

EXPLORING DIABETES PROFILES AND QUALITY OF LIFE AMONG URBAN ELDERLY: A CROSS-SECTIONAL STUDY

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Abstract

Background: Quality of life (QOL) is a crucial health metric, and its assessment in individuals with diabetes reveals nuanced dynamics influenced by various factors. The elderly population's susceptibility to diabetes, coupled with challenges in symptom identification, underscores the need for comprehensive studies in urban settings. **Materials and Methods:** A cross-sectional study was conducted among individuals aged 60 years and above in Cuttack, exploring diabetes prevalence and its impact on QOL. Multistage random sampling was employed, and data collected through questionnaires encompassed biosocial characteristics, family history, diabetes symptoms, and investigations. The WHO-QOL BREF scale measured QOL across physical, psychological, social, and environmental domains. Statistical tools were applied for analysis, drawing conclusions based on a comparative analysis with previous studies. **Result:** The study revealed a prevalence of diabetes in urban areas (20.45%) and highlighted sociodemographic factors influencing QOL. Mean QOL scores varied across domains, with the highest in the Psychological domain and the lowest in the Physical domain. Significant differences were noted in overall, physical, and environmental domain scores. The relationship between diabetes presence and socioeconomic variables, personal and family history, alcohol consumption, physical exercise, and family history of diabetes was significant. Comparisons with existing studies align closely with the observed diabetes prevalence. QOL variations across domains emphasize the complexity of urban diabetics' experiences. Notably, the study's findings differ from previous studies, emphasizing the importance of context-specific investigations in diverse populations. **Conclusion:** Tailored interventions are crucial to address unique challenges faced by individuals with diabetes in distinct settings. The findings provide a foundation for targeted healthcare strategies, emphasizing the need for personalized interventions to enhance the well-being of urban elderly individuals with diabetes.

INTRODUCTION

Formerly perceived as a singular ailment, diabetes is currently recognized as a diverse spectrum of diseases, marked by persistent hyperglycemia stemming from a myriad of etiological factors, encompassing both genetic and environmental influences.^[1] The root cause of diabetes lies in the impaired production or function of insulin, a hormone governing glucose, fat, and amino acid metabolism. Prolonged hyperglycemia is implicated in various complications, spanning cardiovascular, renal, neurological, ocular, and recurrent infectious conditions.^[2,3]

Quality of life stands as a pivotal health metric, reflecting the ultimate objective of all healthcare interventions. It is gauged through assessments of physical and social functioning, alongside perceived physical and mental well-being. Individuals afflicted with diabetes may experience a lower quality of life compared to those without chronic conditions but fare better than counterparts grappling with most other severe chronic ailments.^[4,5] Notably, the duration and type of diabetes do not consistently correlate with quality of life. Intensive treatment does not compromise the quality of life, and enhanced glycemic control aligns with an improved quality of life. Complications arising from diabetes emerge as

the foremost disease-specific determinant of quality of life. Various demographic and psychosocial factors exert influence on quality of life and necessitate consideration when comparing subgroups.^[6,7] Studies on clinical and educational interventions underscore that enhancing a patient's health status and perceived ability to manage their condition leads to an ameliorated quality of life.^[8] The elderly population exhibits an elevated susceptibility to diabetes, with glucose intolerance being a common occurrence among this demographic. Identifying disease symptoms in older individuals proves challenging, often resulting in undiagnosed diabetes manifesting with severe complications such as neuropathic foot lesions, peripheral neuropathy, vascular disease, nephropathy, and hypertension.^[9,10] Overall, the quality of life among diabetics is subpar and further compromised in the presence of chronic complications. This study delves into the comprehensive diabetes profile and quality of life among urban diabetics, prompted by the observed prevalence of noncommunicable disease risk factors in the urban elderly population.

MATERIALS AND METHODS

A cross-sectional study was executed among individuals aged 60 years and above residing within the municipal boundaries of Cuttack, spanning from February 2022 to December 2022. Considering the reported prevalence of diabetes in urban elderly as 32% (ICMR 2016 India B, encompassing overall diabetes and prediabetes), with a relative margin of error set at 20%, the minimum calculated sample size was determined to be 204 (95% confidence interval). A total of 220 subjects were enrolled in the study after obtaining ethical clearance from the Ethical Committee of SCB Medical College and Hospital, Cuttack.

To attain the optimal sample size, a multistage random sampling technique was employed. In the initial stage, four wards (Ward 4, Ward 9, Ward 12, and Water 17) of Cuttack were chosen using Simple Random Sampling without replacement. Subsequently, one street from each selected ward was chosen through Simple Random Sampling, and a house-to-house survey was conducted to ensure equal representation for each selected street. Data was collected through a pre-designed questionnaire comprising three parts. The first part gathered information on biosocial characteristics, the second part covered family history, diabetes symptoms, and relevant investigations like fasting blood glucose, while the third part utilized the WHO-QOL BREF scale to assess quality of life scores across physical, psychological, social, and environmental domains. The collected data from direct personal interviews were compiled into a master table, and appropriate statistical tools were applied to analyze the data,

leading to conclusions drawn through a comparative analysis with previous study results.

RESULTS

The mean age of the study subjects was 64.57 ± 4.42 years. Among them, 139 (63.18%) were males, and 36.82% were females. Of the participants, 161 (73.18%) identified as Hindus, while 26.82% belonged to other religions. A majority (53.18%) fell under the OBC category. Regarding social class, most study subjects (67.27%) were classified under social class II, with the smallest proportion (1.81%) belonging to social class IV based on Modified BG Prasad (AICPI 2019). The majority of participants (90%) lived in joint families.

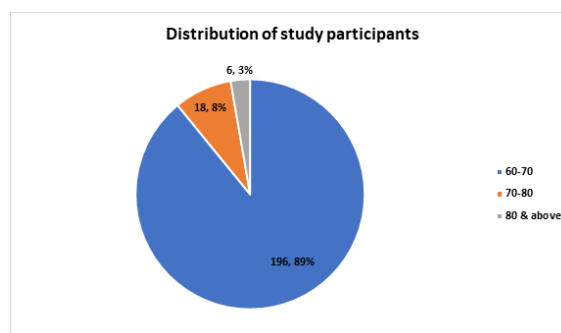


Figure 1: Distribution of Study Subjects according to age

The prevalence of diabetes was determined to be 20.45%. The highest overall score (43.45 ± 7.52) was observed in the Psychological domain, while the lowest was in the Physical domain (39.56 ± 8.29). Significant differences (p -value < 0.05) were found in overall, physical, and environmental domain scores. The relationship between the presence of diabetes and various socioeconomic variables, as well as personal and family history, alcohol consumption, physical exercise, and family history of diabetes, was found to be significant.

The assessment of Quality of Life (QOL) among the study participants unveiled a nuanced perspective across multiple domains. The overall QOL score, with a mean of 39.8 and a standard deviation of 5.44, suggested a moderate level of perceived well-being among the participants. Within the Physical domain, the mean score of 38.76, coupled with a standard deviation of 8.42, indicated a notable variability in individual responses regarding physical aspects of QOL. In contrast, the Psychological domain exhibited the highest mean score at 44.45, reflecting a relatively higher level of satisfaction and well-being in psychological aspects among the participants. The Social and Environmental domains recorded mean scores of 38.89 and 38.63, respectively, portraying moderate levels of satisfaction in the social and environmental dimensions of QOL.

For gender, males exhibited a mean QOL score of 41.27 (SD 7.39), while females had a mean score of 39.05 (SD 6.55) with a p -value of 0.102. Marital

status distinctions revealed that married individuals scored a mean of 41.4 (SD 6.55), whereas unmarried or other status individuals scored a mean of 39.57 (SD 7.21) with a p-value of 0.272. Socioeconomic status delineated categories I, II, III, IV, and V, with mean QOL scores of 42.2 (SD 6.53), 40.56 (SD 6.99),

40.42 (SD 5.77), 0 (SD 0), and 36.63 (SD 7.21), respectively. The corresponding p-value was 0.718. Physical activity levels, categorized as regular, occasional, and never, revealed mean QOL scores of 42.21 (SD 6.25), 39.77 (SD 7.21), and 38.45 (SD 5.47) with a p-value of 0.208.

Table 1: Quality of Life Scores of study participants

QOL score	Mean	Standard deviation
Overall score	39.8	5.44
Physical domain	38.76	8.42
Psychological domain	44.45	7.59
Social domain	38.89	9.21
Environmental domain	38.63	7.42

Table 2: Correlates of Biosocial and socio-demographic characteristics with Quality of life Scores

S.No.	Sociodemographic variables		QOL SCORES OF DIABETICS		P value
			MEAN	S.D	
1	Gender	Male	41.27	7.39	0.102
		Female	39.05	6.55	
2	Marital Status	Married	41.4	6.55	0.272
	Status	Unmarried/other	39.57	7.21	
3	Socioeconomic status	I	42.2	6.53	0.718
		II	40.56	6.99	
		III	40.42	5.77	
		IV	0	0	
		V	36.63	7.21	
4	Physical activity	Regular	42.21	6.25	0.208
		Ocassional	39.77	7.21	
		Never	38.45	5.47	
5	Family h/o	Present	39.28	7.12	0.326
	Diabetes	Absent	41.23	5.88	
6	Alcohol	Yes	36.57	7.27	0.0007
		No	42.52	6.23	

Family history of diabetes exhibited a mean QOL score of 39.28 (SD 7.12) for those with a family history present and 41.23 (SD 5.88) for those with an absent family history, yielding a p-value of 0.326. Notably, alcohol consumption showcased distinctive QOL scores with a mean of 36.57 (SD 7.27) for individuals who consumed alcohol and a mean of 42.52 (SD 6.23) for non-consumers, with a significant p-value of 0.0007.

DISCUSSION

In the current investigation, the prevalence of diabetes in urban areas was determined to be 20.45%. Comparable studies by Jai Prakash Singh et al (2011) in the urban slums of Nagpur among the geriatric population reported an overall prevalence of 17.75%, while Goswami AK. et al (2016), focusing on the urban population aged over 60 years in South Delhi, documented a prevalence of 24.04%. Mohan et al (2007) explored the epidemiology of type 2 diabetes and found a prevalence of 33.6% in the elderly aged 60-69 years. MR Chhetri et al (2009) surveyed Kathmandu, Nepal, revealing an overall prevalence of diabetes of 25.9% in the elderly.^[7-10] Meshram et al (2015), in their study on the prevalence and correlates of diabetes in urban India, reported a prevalence of 11.5%. Notably, the prevalence figures in these studies closely align with the findings of the present study.^[11,12]

Regarding the Quality of Life (QOL) scores in urban diabetics, our study observed the highest mean score in the Environmental domain (45.34) and the lowest in the Physical domain (38.10).^[13-15] In contrast, a study by Prathay Pratim Dutta et al (2015) in the southern part of West Bengal, focusing on the association of quality of life in urban elderly individuals, reported the maximum QOL score in the Environmental health domain (48.36) and the minimum in the social relationship domain (39.62).^[16] Additionally, a study by S.E. Thadatil et al (2015) assessed domain-wise QOL scores in the elderly population using WHO QOL – BREF in the rural area of Kerala. In this study, mean scores of QOL domains were highest in physical health (42.44) and social relationship (42.16), differing from the present study. The lowest mean score in that study was noted in the psychological domain (26.95), whereas in our investigation, it was the social domain that recorded the lowest score (39.22).^[17-19] These variations underscore the diverse perspectives on QOL domains in different populations and settings.

CONCLUSION

In conclusion, this study sheds light on the evolving understanding of diabetes as a complex group of diseases, characterized by diverse etiologies and impacting the quality of life in the urban elderly population. The investigation revealed a prevalence

of diabetes in urban areas, aligning with comparable studies. Quality of Life (QOL) scores among urban diabetics displayed nuanced dynamics across sociodemographic variables, emphasizing the intricate relationship between these factors and QOL. The study underscores the need for personalized interventions to address the unique challenges faced by individuals with diabetes in different populations and settings. Overall, these findings contribute valuable insights into diabetes profiles and quality of life, providing a foundation for targeted healthcare strategies within specific subpopulations.

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REFERENCES

- Ahmad N, Srivastava JP, Chandra S, Sharma RP, Singh SN: An Epidemiological study of diabetes mellitus amongst high-risk age group population of urban and rural areas of Kanpur. Unpublished data. M.D. Thesis (Community Medicine), CSJMU University, Kanpur, 2005.
- Centers for disease control and prevention: National Diabetes Statistics Report: Estimates of diabetes and its burden in the United States, 2014. Atlanta, GA: US Department Of Health and Human Services.
- Dr.Mamta Sharma, Dr.Kapil Shrama, Dr.Viswavijit, Dr.Suman Meena, Dr. Kusum Gaur, Dr.RenuBedi: Quality of Life in Diabetes Mellitus patients: A Descriptive Analysis. International Multispecialty Journal of Health (IMJH) ISSN: [2395-6291] [Vol-2, Issue-9, September- 2016.
- Ganesh Kumar S. et al. Quality of Life among Elderly. Journal of Clinical and Diagnostic Research; 8(1): 54-57, 2014.
- ICMR –INDIAN population-based cross-sectional study (2017) for an overall prevalence of diabetes and pre-diabetes in 15 states, June, 7, 2017.
- K Park Park's Textbook of Preventive and Social Medicine. 24th edition, M/s. Banarsidas Bhanot Publishers. Jabalpur :410-412 , 2017.
- MR Chhetri et al. The overall prevalence of diabetes. Nepal Medical College Journal; 11(1):34-38, 2009.
- Medical Research: IDSP Non- Communicable Disease Risk Factors Survey, Phase-I States of India, 2007-08.
- Mohan et al. A study on the epidemiology of type 2 diabetics. Indian Journal Of Medical Research; March 2007.
- Mohan V., Sandeep S., Deepa R., Shah B., Varghese C: Epidemiology of Type 2 diabetes in Indian Scenario. Indian J Med Res 125, March 2007, pp 217-230.
- Pragya Kumar, Neeraj Agarwal, Chandra Mani Singh, Sanjay Pandey, Alok Ranjan, Dhananjay Kumar: Diabetes and quality of life—a pilot study. International Journal of Medical Science and Public Health | 2016 | Vol 5 | Issue 06, 1143-1147.
- Prathay Pratim Dutta et al. Association of quality of life in urban elderly with socio-demographic factors. International Journal of Medicine and Public Health; 5(4), Oct-Dec 2015.
- Ramachandran: Socioeconomic burden of diabetes in India. SUPPLEMENT OF JAPI. July 2007. Vol 55.
- Rao R.C., Kamath V.G., Shetty A, Kamath A: A study on the prevalence of type 2 diabetes in coastal Karnataka. Int J Diabetes Devtries. 2010 April-June ; 30(2) : 80-85
- Ronald Nyanzi et al: Diabetes and Quality of Life: A Ugandan Perspective. Hindawi Publishing Corporation Journal of Diabetes Research Volume 2014, Article ID 402012, 9 pages.
- Roopa K, S et al. Quality of life in elderly diabetic and hypertensive people –Impact of Intervention Programme. IOSR Journal Of Humanities And Social Science; 19(3), 2014.
- S.E. Thadatil et al. Assessment of domain wise quality of life score in the elderly population using WHO QOL –BREF in the rural area of Kerala. International Journal of Current Medical And Applied Sciences; 7(1):43-46, June 2015.
- Singh et al. Audit of diabetes and development of questionnaires for assessing QOL in diabetics. International Journal Of Diabetes Devtries; 26.(2), March 2006.