e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2023; 15(11); 649-654

Original Research Article

An Observational Assessment of the Level of Self-Care Practices and Perception of the Position in Life among Individuals with Type 2 Diabetes Mellitus (T2DM) in Rural Field Practice Areas in Jharkhand

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Received: 12-08-2023 Revised: 18-09-2023 / Accepted: 27-10-2023
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Conflict of interest: Nil

Abstract

Aim: The aim of the present was to assess the level of self-care practice and perception of position in life among individuals with type 2 diabetes mellitus (T2DM) in rural areas Jharkhand.

Methods: A community-based cross-sectional survey was conducted in the rural field practice area of tertiary care hospital in Jharkhand for individuals clinically diagnosed with T2DM for more than 6 months. A total of 200 participants were analyzed who were clinically diagnosed with diabetes for more than 6 months. We excluded people who had co-morbidities like cancers, mental illness, or any diseases that were debilitating in nature, as we expected those conditions to affect our outcome variables. The study period was one year.

Results: The participants were almost equal with respect to gender, the majority of the participants 66% belonged to the age group between 41-60 years, 31% of them had education up to high school level and the majority 52.6% of the participants reported their diabetes duration as more than 5 years. But 55% of the participants were living with hypertension as a comorbidity. On analysis of the BMI, one-third of the participants were either overweight or obese, majority of the participants had stage 2 hypertension. Of the study population, almost half (47%) of the participants had glycaemic levels well above 125 mg/dl.The WHO quality of life BREF scale responses were analysed. The mean score of overall quality of life was calculated to 62.68±15.45, and it was also observed that the mean score of physical quality of life was lowest among all the domains of quality of life, at 56.04±7.73.On analyzing the total quality of life 17% of participants reported having poor overall quality of life.

Conclusion: In conclusion, this survey study sheds light on the practices and quality of life among individuals with T2DM. The findings reveal that while there are areas of concern, such as poor physical activity, foot care, and blood glucose monitoring practices, participants demonstrated better adherence to diet and medications. Importantly, despite these challenges, the quality of life among the participants was reported as good. These results emphasize the need for targeted interventions and education programs to promote healthy lifestyle practices and further enhance the overall well-being of individuals living with T2DM.

Keywords: Self-care practices, Quality of life, T2DM, rural areas and foot care.

Introduction

Quality of life is an individual perception of their position in life in the environment of the culture and values systems in which they live and about their aim, prospects, norms, and concerns. [1] The quality of life of T2DM patients is an essential outcome used to evaluate the impact of the disease, treatment, and health care costs. Nonstop diurnal treatment conditions affect the quality of life; a positive association between high perceived quality of life and good glycemic control has been reported. Self-care management is a treatment carried out independently by patients to observe their own requirements without depending on the surrounding environment. Self-care management of T2DM patients consists of adhering to a diet program, physical exercise, controlling blood sugar levels, medication, and foot care to prevent further complications and control blood glucose. [2]

Inadequate control of blood sugar can result in adverse complications of the diseases. [3] Complications from DM involving the eyes account for 2.6% cases who are blind. Regarding the effects of complications of kidney function related to DM, a study of 54 countries found that 80% of chronic kidney disease cases were attributed to DM. DM cases with foot lesions are at high threat of amputation. There is a 20-fold increased risk of amputation of an infected for DM cases. [4] Therefore, DM is a major cause of death and disability causing significant harm to a nation's economy and a person's quality of life (QoL). [3] Previous research confirmed that DM with complications significantly reduced QoL[5]while other studies found QoL in patients with type II DM were moderate and low. [6-8]

Diabetes has the potential to cause numerous debilitating health complications that can lower the quality of life and lead to an early death. Most often, complications are the results of unmanaged or poorly managed diabetes. [9] Therefore, a healthy diet, regular physical activity, medicines, and blood sugar control are needed toprevent the complications accompanied by diabetes mellitus. [10,11] The quality of life (QoL) is a highly subjective measure of happiness and shows how much an individual is healthy, comfortable, and can participate in or enjoy life events. [12] Type 2 diabetes can be managed with diabetes self-management skills. Self-care is the ability of the patient with the family, and the community to promote health, prevent illness, maintain health, and deal with the disease and disability with or without the help of health care providers. [13] Diabetic patients have to change their behaviors and perform self-care activities. The aspects oflife with diabetes that may affect the quality of life include the never-ending demands of diabetes care, such as eating carefully, exercising, monitoring blood glucose, and scheduling and planning. [14,15]

The aim of the present was to assess the level of self-care activities and quality of life among individuals with type 2 diabetes mellitus (T2DM) in rural areas Jharkhand.

Materials and Methods

A community-based cross-sectional survey was conducted in the rural field practice areas tertiary care hospital in Jharkhand for individuals clinically diagnosed with T2DM for more than 6 months. A total of 200 participants were analyzed who were clinically diagnosed with diabetes for more than 6 months. We excluded people who had co-morbidities like cancers, mental illness, or any diseases that were debilitating in nature, as we expected those conditions to affect our outcome variables. The study period was one year.

Non-communicable disease (NCD) clinics are operational in almost all villages under NCD programs which require ASHA workers to enable a list of all individuals diagnosed with different NCDs. We utilized this list for filtering all the people with diabetes visited them at their homes to explain the objectives and expectations of the individuals. Individuals who gave consent for the study were informed to fast the next day for the fasting blood sugar (FBS) collection in the early hours of the morning, following which all the outcome measures were collected through interview schedules.

A total of 200 people with diabetes were interviewed for the socio-demographic variable with a self-structured socio-demographic performa, self-care activities with summary of diabetes self-care activities (SDSCA) scale, and quality of life with the WHO quality of life-BREF scale. Blood Pressure, FBS, and waist circumference of all the participants were also recorded.

The data were analyzed using IBM SPSS statistics version 26.0 and Microsoft excell sheets. Demographic and physiological measurements were categorized and reported with frequency and percentage distribution. The quality of life raw scores was transformed as per the WHO quality of life manual into 0-100 scores. The mean score was taken as 50, and a score below 50 was considered a poor quality of life and vice versa. The SDCSCA scores were divided according to the number of days the individual performed a particular self-care

activity and categorized into 0 days, 1-3 days, and 4-7 days.

The study was approved by the institutional ethical committee. All the participants were notified about the study objectives, response confidentiality was assured, and written consent was obtained.

Results

Table 1: Frequency and Percentage distribution of sociodemographic characteristics of people with T2DM

Socio-demographicvariables	Categories	N (%)
Age(inyears)	≤40	16(8)
	41-50	50 (25)
	51-60	82 (41)
	61-70	44 (22)
	71-80	4 (2)
Gender	Male	96 (48)
	Female	104 (52)
Education	Illiterate	34 (17)
	Primary school	38 (19)
	Middleschool	20(10)
	High school	62 (31)
	Graduationand above	46 (23)
Maritalstatus	Unmarried	6 (3)
	Married	180 (90)
	Widow	14(7)
Occupation	Unemployed	12(6)
	Business/farmer	64 (32)
	Skilledworker	6 (3)
	ServiceJob	30 (15)
	Housewife	88 (44)
Diabeticcomplication	Retinopathy	1 (0.5)
	Diabetic foot	3 (1.5)
	No complications	196 (98)
Co-morbidities	Hypertension	110 (55)
	Arthritis	24 (12)
	Gastritis	8 (4)
	Asthma	2 (1)
	Noco-morbidities	56 (28)
BMI(kg/m^2)	Underweight(≤18.5)	20 (10)
	Normal(18.6-24.9)	110 (55)
	Overweight(25-30)	54 (27)
	Obesity(>30)	16(8)
Waistcircumference Men	Normal(<90cm)	52 (26)
	Diseaserisk(>90cm)	46 (23)
Waistcircumference Women	Normal(<80cm)	52 (26)
	Diseaserisk(>80cm)	50 (25)
FBS	Upto 110 mg/dl	56 (28)
	≥111-140mg/dl	50 (25)
	≥141mg/dl	94 (47)

The participants were almost equal with respect to gender, the majority of the participants 66% belonged to the age group between 41-60 years, 31% of them had education up to high school level and the majority 52.6% of the participants reported their diabetes duration as more than 5 years. But 55% of the participants were living with hypertension as a comorbidity. On analysis of the BMI, one-third of the participants were either overweight or obese, majority of the participants had stage 2 hypertension. Of the study population, almost half (47%) of the participants had glycaemic levels well above 125 mg/dl.

Table 2: Mean and standard deviation of quality of life of people with T2DM

Domains	N	Minimum	Maximum	Mean	SD
Physical quality of life	200	33	83	56.04	7.73
Psychological quality of life	200	32	82	68.42	15.30
Social quality of life	200	20	81	65.45	18.72
Environmental quality of life	200	27	86	58.82	18.74
Overall quality oflife	200	43	82	62.68	15.45

The WHO quality of life BREF scale responses were analysed. The mean score of overall quality of life was calculated to 62.68±15.45, and it was also observed that the mean score of physical quality of life was lowest among all the domains of quality of life, at 56.04±7.73.

Table 3: Frequency and percentage of quality of life of people with T2DM

Domains	Goodscore (≥50), N	Poorscore (<50), N
Physical quality of life	170	30
Psychological quality of life	168	32
Social quality of life	104	96
Environmental quality of life	184	16
Overall quality of life	166	34

On analyzing the total quality of life 17% of participants reported having poor overall quality of life.

Table 4: Frequency and percentage distribution of self-care activities of people with T2DM

Self-careactivities	Inlastsevendays,howmany:	N		
		0 days	≤3days	≤4-7days
General diet: days have you followed your eating plan?		20	48	132
Specific diet: times did you eat, 5 or more fruits/Vegetables?		20	44	136
Times, did you eat high-fat foods?		16	72	110
Times , did you space carbohydrates evenly?		16	36	148
Exercise: times, did you do physical activity for at least 30 minutes?		130	26	44
Times, did you do specific exercises, in the last seven days?		130	22	48
Blood sugar testing: times, did you test blood sugar?		170	26	4
Foot care: times, did you check your feet?		84	48	68
Times, did you inspect your shoes?		160	24	16
Times, did you soak your feet?		86	48	66
Times, did you wash your feet?		60	44	96
Times, did you dry your toes after washing?		68	40	92
Medicine: Times, did you take your diabetic medication?		48	4	148

The majority of the participants adhered to a healthy eating plan (spacing carbohydrates evenly, eating 5 or more fruits/vegetables) except for the consumption of fatty food. The majority of the participants were not engaged in any kind of exercise in the last week. Another finding was that 85% of individuals hadn't checked their blood sugar in the previous week. In regard to foot care, 30%and 43% of the participants washed their feet regularly and dry them after washing respectively, whereas 80% did not check their shoes regularly. The highest adherence was found in medication with 74%.

Discussion

Diabetes is monopolizing the health system over the world and spiralling out of control. As per IDF (2021), approximately 537 million people, aged 20-79 years are living with diabetes currently across the globe and it also forecasts that the current number of diabetic people will outreach 643 million by 2030, and 783 million by 2045. Currently, India is home to the second-largest diabetic population in the world with 74.2 million and expected to reach 124.9 million by 2045. Currently, 53.1% of diabetics living in India are unaware of their condition. Globally, one in every seven diabetic patients belongs to India and one diabetic patient lives in every third household. [16,17] When diabetes is unattended or uncontrolled, poses a greater risk for diabetic complications, premature death, and a lower quality of life. The seven self-care practices are the best-proven defense against the abrupt glycaemic index and diabetic complications. [18,19]

Karthik et al [20] reported on self- care practices among rural diabetic patients of Tamil Nādu. Merely 5.6% of participants engaged in good self- care activities, while 52.4% engaged in extremely poor self-care. The majority of participants exhibit high adherence to blood sugar testing and medication, but

they had very low adherence to other domains like exercise, diet, and foot care.Neglected and poorly managed diabetes, not only has awful consequences for health but also has a creepy effect on well-being and other spectrum of life. One such spectrum is quality of life. [21] Diabetes has its own psychological and social impacts on individuals in addition to these physical ones. Thus, many diabetic patients feel overburdened due to the continuous demand for their disease and its management, and this persistent physical misery associated with diabetes may make these psychological and social obligations even more severe. Therefore, diabetes alone may cause a person's quality of life to decline. [22,23] The participants were almost equal with respect to gender, the majority of the participants 66% belonged to the age group between 41-60 years, 31% of them had education up to high school level and the majority 52.6% of the participants reported their diabetes duration as more than 5 years. But 55% of the participants were living with hypertension as a comorbidity. On analysis of the BMI, one-third of the participants were either overweight or obese, majority of the participants had stage 2 hypertension. Of the study population, almost half (47%) of the participants had glycaemic levels well above 125 mg/dl. The WHO quality of life BREF scale responses were analysed. The mean score of overall quality of life was calculated to 62.68±15.45, and it was also observed that the mean score of physical quality of life was lowest among all the domains of quality of life, at 56.04±7.73 which was similar to the studies from Odisha and Vellore, where it was reported that 64% and 68% respectively. [23,24] Mostly these barriers to self-management are reported to be poor knowledge, prevailing misconceptions and lack of culturally specific management. [25]

On analyzing the total quality of life 17% of participants reported having poor overall quality of life. The majority of the participants adhered to a healthy eating plan (spacing carbohydrates evenly, eating 5 or more fruits/vegetables) except for the consumption of fatty food. The majority of the participants were not engaged in any kind of exercise in the last week. Another finding was that 85% of individuals hadn't checked their blood sugar in the previous week. In regard to foot care, 30%and 43% of the participants washed their feet regularly and dry them after washing respectively, whereas 80% did not check their shoes regularly. The highest adherence was found in medication with 74%.Contrasting findings were found in a study done in Maharashtra where high satisfactory results were seen in physical activity (61.91%), foot care (54.28%), and high unsatisfactory result in diet (51.43%). The use of medications seems to be similar with our findings, with higher percentage (93.83%) of individuals consuming medications satisfactorily, which may be due to the urban sample group. [26] Yet similar findings to our study were seen in a survey conducted in a tertiary care hospital in Vijaywada which caters to rural population with results showing inadequate physical activity (63%), foot care (69%) as well as adequate use of medication (61%). [27]

Conclusion

In conclusion, this survey study sheds light on the practices and quality of life among individuals with T2DM. The findings reveal that while there are areas of concern, such as poor physical activity, foot care, and blood glucose monitoring practices, participants demonstrated better adherence to diet and medications. Importantly, despite these challenges, the quality of life among the participants was reported as good. These results emphasize the need for targeted interventions and education programs to promote healthy lifestyle practices and further enhance the overall well-being of individuals living with T2DM.

References

1. Fadini GP, Morieri ML, Longato E, Avogaro DA. Prevalence and impact of diabetes among people infected with SARS-CoV-2. Journal of endocrinological investigation. 2020 Jun;43:8 67-9.
2. Luthfa I, Fadhilah N. Self Management MenentukanKualitasHidupPasien Diabetes Mellitus. Jurnal Endurance. 2019;4(2):402-10.
3. International Diabetes Federation [IDF]. IDF diabetes atlas 2015 update. 7th ed. Brussels, Belgium:IDF; 2015.
4. Kanchanapiboonwong A. Annual epidemiological surveillance report 2012.
5. Pragodpol P, Suwannaka Y, Chairit A. Quality of life in chronic disease patients with and withoutcomplications and guidelines for improving the quality of life. Nonthaburi: Health SystemsResearch Institute; 2015.
6. Srichaijaroonpong S, Inthasoi T, Petchwisai A, Paisan R. Factors relating to the quality of life ofthe diabetic patients at Ban Chiang Kruea Pho Chai health promoting hospital Chiang Kruea subdistrict Muang district SakonNakorn province. Journal of the office of DPC 7 Khon Kaen. 2016;23(3): 23-33.
7. Changchuea W. Quality of life of diabetic patients in Sawaeng Ha district, Ang Thong province.Region 4 Medical Journal. 2013; 15 (2): 97-104.
8. Konsantiya S. Quality of life of diabetic mellitus persons: a case study at Muangyang HospitalNakhonratchasima. The Journal of Boromarajonani College of Nursing, Nakhon Ratchasima. 2011;17(1): 31-44.
9. Jiao F, Wong CKH, Gangwani R, Tan KCB, Tang SCW, Lam CLK. Healthrelatedquality of life and health preference of Chinese patients

with diabetes mellitus managed in primary care and secondary care setting: decrements associated with individual complication and number of complications. Health Qual Life Outcomes. 2017;15(1):125.
10. Fowler MJ. Microvascular and macrovascular complications of diabetes.Clin Diabetes. 2008 ;26(2):77–82.
11. Dong Y, Wang P, Dai Z, Liu K, Jin Y, Li A, Wang S, Zheng J. Increased self-care activities and glycemic control rate in relation to health education via Wechat among diabetes patients: a randomized clinical trial. Medicine. 2018 Dec;97(50).
12. Mokhtari Z, Gheshlagh RG, Kurdi A. Health-related quality of life inIranian patients with type 2 diabetes: An updated meta-analysis. Diabetes MetabSyndr. 2019;13(1):402–7.
13. Amelia R. The model of self care behaviour and the relationship withquality of life, metabolic control and lipid control of type 2 diabetes mellitus patients in Binjai city, Indonesia. Open Access Maced J Med Sci. 201 8;6(9):1762–7.
14. Saleh F, Mumu SJ, Ara F, Hafez MA, Ali L. Non-adherence to self-care practices & medication and health related quality of life among patients with type 2 diabetes: a cross-sectional study. BMC public health. 2014 Dec; 14:1-8.
15. Tharek Z, Ramli AS, Whitford DL, Ismail Z, Mohd Zulkifli M, Ahmad Sharoni SK, Shafie AA, Jayaraman T. Relationship between self-efficacy, self-care behaviour and glycaemic control among patients with type 2 diabetes mellitus in the Malaysian primary care setting. BMC family practice. 2018 Dec;19(1):1-0.
16. Sun H. IDF Diabetes Atlas: Global, regional and country-level diabetes prevalence estimates for 2021 and projections for 2045. Diabetes Res ClinPract. 2022;183.
17. Maiti S, Akhtar S, Upadhyay AK, Mohanty SK. Socioeconomic inequality in awareness, treatment and control of diabetes among adults in India: Evidence from National Family Health Survey ofIndia (NFHS), 2019-2021. Scientific Rep. 2023;13(1):1-12.
18. Selvaraj K. Self-care practices among diabetes patients registered in a chronic disease clinic in Puducherry, South India. 2016;1.
19. Shrivastava SRBL, Shrivastava PS, Ramasamy J. Role of self-care in management of diabetes mellitus. J Diabetes MetabDisord. 2013;12:1-5.
20. Karthik RC, Radhakrishnan A, Vikram A, Arumugam B, Jagadeesh S. Self-care practices among type II diabetics in rural area of Kancheepuram district, Tamil Nadu. Journal of Family Medicine and Primary Care. 2020 Jun; 9(6):2912.
21. Trikkalinou A, Papazafiropoulou AK, Melidonis A. Type 2 diabetes and quality of life. World journal of diabetes. 2017 Apr 4;8 (4):120.
22. Gupta J, Kapoor D, Sood V. Quality of life and its determinants in patients with diabetes mellitus from two health institutions of sub-himalayan region of India. Indian journal of endocrinology and metabolism. 2021 May; 25 (3):211.
23. Sahoo SS, Sahoo JR, Taywade M, Patro BK. Quality of life and its determinants among ambulatory diabetic patients attending NCD prevention clinic: A cross sectional study from Eastern India. Clinical Epidemiology and Global Health. 2023 May 1;21:101275.
24. Manjunath K, Christopher P, Gopichandran V, Rakesh PS, George K, Prasad JH. Quality of life of a patient with type 2 diabetes: A cross-sectional study in Rural South India. Journal of family medicine and primary care. 2014 Oct; 3 (4):396.
25. Sohal T, Sohal P, King-Shier KM, Khan NA. Barriers and facilitators for type-2 diabetes management in South Asians: a systematic review. PloS one. 2015 Sep 18;10(9):e01362 02.
26. Ashfaque AR, Khanam N, Khan F, Waghmare RN, Joshi SK. Assessment of self-care practices among type 2 diabetes patients at a tertiary care hospital-a cross-sectional study. Journal of Evolution of Medical and Dental Sciences-JEMDS. 2020 Sep 7;9:2630-5.
27. SEKHAR TVD SA, KoDali M, Burra KC, Muppala BS, GUTTA P, BETHANBHATLA MK. Self Care Activities, Diabetic Distress and other Factors which Affected the Glycaemic Control in a Tertiary Care Teaching Hospital in South India. Journal of Clinical & Diagnostic Research. 2013 May 1;7(5).