Research Article

Quality of life among type 2 diabetes patients in Udupi taluk: a cross-sectional study

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Abstract

Background: Health-related quality of life (QOL) is considered as an important component in the diabetes care and management; unfortunately, assessments of diabetes interventions focus mainly on glycemic control with limited consideration of QOL.

Objective: Assessment of QOL among diabetic patients registered in primary health centers of Udupi taluk, Karnataka.

Materials and Methods: A cross-sectional study was done using, Short-Form (SF) 36 version2 to measure QOL among diabetic patients. Total numbers of participants included 138 subjects with diabetes. Participants were selected from the primary health centers located in the Udupi taluk. Data were analyzed using SPSS, version 15.00.

Results: The mean age of the study participants was 57.40 ± 11.10 years and the mean duration of diabetes was 9.29 ± 6.32 years. Physical activity (>30 minutes) per day was followed by 33.3% study participants. The overall SF-36 score was 43.12 ± 7.0; the domains of the SF-36 score were the following: physical functioning with 40.57 ± 6.34, role physical 44.20 ± 9.27, body pain 43.09 ± 7.91, general health 42.48 ± 7.33, vitality 45.13 ± 5.59, social functioning 42.91 ± 6.56, role emotional 38.50 ± 12.08, and mental health 44.68 ± 5.75. The two most affected domains were "physical functioning" and "role emotional" among the study participants. Overall, men had better QOL scores; this was found to be statistically significant ($P = 0.002$). QOL were better among the educated group of participants than illiterate group of participants.

Conclusion: In diabetes management, QOL needs to be emphasized in health program for more effective approach.

KEY WORDS: Type 2 diabetes, quality of life, SF-36

Introduction

The number of people with diabetes is steadily increasing worldwide.[1] The number of people diagnosed with diabetes in the world has risen from 177 million in 2000 to 382 million in 2013.[2] The number of diabetes patients in India was 31.7 million in 2000 and it is going to increase to 79.4 million in 2030.[2] The prevalence of type 2 diabetes reported in coastal Karnataka was 16% in 2010.[3] Cases of diabetes in India are attributed to the lifestyle changes along with rapid urbanization and industrialization.[4] In a large review, "Quality of life and diabetes," by Rubin and Peyrot, it was stated that significant associations have been found between socioeconomic status and health-related quality of life (HRQOL) in the general population, while no significant association has been found between race and ethnicity and HRQOL among people with diabetes.[5]

Cardiovascular disease (CVD) is a major cause of death and disability in diabetic patients, accounting for 52% in type 2 diabetes, and two-fold increased risk of stroke within the first 5 years of diagnosis compared with the general population.[6] Kidney disease accounts for 11% of death in type 2 diabetes.[7] Diabetic patients are two times more susceptible for developing cataracts or glaucoma.[8] Overall life expectancy is reduced up to 10 years in people with type 2 diabetes.[9]

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Diabetes care and management requires continuous and committed efforts from the diabetic person. This incorporates such factors as home blood glucose monitoring, meal plan, regular exercise, and good compliance of medication. The overall goal for the treatment of all diabetes is to prevent acute and chronic complications, while preserving a good QOL for the patients.[10]

In this context, the current study evaluates the QOL among diabetes patients of Udupi taluk, Karnataka. This study is expected to increase the awareness about self-care among patients and its association with QOL.

Materials and Methods

Study Area

This study was conducted among diabetes patients of Udupi taluk, Karnataka. List of primary health centers was obtained from District Health Office, and 10 primary health centers (PHCs) were selected randomly by lottery method. The address of diabetes patients was obtained from PHC laboratory records. Participants were selected by random sampling method.

Study Population

Type 2 diabetic patients registered in PHCs and those on treatment for diabetes, were included in the study. Bedridden patients and severely ill were excluded from the study.

Table 1: Distribution of participants by their sociodemographic characteristics (n = 138)

Variable	Category	Number (%)
Gender	Male	64 (46.4)
	Female	74 (53.6)
Religion	Hindu	109 (79)
	Muslim	20 (14.5)
	Christian	9 (6.5)
Caste	SC/ST	6 (4.3)
	OBC	27 (19.6)
	General	105 (76.1)
Education	Primary	60 (43.5)
	Secondary	29 (21)
	Pre-university	8 (5.8)
	Graduate and above	5 (3.6)
	Illiterate	36 (26.1)
Marital status	Married	121 (87.7)
	Unmarried	0 (0)
	Widowed	17 (12.3)
Occupation	Skilled	2 (1.4)
	Unskilled	59 (42.8)
	Professionals	1 (0.7)
	Unemployed	9 (6.5)
	Home makers	67 (48.6)
Place of residence	Rural	82 (59.4)
	Urban	56 (40.6)

Table 2: Distribution of participants by their duration of DM (n = 138)

Variable	Category	Number (%)
Duration of DM (in years)	1-5	50 (36.2)
	6-10	31 (22.4)
	11-15	35 (25.3)
	16-20	19 (13.7)
	20+	3 (2.1)
	Total	138 (100)

Table 3: Physical component summary—quality of life

Domain	*N*	Mean	Std. deviation
PF (Physical functioning)	138	40.57	6.34
RP (Role physical)	138	44.20	9.27
BP (Bodily pain)	138	43.09	7.91
GH (General health)	138	42.48	7.33
PCS (Physical component summary)	138	43.19	7.61

Table 4: Mental component summary—quality of life

Domain	*N*	Mean	Std. deviation
VT (Vitality)	138	45.13	5.59
SF (Social functioning)	138	42.91	6.56
RE (Role emotional)	138	38.50	12.08
MH (Mental health)	138	44.68	5.75
MCS (Mental component summary)	138	43.05	6.34
SF-36 score	138	43.12	6.99

Sample Size

One hundred thirty-eight participants were included in the study. Based on the sample size calculation, P (proportion of event) in the population is 20% with yearly eye examination and margin of error (d) = 10% with addition of design effect and nonresponse rate, final sample size = 138.

Study Instrument

A pretested semistructured interview schedule was used for the data collection. Informed consent was obtained before the initiation of the study. The response rate was 98%. A standardized questionnaire, SF-36 v2 (Kannada version), was used to measure QOL of diabetic patients. This questionnaire SF-36v2 has two components and each component contains four domains for measuring the QOL. The four domains representing physical component summary containing physical functioning (PF), body pain (BP), general health (GH) and role physical (RP). mental component summary (MCS) containing the domains are vitality (VT), mental health (MH), social functioning (SF), and role emotional (RE). All questions were scored on a scale of 0–100, with "100" score representing the best status for QOL. The scoring manual of Ware et al.[11] was used for scoring the QOL among the study participants.

Figure 1: Physical and mental component summary—age group wise (*n* = 138).

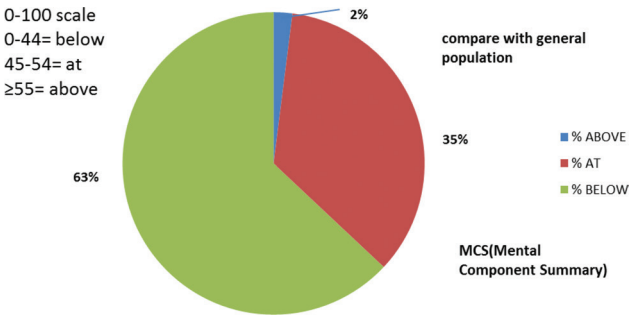

Figure 2: Mental component summary (*n* = 138).

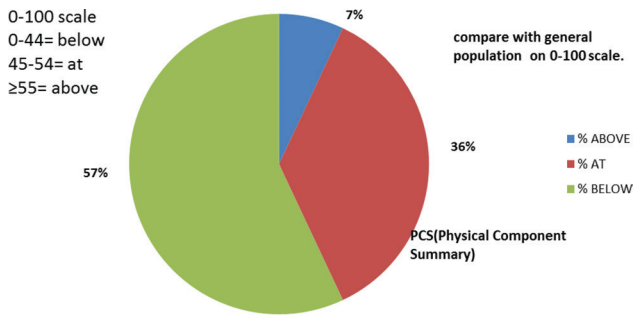

Figure 3: Physical component summary (*n* = 138).

Result

Out of the 138 participants, 53.6% were women and 46.4% were men. The mean age of the participants was 57.40 ± 11.10 years. The majority of participants (59.4%) were from the rural area and 87.7% of the study participants were married. The majority (43.5%) of participants had primary level education, and only 26.1% were illiterate. The mean duration of diabetes was 9.29 ± 6.32 years among the study participants. Physical activity (>30 min) was followed by less than half of the participants (33.3%).Majority of the participants (42%) opted for once-in-2-month blood glucose test. In this study,

15.2% participants followed most of the time healthful eating plan and 26.8% participants never followed any kind of eating plans. QOL was assessed using the SF-36v2 questionnaire. The PCS (physical component summary) contains four domains: PF, GH, BP, and RP. In this study, participants showed better with RP with mean score 44.20 ± 9.2. Participants scored poor in PF with mean score 40.57 ± 6.3; the overall PCS mean score was 43.19 ± 7.6. The MCS contains four domains: VT, MH, social functioning, and RE; these four domains give the overall MCS score of the individuals. In the current study, participants show better with VT with mean score 45.13 ± 5.5. Participants score poor in RE with mean score 38.50± 12.08. The overall MCS mean score was 43.05 ± 6.3. The two most affected domains were PF and RE (Tables 3 and 4). The two domains that were least affected were RP and VT. Overall, men had higher QOL scores compared to women. This difference was found to be statistically significant ($P = 0.002$). When the SF-36 scores and its subdomains were compared against various sociodemographic factors, significant associations were observed. Domain scores were found to have statistically significant association with gender and education. Diabetic patients in the age group 25–34 years score well and they had good QOL, but elderly participants (65 years and more) score lower. Elderly participants had poor QOL than the younger diabetes patients.

Discussion

In this study, total 138 participants were interviewed in Udupi taluk. Majority (70%) of the participants were in the age-group of 35–64 years, which is consistent with the pattern of diabetes observed in developing countries.[1] Women participants are more (53.6%); similar women participation was reported by Padma et al.[12] and Muninarayana et al.[13] The study participants' duration of diabetes mean value was 9.29 ± 6.32 years, whereas duration of diabetes of 8.2 years was reported by shah et al.[14] and 10.2 ± 6.8 years by Hawal et al.[15] in their respective studies. Majority of the participants (42%) opted for once-in-2-month blood glucose test; similar kind of finding was reported by Kapur et al.[16] Overall, the SF-36 score was lower 43.12 ± 6.99 among the study participants. Two major domains PCS (43.19 ± 7.61) and mental component summary (43.05 ± 6.34) scored lower among the participants. Participant score was worst in PF, with mean score 40.57 ± 6.3, and in RE, with mean score 38.50 ± 12.08. Whereas similar study conducted in Delhi by Gautam et al.[17] reported that the domains most affected were "general health" and "vitality." In the current study, QOL significantly associated with education and gender; similar finding was reported by Gautam et al.[17]

Conclusion

Majority of the participants are from rural area, poor socioeconomic status, and low literacy rates. QOL is affected significantly by factors such as literacy and gender. However, men adapt better QOL with diabetes as compared to women. Health-care professionals in PHC must consider the life style of each individual with type 2 diabetes including physical, mental, cultural, and social background and the differences between the genders. Care plans could focus on the individual's diet and exercise counseling. Our suggestion for improving Quality of life in diabetes: more meditation compliance, regular physical activity, home based blood sugar monitoring, and diet and exercise counselling services could be available at PHC level. Only PHC-registered patients participated in our study, so finding cannot be generalized for the whole community.

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