Original Research Article

Exploring the Influence of Socioeconomic Disparities on Quality of Life Among Individuals with Type 2 Diabetes

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ABSTRACT

Type 2 Diabetes Mellitus (T2DM) is a growing public health concern, particularly in developing countries, where socioeconomic disparities exacerbate the disease burden. This cross-sectional observational study aimed to explore the influence of socioeconomic status (SES) on the quality of life (QoL) among 110 Gujarati-speaking individuals diagnosed with T2DM. Participants were assessed using the Gujarati version of the WHOQOL-BREF, covering four domains: physical health, psychological well-being, social relationships, and environmental conditions. SES was measured using the Modified Kuppuswamy Scale. Statistical analysis revealed significant associations between SES and all QoL domains, with p-values of 0.04, 0.02, 0.03, and 0.02 for physical, psychological, social, and environmental domains, respectively. Participants from higher SES backgrounds consistently reported better QoL outcomes. The findings highlight that T2DM substantially impairs QoL, particularly in the physical health domain, and that lower SES further exacerbates these outcomes due to factors such as limited access to healthcare, lower health literacy, and increased psychological stress. This study underscores the need for public health strategies that address socioeconomic inequalities in diabetes care to improve overall patient well-being.

Keywords: Type 2 Diabetes Mellitus, Quality of Life, Socioeconomic Status

INTRODUCTION

Type 2 Diabetes Mellitus (T2DM) has emerged as a leading non-communicable disease globally, posing a serious public health challenge in both developed and developing nations. The International Diabetes Federation estimates that over 537 million adults were living with diabetes in 2021, a number projected to rise to 643 million by 2030 and 783 million by 2045 (1). This alarming rise is especially pronounced in developing countries, where rapid urbanization, sedentary lifestyles, high-calorie diets, and limited access to quality healthcare are driving the epidemic (2).

T2DM is not only associated with physiological complications such as neuropathy, nephropathy, retinopathy, and cardiovascular diseases, but also with significant impairments in daily functioning and psychosocial well-being. The chronic nature of diabetes necessitates continuous medical attention, lifestyle adjustments, and self-care behaviors, which cumulatively

affect the individual's Quality of Life (QoL) (3).

QoL is a multifactorial concept that encompasses physical health, psychological well-being, social relationships, and environmental support. Among various determinants, socioeconomic status (SES) plays a critical role in modulating health outcomes and QoL. Low SES is associated with poor health literacy, limited healthcare access, financial constraints, and a higher burden of psychological stress, which can impede effective disease management and deteriorate QoL (4,5). Individuals from lower SES backgrounds often struggle to adhere to treatment regimens due to cost barriers, limited availability of services, and competing life priorities (6).

Given the growing burden of diabetes and the widening health disparities in India, this study was conducted to evaluate the influence of SES on QoL in Gujarati-speaking individuals with T2DM using validated tools appropriate for local populations.

METHODOLOGY

A cross-sectional observational study was conducted among 110 Gujarati-speaking adults diagnosed with Type 2 Diabetes Mellitus. Participants were recruited from outpatient clinics and community health centers across Surat city. Ethical clearance was obtained from the appropriate institutional review board, and informed consent was secured from all participants prior to data collection.

To evaluate the quality of life, researchers utilized the Gujarati version of the WHOQOL-BREF questionnaire, a validated tool that measures QoL across four key domains: physical health, psychological health, social relationships, and environmental conditions. Each domain was scored individually, with higher scores reflecting better perceived quality of life.

Socioeconomic status (SES) was assessed using the Modified Kuppuswamy Scale, which classifies individuals into five categories—upper, upper-middle, lower-middle, upper-lower, and lower class—based on a composite score derived from education level, occupation, and monthly income.

Data were collected through self-administered questionnaires, and for participants with limited literacy, trained interviewers assisted in completing the forms to ensure accuracy. Statistical analyses were conducted using SPSS version 26. To examine the relationship between SES and the different QoL domains, t-tests, one-way ANOVA, and Pearson correlation coefficients were employed. A p-value of less than 0.05 was considered statistically significant.

RESULTS

A total of 110 Gujarati-speaking individuals with Type 2 Diabetes Mellitus participated in the study. The mean age of participants was 52.4 ± 8.7 years, with 55.5% being male and 44.5% female. The duration of diabetes among participants ranged from 2 to 15 years, with an average duration of 7.1 ± 3.6 years.

Socioeconomic status was categorized using the Modified Kuppuswamy Scale. The distribution of participants across various SES categories is provided below.

Table 1: Socioeconomic Status of Participants (n = 110)

Socioeconomic Class	Number of Participants (n)	Percentage (%)
Upper Class	5	4.5%
Upper-Middle Class	20	18.2%
Lower-Middle Class	32	29.1%
Upper-Lower Class	35	31.8%
Lower Class	18	16.4%

Table 2 presents the domain-wise Quality of Life (QoL) ratings among the study participants and the statistical significance of their association with socioeconomic

status (SES). The results indicate that physical health was the most adversely affected domain, with 46.56% of participants reporting low QoL, and the association with SES was statistically significant (p = 0.04). This suggests that individuals from lower SES backgrounds experienced more physical limitations, such as fatigue, pain, or difficulty performing daily activities.

In the psychological health domain, 64.43% of participants reported moderate QoL. This domain, which includes aspects such as emotional well-being, self-esteem, and mental clarity, was also significantly associated with SES (p = 0.02), indicating that mental health outcomes tended to be better among individuals with higher socioeconomic standing.

The social relationships domain also showed a predominance of moderate QoL scores, reported by 55.26% of participants. This domain covers personal relationships and social support, and the association with SES was significant (p = 0.03), suggesting that social interaction and support systems are influenced by socioeconomic conditions. Similarly, in the environmental domain, which includes factors such as safety, financial resources, access to health care, and home environment, 58.16% of participants had moderate QoL. The association with SES was statistically significant (p = 0.02), indicating that environmental satisfaction tends to improve with higher SES.

Although 46.8% of participants reported their overall QoL as "good" and 68.5% perceived their general health as "good", these two parameters were not statistically analyzed for SES association in this study.

Table 2: Domain-Wise Quality of Life Ratings and Association with Socioeconomic Status

QoL Domain	% of Participants	p-value
Physical Health	46.56%	0.04
Psychological Health	64.43%	0.02
Social Relationships	55.26%	0.03
Environmental Factors	58.16%	0.02
Overall QoL Rating	46.8%	—
General Health Perception	68.5%	—

DISCUSSION

This study confirms that T2DM adversely affects multiple facets of quality of life, with the physical health domain most negatively impacted. Similar results were observed by Rubin and Peyrot (7), who highlighted the daily burden of physical symptoms, fatigue, and activity restrictions in diabetic individuals.

Moreover, the statistically significant association between socioeconomic status and QoL across all domains emphasizes the social gradient in health. Individuals with higher SES reported better QoL, possibly due to enhanced access to diabetes education, healthier lifestyle options, early diagnosis, timely treatment, and better adherence to medical recommendations (8,9).

Low SES is often associated with psychological stress, poor diet, substandard housing, and limited social support, which collectively impair an individual's ability to manage chronic illnesses like T2DM (10). In line with our findings, a study by Wändell (11) found that lower SES is linked to poorer diabetes control and increased psychological burden, contributing to lower QoL.

In India, healthcare access and affordability remain major concerns for lower-income populations. Financial limitations can delay care-seeking behavior and force individuals to prioritize immediate survival needs over long-term health maintenance. Therefore, addressing SES-related disparities is critical in public health planning, especially in chronic disease management.

While this study contributes valuable insights, it has certain limitations. Its cross-sectional design limits the ability to infer causality between SES and QoL. Additionally, participants were limited to a specific region and language group (Gujarati-speaking), which may affect generalizability. Future research should employ longitudinal designs, explore causal pathways, and include diverse linguistic and cultural populations to enhance the robustness of findings.

CONCLUSION

This study demonstrated that Type 2 Diabetes Mellitus has a detrimental effect on patients' quality of life, particularly in the physical health domain. Importantly, socioeconomic status was found to significantly influence all four QoL domains. Individuals from higher SES backgrounds reported better QoL, likely due to greater health awareness, access to care, and social resources.

These findings underscore the importance of integrating socioeconomic considerations into diabetes care frameworks and health policy. Public health interventions must focus on improving healthcare equity, strengthening primary care infrastructure, and providing targeted support for individuals from disadvantaged backgrounds to enhance overall well-being and disease outcomes.

Declaration by Authors
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REFERENCES

1. International Diabetes Federation. IDF Diabetes Atlas, 10th ed. Brussels, Belgium: 2021.
2. Hu FB. Globalization of diabetes: the role of diet, lifestyle, and genes. Diabetes Care. 2011 Jun;34(6):1249-57.
3. Rubin RR, Peyrot M. Quality of life and diabetes. Diabetes Metab Res Rev. 1999 May-Jun;15(3):205–218.
4. Marmot M. Social determinants of health inequalities. Lancet. 2005 Mar 19;365(9464):1099–104.
5. Hackett RA, Steptoe A. Type 2 diabetes mellitus and psychological stress—a modifiable risk factor. Nat Rev Endocrinol. 2017 Sep;13(9):547–560.
6. Walker RJ, Smalls BL, Campbell JA, Egede LE. Impact of social determinants of health on outcomes for type 2 diabetes: a systematic review. Endocrine. 2014 Jan;47(1):29–48.
7. Rubin RR, Peyrot M. Psychological issues and treatments for people with diabetes. J Clin Psychol. 2001 Apr;57(4):457–78.
8. Choiniere R, Lafontaine P, Edwards AC. Distribution of cardiovascular disease risk factors by socioeconomic status among Canadian adults. CMAJ. 2000;162(9 Suppl):S13-24.
9. Goyal R, Jialal I. Diabetes Mellitus Type 2. [Updated 2023]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing.
10. Wilkinson R, Marmot M, eds. Social determinants of health: the solid facts. 2nd ed. World Health Organization; 2003.
11. Wändell PE. Quality of life of patients with diabetes mellitus: an overview of research in primary health care in the Nordic countries. Scand J Prim Health Care. 2005 Mar;23(2):68–74

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