



## Original Article

# A Study on Geriatric Population of Urban Kanpur in Relation to Diabetes Mellitus and its Associated Quality of Life (QOL)

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## **Abstract**

**Background:** *The Geriatric population is more prone to diabetes. Quality of life is measured as physical and social functioning and perceived physical and mental well-being. People with diabetes may have a low level of quality of life than people with no chronic illness.*

**Methodology:** *A Cross sectional study was conducted among the elderly (more than 60 years) living in municipal limits of urban Kanpur from January 2019 to December 2019. A total of 210 subjects were included in the study.*

**Results:** *The prevalence of Diabetes was found to be 20.47%. The overall score was highest (43.54±7.61) in the Psychological domain and least in the Physical domain (39.67±8.31) of QOL.*

**Conclusion:** *The difference in overall scores was found to be significant (p-value <0.05) in the overall, physical and environmental domain. Relationship between the presence of diabetes and family history, alcohol consumption, physical exercise and family history of Diabetes (p-value < 0.05) is found to be significant.*

**Keywords:** *Urban Geriatric health, Diabetes Mellitus, Quality Of Life, WHO QOL BREF.*

## **Introduction**

Once regarded as a single disease entity, diabetes is now seen as a heterogeneous group of diseases, characterized by a state of chronic hyperglycemia, resulting from the diversity of etiologies, environmental & genetic, acting jointly. The underlying cause of diabetes is a defective production or action of Insulin, a hormone that controls glucose, fat and amino acid metabolism. Chronic hyperglycemia leads to a large number of complications-cardiovascular, renal, neurological, and ocular and others such as recurrent infections.

Quality of life is an important health outcome in its own right, representing the ultimate goal of all health interventions. Quality of life is measured as physical and social functioning and perceived physical and mental well-being. People with diabetes may have a low level of quality of life than people with no chronic illness, but a better quality of life than people with most other serious chronic diseases. Duration and type of diabetes are not consistently associated with quality of life. Intensive treatment does not impair quality of life, and having better glycemic control is associated with a better quality of life. Complications of

diabetes are the most important disease-specific determinant of quality of life. Numerous demographic and psychosocial factors influence the quality of life and should be controlled when comparing subgroups. Studies of clinical and educational interventions suggest that improving patient's health status and perceived ability to control their disease results in improved quality of life.

The geriatric population is more prone to diabetes. Glucose intolerance is a common occurrence among the geriatric population. Most often it is very difficult to identify symptoms of disease in old persons. Most often old people possess undiagnosed diabetes and come into light with severe complications like neuropathic foot lesions, peripheral neuropathy, vascular disease, nephropathy & hypertension. The overall quality of life in diabetics is poor and poorer with the presence of chronic complications. Such a study on overall diabetes profile and quality of life in Urban diabetics was carried out as a lot of risk factors of noncommunicable disease was found to be present in urban elderly.

### Materials and Methods

A cross-sectional study was conducted among the elderly (more than 60 years) living in municipal limits of urban Kanpur from January 2019 to December 2019. Taking prevalence of diabetes in urban elderly to be 32% (ICMR 2016 India B, the overall prevalence of diabetes and prediabetes) and relative margin of error to be 20%, the overall calculated minimum sample size was found to be 204 (95% of CI). A total of 210 subjects were included in the study. Ethical clearance was obtained prior to the start of the study from the Ethical Committee of GSVM Medical College, Kanpur.

To achieve the optimum sample size multistage random sampling technique was applied. In the first stage four wards (Kakadeo, Aryanagar, Kalyanpur, and Vijaynagar) of Kanpur chosen using Simple Random Sampling without replacement. In the second stage, one mohalla

from each selected ward was selected by Simple Random Sampling technique, House to house survey was done to give equal representation to each selected mohalla. Data was recorded on a predesigned questionnaire which contained three parts. The first part contains information related to biosocial characteristics, the second part asks information related to family history, symptoms of diabetes, investigations like fasting blood glucose, third part contains WHO-QOL BREF scale to assess the quality of life scores in physical, psychological, social and environmental domains. The data thus obtained by direct personal interview was compiled to make the master table and appropriate statistical tools were applied to analyze the data and conclusions were drawn on the basis of comparison of present results with previous studies.

### Results

The overall mean age of study subjects was **64.46 ± 4.33** years, out of which **64.07 %** study subjects were males and **35.93%** were females, **73.33 %** subjects were Hindus and **26.33 %** belong to other religion. The majority (**53.88%**) belong to the OBC category. A majority of study subjects (**67.14%**) belong to social class II and least (**1.90%**) belong to social class IV according to Modified BG Prasad (AICPI 2019). **90.47%** of study subjects live in the joint family.

The prevalence of Diabetes was found to be **20.47%**.

The overall score was highest (**43.54±7.61**) in the Psychological domain and least in the Physical domain (**39.67±8.31**). The difference in overall scores was found to be significant (**p-value<0.05**) in the overall, physical and environmental domain. Relationship between the presence of diabetes and various socioeconomic and variables of personal and family history, alcohol consumption, physical exercise and family history of Diabetes (**p-value < 0.05**) is found to be significant.

**Table 1** Distribution of Study Subjects according to age

Age (in years)	No.	%
60-70	189	90
70-80	17	8.09
>80	4	0.01

**Table 2.** Quality of life scores of Urban Diabetics

QOL SCORE	MEAN	STANDARD DEVIATION
OVERALL SCORE	40.40	5.33
PHYSICAL DOMAIN	39.67	8.31
PSYCHOLOGICAL DOMAIN	43.54	7.61
SOCIAL DOMAIN	39.02	9.19
ENVIRONMENTAL DOMAIN	39.74	7.33

**Table 3** Correlates of Biosocial and other Characteristics with Quality of life Scores Inurban Diabetics

S.NO.	Sociodemographic variables		QOL SCORES OF DIABETICS		P value
			MEAN	S.D	
1		MALE	41.16	7.28	0.201
		FEMALE	39.16	6.46	
2	MARITAL STATUS	MARRIED	42.10	6.64	0.383
		UNMARRIED/OTHER	38.46	7.10	
3	SOCIOECONOMIC STATUS	I	42.10	6.64	0.817
		II	40.76	7.10	
		III	40.34	5.88	
		IV	0	0	
		V	36.74	7.10	
4	PHYSICAL ACTIVITY	REGULAR	42.10	6.34	0.319
		OCASSIONAL	39.80	7.10	
		NEVER	38.36	5.36	
5	FAMILY H/O DIABETES	PRESENT	39.36	7.08	0.217
		ABSENT	41.12	5.96	
6	ALCOHOL	YES	36.48	7.16	0.0006
		NO	42.41	6.12	

**Discussion**

In the present study, the prevalence of Diabetes was found to be **20.47%** in Urban areas. **Jai Prakash Singh et al (2011)** conducted a study in the urban slum of Nagpur in diabetics among the geriatric population and found out that the overall prevalence was **17.75%**. **Goswami AK. et al (2016)**, in their study among the urban population aged greater than 60 years in South Delhi Reported prevalence of Diabetes to be **24.04%**. **Mohan et al(2007)** conducted a study on the epidemiology of type 2 diabetics and found out the prevalence of diabetes in the elderly between 60-69 years of age was **33.6%**. **MR Chhetri et al (2009)** conducted a survey in Kathmandu, Nepal and found out that the overall prevalence of diabetes is **25.9%** in the elderly. **Meshram et al**

**(2015)**, conducted in their study on prevalence & correlates of diabetes in Urban India reported prevalence of Diabetes to be 11.5%. All the above studies reported prevalence nearly similar to the present study.

In the present study the mean score of QOL in urban diabetics was highest in the Environmental domain (**45.34**) and Lowest in the Physical domain (**38.10**) whereas it is maximum in the Environmental health domain (**48.36**) and minimum in the social relationship domain (**39.62**) in the study conducted by **Prathay Pratim Dutta et al (2015)** in the southern part of West Bengal on the association of quality of life in urban elderly and found that QOLwhereas in the study conducted by **S.E. Thadatil et al (2015)** on the assessment of domain wise quality of life

score in the elderly population using WHO QOL – BREF in the rural area of Kerala and the mean scores of QOL domains was maximum in physical health (**42.44**), followed by social relationship (**42.16**) contrary to the results of the present study. The lowest mean score was seen in the psychological domain (**26.95**) but in the present study, it was the social domain that has the least score (**39.31**).

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