

Psychosocial Well-being among Diabetic Individuals

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Abstract

Background: Quality of life (QoL) assessment is considered an important outcome measure in chronic disease management. With an increase in the prevalence of diabetes in India, it becomes imperative to assess QoL in diabetic patients for their better care and control. The present study aimed to assess the QoL among diabetic patients attending the diabetic outpatient clinic and probe its association with glycemic status and management. **Methodology:** A cross-sectional study was conducted for 4 months among 185 type 2 diabetes mellitus (T2DM) patients. Information on sociodemographic profile, diabetic history, and current medications was obtained. QoL was assessed using the General Health Questionnaire-28 (GHQ-28). The results were statistically analyzed. **Results:** Using GHQ-28, the psychosocial components of the patients in the fields related to somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression were assessed. Significantly higher GHQ scores ($P < 0.05$) were noted in T2DM patients with higher glycosylated hemoglobin and increased plasma glucose levels, suggesting stronger associations of poorer QoL with compromised glycemic status. Insulin users exhibited higher GHQ scores (higher scores for depression subdomains) compared to noninsulin users. QoL was also found significantly dependent on the duration of diabetes and other comorbidities. **Conclusion:** The psychosocial well-being of the patients is significantly impacted in cases of chronic ailments like diabetes which adds to the total disease burden eventually. The present study warrants periodic assessment of QoL in diabetic individuals as a part of routine care along with advise of psychiatric counseling for those in need.

Keywords: General Health Questionnaire-28, psychosocial well-being, quality of life, type 2 diabetes mellitus

INTRODUCTION

Diabetes mellitus (DM) is one of the most important public health problem worldwide. The prevalence of diabetes is on exponential rise in both developed and developing nations, with the number of diabetic individuals in the world increased from 110 million in 1994 to 240 million in 2010 and estimated to raise at 300 million in 2025.^[1] As a chronic disease, DM is associated with various factors including social, familial, and personal issues. Owing to its various allied complications, diabetic individuals are required to undergo various lifestyle modifications including dietary restrictions, regular exercise, periodic glucose monitoring, and daily medications.^[2] This places a constant demand on the individual as well as the family, which in turn affects their quality of life (QoL).

The World Health Organization defines health as “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”^[3] Health is, therefore, a holistic element. The prevalence of depression in diabetic patients is nearly twice as high as that in nondiabetic

adults.^[4] The psychosocial burden of diabetic individuals is significant as it affects self-care behaviors, leading to poor glycemic control, increased risk of long-term complications, and poor QoL.^[5] QoL assessment is an important outcome measure in chronic disease management. Understanding the measures of QoL as well as the factors associated with poor QoL helps with improving the physical and psychosocial burden associated with chronic diseases, thus reducing economic burden, morbidity, and mortality. Recent guidelines also emphasize the need for “patient-centered” approach to the management of type-2 DM (T2DM) patients in terms of QoL, prevention of diabetic complications, and achievement

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of glycemic targets.^[6] Routine monitoring of the humanistic aspect of DM treatment can help to ensure better patient communication, identify overlooked problems, and predict treatment response. Improved QoL may also lead to fewer hospitalizations and reduced health-care costs. The present study aimed to assess psychosocial well-being among diabetic patients attending the diabetic outpatient clinic and probe its association with glycemic status and management.

METHODOLOGY

A cross-sectional study was carried out on 185 T2DM patients for 4 months. Permission for conduct of the study was obtained from the institutional ethical committee prior commencement. All T2DM patients on antidiabetic treatment for at least 1 year and consenting to be a part of the study were included in the study. Those with known cases of any psychiatric disorders or on any psychiatric medications otherwise were excluded from the study. For all included subjects, a pretested, structured questionnaire was used to obtain the information on sociodemographic profile, diabetes history, and current medications. Health-related QoL was assessed using the General Health Questionnaire-28 (GHQ-28), which estimates the psychosocial well-being in an individual.^[7,8]

The GHQ-28 is a self-administered instrument, considered suitable for research purposes. The scale involves four domains, namely somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. The GHQ-28 requests participants to indicate how in general their health has been over the past few weeks, using behavioral items with a 4-point scale indicating the following frequencies of experience: “not at all,” “no more than usual,” “rather more than usual,” and “much more than usual.” The minimum score possible is 0, and the maximum is 84. Higher GHQ-28 scores indicate higher levels of distress.^[7,8]

Descriptive data were represented as mean or percentages. Different levels were expressed at a 95% confidence interval. $P < 0.05$ was considered statistically significant. Mean values were compared with hypothesis testing, and correlation analysis was attempted for various Grades and Scores wherever applicable. All statistical analyses for various measures were performed using various statistical software packages such as SPSS version 21.0 (Released 2012; IBM Corp., Armonk, New York, United States) and Microsoft Excel.

RESULTS

Of the total included study participants, male represented 61.1% ($n = 113$) of the study population, thus bringing a sex ratio of 1.56:1. A mean age of 54.63 ± 10.16 years was noted, with majority of the participants (65.4%) belonging to the age band of 51–70 years. Mean glycemic variables such as glycated hemoglobin (HbA1C), fasting plasma glucose, and duration of diabetes were noted for all respondents. The average duration of diabetes was recorded as 3.15 years [Table 1].

QoL, as assessed using the GHQ-28 scale, revealed the mean GHQ-28 score to be 38.54, nearing the median level of

Table 1: Patient characteristics

Variables	Observations
Gender distribution, n (%)	
Male	113 (61.1)
Female	72 (38.91)
Age distribution (years), n (%)	
31–50	62 (3.35)
51–70	121 (65.40)
>70	2 (1.08)
Insulin usage, n (%)	
Insulin users	96 (52)
Insulin nonusers	89 (48)
Glycemic variables, mean \pm SD (range)	
Mean duration of diabetes (years)	3.15 \pm 1.205 (1–5)
Mean fasting plasma glucose (mg/dL)	192.61 \pm 33.25 (130–300)
Mean HbA1C (%)	8.18 \pm 0.99 (6.0–10.6)
Mean HbA1C (%) in insulin users	8.34 \pm 0.81 (6.4–10.6)
Mean HbA1C (%) in insulin nonusers	8.02 \pm 0.79 (6.0–10.1)
Achieving glycemic target, n (%)	
Insulin users	98 (53.3)
Insulin nonusers	87 (51.9)
Antidiabetic drug usage, n (%)	
Biguanides	125 (67.57)
Sulfonylureas	101 (54.59)
Insulin	96 (51.8)
DPP4 inhibitors	59 (31.89)
Alpha-glucosidase inhibitors	40 (21.62)
Thiazolidinediones	10 (5.40)
GLP-1 agonists	0
SGLT2 inhibitors	0
GHQ-28 sub domains score, mean \pm SD (range)	
Somatic symptoms	9.16 \pm 1.405 (5–12)
Anxiety/insomnia	10.88 \pm 1.26 (8–12)
Social dysfunction	9.56 \pm 1.12 (7–13)
Severe depression	8.94 \pm 0.96 (7–12)
Total GHQ-28	38.54 \pm 3.86 (31–46)

SD: Standard deviation, GHQ: General Health Questionnaire, HbA1C: Glycated hemoglobin, GLP-1: Glucagon Like Peptide-1, SGLT2: Sodium Glucose Co-Transporter-2, DPP4: Dipeptidyl Peptidase-4

compromised stress level. Among the various subdomains of somatic symptoms, anxiety and insomnia, social dysfunction, and depression assessed, the mean subdomain score of anxiety was on a higher mark in comparison to the other domains [Table 1].

Association between GHQ-28 subdomains (somatic symptoms, anxiety/insomnia, social dysfunction, and severe depression) and various glycemic variables such as age, HbA1C, fasting glucose, duration of diabetes, and insulin usage was assessed. Glycemic variables such as HbA1C and fasting glucose showed a strong significant positive correlation with each subdomain of the GHQ-28, indicating higher glycemic indices contributing to distress ($P < 0.01$). The duration of diabetes showed a significant strong positive correlation with anxiety ($P < 0.001$). Insulin usage was found weakly correlated with anxiety/insomnia subdomain, whereas no association with other subdomains

Table 2: Association measure (Pearson's correlation coefficient)

GHQ-28 sub domains	Age	HbA1C	Fasting plasma glucose	Duration of diabetes	Insulin usage
Somatic symptoms	0.159*	0.579**	0.486**	0.140*	0.111*
Anxiety/insomnia	0.304*	0.785**	0.612**	0.671**	0.378*
Social dysfunction	0.266*	0.460**	0.255*	0.310*	0.117*
Severe depression	0.009	0.693**	0.580**	0.382*	0.003

*Weakly correlated, **Strongly correlated. GHQ: General Health Questionnaire, HbA1C: Glycated hemoglobin

was observed. Age showed a significant positive correlation with subdomains such as somatic symptoms, anxiety/insomnia, and social dysfunction [$P < 0.001$, Table 2].

DISCUSSION

The present study aimed at assessing the psychosocial well-being using the GHQ-28 scale in ambulatory T2DM patients on antidiabetic therapy for at least 1 year. In an attempt to understand the situation, the study included 185 T2DM patients, who demonstrated significantly higher GHQ domain scores with higher HbA1C and increased plasma glucose levels, suggesting a stronger association of poorer psychosocial well-being with compromised glycemic status. Insulin usage was found correlated with anxiety subdomain. Psychosocial well-being was also found to be significantly dependent on the duration of diabetes and age.

In chronic conditions such as T2DM, clinical and economic stressors silently contribute to emotional distress in patients and even their caregivers. Assessment of QoL in such individuals is thus necessary to address the multidimensional functional outcomes of the treatment. The GHQ-28 scale is held as an appropriate research tool to capture emotional stress. The present study assessed the psychosocial well-being based on domains such as somatic symptoms, anxiety/insomnia, social dysfunction, and depression.

The findings of this study are consistent with other available literature, where poorer QoL has been reported with compromised glycemic indices.^[6,9] Increased age has also been found to be significantly correlated to poorer psychosocial well-being in T2DM individuals, which is consistent with a finding of Prajapati *et al.*,^[10] Ali *et al.*,^[11] and Glasgow *et al.*^[12]

The duration of diabetes was also a potential contributor of compromised QoL, as explored by this study, and similar observations have been made by Pati *et al.*,^[13] Bahety *et al.*,^[14] Patel *et al.*,^[15] and Prajapati *et al.*^[10]

Being a chronic condition, periodic assessment of psychosocial well-being in diabetic individuals can help predict a patient's capacity to manage the disease and individual health. Periodic assessment of these humanistic aspects as a part of clinical practice can help to individualize treatment keeping in view the patient's psychological and social factors, thus aiding better treatment outcomes in chronic care.

CONCLUSION

Psychosocial well-being in diabetes patients is significantly impacted which adds to the total disease burden eventually.

Periodic assessment of psychosocial well-being is warranted in diabetic individuals as a part of routine care and psychological counseling for those in need should be ensured.

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Conflicts of interest

There are no conflicts of interest.

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