health, living, and financial arrangements. The respondent was asked to reply these questions as perceived by them on a five-point scale.

STATISTICAL ANALYSIS

Data was entered and analysed with the help of SPSS software, version 22. The four domains of the WHOQoL-BREF: physical health, psychological, social relationships, and environment, were rated on a five-point Likert scale. As per the WHO user manual, raw scores for the domains of WHOQoL-BREF were calculated by adding values of single items and were transformed on the scale ranging from 0 to 100, where 100 is the highest and 0 is the lowest QoL. Mean score of each domain and the total score were calculated. Independent *t*-test and Analysis of variance (ANOVA) test were applied to observe the statistical significance between QoL and independent variables.

Ethical clearance: It was taken from ethical committee of institute of medical sciences, Banaras Hindu University. Informed consent was taken from the head of the household and the study subject selected for the present study.

RESULTS

Of the 402 study subjects, around 85% were experiencing at least one health problem. The most frequent health problem among elderly was musculoskeletal problem (56%), followed by hypertension (34.1%). Prevalence of cataract was 25.4%. Diabetes was prevalent in 6.7% of the population, while hearing problem was present in 6.5% of the study subjects. The prevalence of stroke and cancer among geriatric population was 2% and 0.7% respectively. (Table: 1)

The mean score on social relationship domain was better than physical, psychological and environmental domain. The mean score was 59.16, 59.14, 63.25 and 61.20 for physical, psychological, social and environmental domain respectively. The total score for QOL was 60.69 on 0-100 scale. (Table: 2)

As the age increased the overall QOL decreased and this was statistically significant. The QOL of female were almost 10 points lower than males ($p < 0.05$) while QOL of currently married group (65.04) was much higher than widowed/unmarried (50.93) group ($p < 0.001$). Higher the education better the QOL scores were observed. The QOL score in working individuals were better than non-working individuals. The QOL of upper socio economic status was better than middle and lower socio-economic group. (Table: 3)

The effect of any chronic disease was quite significant on

Morbidity conditions	Male N=190	Female N=212	Total N=402
Musculoskeletal problems	82(43.2)	145(68.4)	227(56.5)
Hypertension	66(34.7)	71(33.5)	137(34.1)
Diabetes	21(11.1)	6(2.8)	27(6.7)
Cataract	34(17.9)	68(32.1)	102(25.4)
Hearing Problem	12(6.3)	14(6.6)	26(6.5)
Stroke	5(2.6)	3(1.4)	8(2.0)
Cancer	1(0.5)	2(0.9)	3(0.7)

*Figure in parenthesis denotes percentages

Table-1: Prevalence of common chronic diseases among elderly (N=402)

Quality of Life domain	Mean	Standard deviation
Physical Domain	59.16	24.02
Psychological Domain	59.14	21.67
Social -Relationship Domain	63.25	24.18
Environmental Domain	61.20	18.33
Total	60.69	22.05

Table-2: Quality of Life (QOL) Score of study participants on 0-100 Scale

Variables	Frequency	Quality of Life (Mean ,SD)	F/t value	Significance (p value)	
Age group	60-69 Yrs	229	64.79 ±18.34	F=70.91	<0.001
	70-79 Yrs	122	58.15 ±19.27		
	80 And Above	51	48.33 ±18.32		
Gender	Male	190	66.79 ±18.42	t=6.245	<0.001
	Female	212	55.22 ±18.63		
Marital status	Married	271	65.40± 18.22	t=7.475	<0.001
	Widowed / Unmarried	131	50.93 ±18.11		
Educational status	Illiterate	257	55.79± 19.24	F=22.428	<0.001
	Primary	70	63.82 ±19.24		
	Middle	23	70.59± 16.56		
	High School And Above	52	76.31 ±13.37		
Occupational status	Not Working	160	56.71 ±19.18	F=7.011	<0.001
	Farmer	91	68.26 +17.01		
	Business	33	66.43 +19.23		
	Laborer	28	62.75 +18.17		
	House Wife	90	57.37 +19.99		
Socio-economic status	Upper	26	74.72+14.43	F=9.048	<0.001
	Middle	235	62.54+19.05		
	Lower	141	55.03+18.93		

Table-3: Quality of Life Scoring Pattern According to Socio Demographic Profile (N=402)

Disease status	Physical domain	Psychological domain	Social domain	Environmental domain	Total score	
normal (n=60)	Mean	74.05	69.73	72.15	69.83	71.44
	Std. Deviation	20.09	19.68	24.07	15.91	18.19
diseased (n=342)	Mean	56.55	57.29	61.69	59.69	58.81
	Std. Deviation	23.73	21.49	23.89	18.33	19.00
Test of significance	t=5.382 p<0.001	t=4.188 p<0.001	t=3.123 p=.002	t=4.026 p<0.001	t=4.780 p<0.001	

Table-4: Scoring Pattern of different Domains of Quality of Life according to disease status (N=402)

all the domains of QOL i.e. physical, psychological, social and environmental. The maximum effect of chronic disease was on physical domain where mean difference between diseased and non diseased person was 17.50. The mean score

on psychological domain was 69.73 for normal persons while for chronically ill person it was 57.29. The mean score on social domain was 72.15 for normal persons while for chronically ill person it was 61.69. The mean score on

environmental domain was 69.83 for normal persons while for chronically ill person it was 59.69. (Table: 4)

DISCUSSION

The study was carried out to find the prevalence of common chronic disease among elderly and to assess their Quality of Life. The most common health problem was musculoskeletal problem (56%), followed by hypertension (34.1%) and cataract (25.4%). Studies from different part of India also reported musculoskeletal problem as most common morbidity among elderly^{9,10}. Age is a non modifiable risk factor of hypertension and diabetes. Similarly the problem of cataract significantly increases in old age.

In the present study, highest mean QoL score was seen in the social relationship domain. It indicates that the social contacts and the support of elderly from their personal relations and peer group have great influence on their quality of life in rural area. This is similar to the finding obtained in the study conducted by Barua et al, Sowmiya et al and Qadri et al wherein the highest QoL score was obtained in the social relationship domain in rural geriatric population¹¹⁻¹³.

The QOL of female were almost 10 points lower than males ($p < 0.05$). Study conducted by Ibrahim T M et al. on elderly in Iraq showed that the QOL of men was in general is better than women¹⁴. The QoL study from different parts of India also mentioned that QOL was better among males for physical, psychological, social, and environmental domains¹¹⁻¹³.

We found that as the age increased the overall QOL decreased and this was statistically significant. It indicates that the despair of ageing greatly affect their quality of life. This situation also prevails in other countries where similar results are seen which shows that the young old (60-69yrs) have better QOL scores than the old- old (70-79yrs) and the oldest -old (80and above)¹⁵.

The relation between marital status and wellbeing of the elderly has been widely studied especially in the western societies. These studies have shown that widowed elderly have poor health and wellbeing than the currently married. QOL of currently married group (65.04) was much higher than widowed/unmarried (50.93) group ($p < 0.001$). Hence living with their spouse in general improved their quality of life and wellbeing^{11,13}.

We found that higher the education better the QoL scores among elderly. Elderly with higher levels of schooling had better perceptions of their QoL¹⁶. The QoL score in working individuals were better than non-working individuals. Socio-economic status played an important and significant role in determining the QoL of elderly. The QoL of upper socio economic status was better than other groups¹⁷.

The effect of any chronic disease was quite significant on all the domains of QoL i.e. physical, psychological, social and environmental. The maximum effect of chronic disease was on physical domain where mean difference between diseased and non diseased person was 17.50. Similar results were seen in the study conducted in India and other country which reported that poor health in the presence of morbidity greatly lowered their quality of life^{2,18,19}.

Limitation of study: we had measured blood pressure for hypertension and blood glucose level for diabetes. For assessing the magnitude of other chronic disease we total relied on history given by study participant. So there might be chances of misreporting and under reporting of these conditions. There are also increased chances of recall bias as this study deals with elderly population.

CONCLUSION

Elderly living in the rural community who have chronic disease experience significant impairment in their quality of life. They have an impaired quality of life especially on physical domain compared with psychological, social and environmental domain owing to the frequent experience of symptoms and limitation on their physical activities. Awareness among the elderly population should be created for regular medical check-ups to ensure prevention and early detection of the chronic diseases. There is need to include HRQoL as a routine outcome measure for persons with chronic diseases if health services are really for the betterment of the quality of life of people. There is also need to sensitize the community particularly about the special health needs of geriatric age group.

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