
Original Paper

Quality of Life among Patients with Diabetes

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Abstract

Quality of Life is essential for patients with Diabetes as it directly impacts their ability to manage the disease effectively and maintain overall well-being. The current study aims to study the quality of Life among patients with Diabetes. With the help of purposive sampling, the sample consisted of 88 participants, both males and females, with Type I and Type II diabetes. The study followed an Ex-post facto research design; the WHO Quality of Life (WHOQOL) scale was used to assess Quality of Life. Results show that the QOL of male and female respondents (both Type I and Type II diabetes) was higher in the domains of social relationship and environment than in the domains of psychological and physical health.

Keywords: Diabetes, quality of Life, socio-economic status, gender, psychological and physical health

Introduction

(QOL) as an "individual's perception of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards, and concerns." It is a comprehensive idea influenced by the individual's psychological state, bodily healthiness, opinions, societal dealings, and connection with prominent structures of the situation.

It is the mark that a person is contented and able to contribute or relish life events. Hence, the (QOL) is highly individualized. One can describe it as wealth or contentment with Life; another can define it as having a good life with satisfactory physical and psychological well-being. A person with a disability can show a high (QOL), whereas a healthy individual who recently left his occupation can show a lower (QOL). Hence, the quality of Life is multidimensional: physical, environmental, psychological, and societal well-being.

Theoretical attention to (QOL) was raised after World War II; there was growing responsiveness and acknowledgment of societal disparities—this motivated research on societal indicators and similar research on individual happiness and (QOL). The patient's health opinion was impactful in a medical consultation; however, the researcher started collecting data on healthcare literature only after the 1960s.

With the help of this psychometric test on Quality-of-Life, the scientific community is beginning to understand the undesirable outcome of Diabetes on patients' lives (QOL) of Diabetes turns bitter when difficulties start to progress, or comorbidities coexist. The most complicated health-related complication that directly affects the quality of Life is coronary arterial disease, which is caused by renal failure, blindness, and a blend of micro and macrovascular complications that lead to sexual dysfunction. Besides, it is the comorbidities that decline the effect of Diabetes in a patient's Life. Researchers have also shown that Diabetes and depression can progress towards dementia.

Diabetes can affect patients in many ways emotionally, socially, financially, and physically. Studies have also stated that it is also connected with psychological complications and mental disorders, which not only affect their mental health but also their treatment process. Patients might show aggression, irritation, and rejection, making them shy or suspicious.

It has been seen that some psychosocial characteristics, such as social support, health views, ways to cope with tension, and behavior characters, may have direct outcomes on (QOL). Societal temperaments can be more extensive for a low (QOL) than the existence of parallel illnesses

consequence. Equally, diabetes patients have a positive attitude in Life and a solid trust in self-efficacy and practice active, problem-solving approaches to cope with problems have a decent (QOL).

HRQOL has received amplified attention regarding proper intervention and treatment for patients with enduring diseases. Many doctors and health professionals pay more attention to medication, which are uninformed about the economic and social influence on Diabetes and lack knowledge regarding patients' HRQOL, which majorly acts as a barrier to practical intervention approaches to stop the rise in type 2 diabetes.

Theory related to QOL

In 1962, Abraham Maslow printed his book "Towards a Psychology of Being" and conventionalised a theory on (QOL), a constant theory of quality of Life. Maslow's theory was based on progress toward contentment and being true toward human needs. He defined his method as "existentialistic psychology of self-actualization," grounded on personal growth. When people take more accountability for their lives, they seek more good qualities that help them become unrestricted, influential, happy, and healthy. Maslow's concept of self-actualization could be an imperative part of contemporary treatment. As most long-lasting ailments do not get well treated despite the finest medication, fundamental change in patients develops on the understanding that having a decent pathway for personal growth is needed. The unseen capability for enlightening Life lies in serving the patient to recognize that their craving for Life, their needs, and their wish to contribute are profound in human reality.

(QOL) conceptual model

The model provides a theoretical approach to theorizing health-related quality of Life, a multi-faceted concept that can be made to unite the biomedical and social science models. The biomedical model emphasizes uncontrolled progressions and biotic, physical, and medical conclusions, while the social science model emphasizes effective and global well-being.

Review related to QOL

Herman, W. H. (2002) stated in research directed at 4communal clinics in California, USA, that the relationship between glycemic control and QOL could be clarified by taking more extensive cohort studies with longer follow-ups. However, there was a 5% reduction in HbA1c values with a 1% rise in MCS, which shows that improvement in mental health is related to better HbA1c. Also, if more importance is given to protection and improve (QOL), my monitoring blood glucose level and biomedical outcomes diabetes management can be achieved. However, there is no association between the HbA1c and PCS as it does not affect the (QOL) of an individual suffering from Diabetes.

The study conducted at the Diabetes Research Center Yazd stated that diabetic individuals show a positive psychological sense of well-being when they emotionally adjust to Diabetes. Also, diabetic patients who have a low level of education level have more nervous problems, sick leave days, and disability pensions have poor metabolic control than those who have reasonable metabolic control. Moreover, metabolic and other medical indices are unrelated to diabetes integration and psychological well-being subscales. However, men fared better than women in terms of psychological well-being subscales.

Under the AusDiab study, participants underwent an oral tolerance test, which ultimately stated that except for mental health, there was a significantly greater risk of being in the lower quarter when the Diabetes was previously diagnosed in an individual's Life. Also, it is clear from the early stage of the disease that Diabetes is related to reduced QoL because of the inability to perform physical activities. Moreover, for some dimensions like general health, bodily operational and role limitation, etc., of the SF-36 scale, there was a reduction in QoL after adjustments from cofounders. Also, with the help of this study, we can figure out that the quality of Life in diabetic people should be evaluated with scales representing the cognitive dimensions.

The study conducted in the Danish population stated that expansion of the efforts to decrease the emotional burden of Diabetes for those who are heavily burdened should be done because influences such as less societal backing, general (QOL), and problems in handling Diabetes relate to more emotive load in type I Diabetes. Also, the main difference in emotional burden in individuals was in those who

had less diabetes enablement, more HbA1c, and less Diabetes - specific care. The fact to be noticed is that it was all seen if the individual was a female and of younger age. This research shows that the relationship is very highly proportional between the emotional burden of a diabetic patient and the individual variables of the individual. It is seen that the SES of families in emerging states has a good outcome on the HRQOL of patients with T2DM in advanced countries.

Objectives

- Study the (QOL) of patients with Diabetes mellitus and their level of Diabetes mellitus;
- Study the relationship between SES and QOL among the patients with diabetes mellitus;

Research Methodology

The study gathered primary data using a questionnaire assessing Quality of Life. It included inquiries about the socio-economic background and Quality of Life of patients diagnosed with Diabetes—both Type 1 and Type 2 aging from 20-50yr. Purposive sampling was employed to select 88 participants from a private hospital in Delhi. Data analysis utilized the Chi-Square methodology.

ResultsQualities of Life among the respondents were examined. Data were analyzed based on gender, level of diabetes mellitus, and quality of Life as the individual. Quality of Life varies based on the level of diseases.

Table 1. Gender, Level of Diabetes, and QOL of the Respondents

Gender	Diabetes Mellitus		Domain1-Physical health	Domain2-Psychological	Domain3-Social relationships	Domain4-Environment
Male	Type 1	Mean	61.57	64.74	71.26	72.96
		N	23	23	23	23
		Std. Dev	11.61	12.22	11.64	14.18
	Type 2	Mean	62.30	64.85	73.15	73.96
		N	27	27	27	27
		Std. Dev	11.64	11.31	22.63	13.02
	Total	Mean	61.96	64.80	72.28	73.50
		N	50	50	50	50
		Std. Dev	11.51	11.62	18.26	13.44
Female	Type 1	Mean	56.86	61.79	65.21	70.21
		N	14	14	14	14
		Std. Dev	14.18	11.44	18.86	14.82
	Type 2	Mean	57.71	61.00	73.71	73.04
		N	24	24	24	24
		Std. Dev	10.98	14.06	17.70	17.60
	Total	Mean	57.39	61.29	70.58	72.00

		N	38	38	38	38
		Std. Dev	12.08	13.00	18.36	16.48
Total	Type 1	Mean	59.78	63.62	68.97	71.92
		N	37	37	37	37
		Std. Dev	12.66	11.86	14.84	14.28
	Type 2	Mean	60.14	63.04	73.41	73.53
		N	51	51	51	51
		Std. Dev	11.46	12.70	20.26	15.19
	Total	Mean	59.99	63.28	71.55	72.85
		N	88	88	88	88
		Std. Dev	61.57	64.74	71.26	72.96

The result shows that male respondents who have type I diabetes mellitus expressed that their quality of Life in the domain of physical health (M=61.56; SD=11.60) and psychological aspects (M=64.73; SD=12.22) are less than social relationship (M=71.26; SD=11.64) and environment (M=72.95; SD=14.18). Similarly, male respondents with type II diabetes mellitus showed their quality of Life as the mean of physical health was 62.29 (SD=11.63), and the mean of psychological aspects was 64.85 (SD=11.31).

The other two domains (social relationship: mean = 73.14; SD=22.62 and environment: mean=73.96; SD=13.02) are higher for male respondents with type II diabetes.

While analyzing the female with Type I Diabetes, both social relationship (M=65.21; SD=18.85) and environment (M=76.21; SD=14.81) domains are higher than physical health (M=56.85; SD=14.17) and psychological (M=61.78; SD=11.43).

Table 2. T-Test on Quality of Life and Level of Diabetes Mellitus of the Respondents

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Domain1-Physical Health	Equal variances assumed	0.05	0.824	-0.137	86	0.892	-0.3535	2.58621
	Equal variances are not assumed.			-0.135	72.949	0.893	-0.3535	2.62796
Domain2-Psychological	Equal variances	0.308	0.58	0.218	86	0.828	0.58241	2.66798

	assumed							
	Equal variances are not assumed.			0.221	80.636	0.826	0.58241	2.63878
Domain3-Social Relationship	Equal variances assumed	1.16	0.285	-1.13	86	0.262	-4.4388	3.9276
	Equal variances are not assumed.			-1.186	85.986	0.239	-4.4388	3.74125
Domain4-Environment	Equal variances assumed	0.061	0.805	-0.503	86	0.616	-1.6105	3.20032
	Equal variances are not assumed.			-0.508	80.37	0.613	-1.6105	3.1687

Similarly, females with type II diabetes expressed. Social relationship (M=73.70; SD=17.70) and environment (M=73.04; SD=17.59) are higher than physical health (M=57.70; SD=10.98) and psychological (M=61.00; SD=14.06).

A T-test of independence was done to observe the relationship between Diabetes mellitus and quality of Life. Table 2 shows the result of the T-test. The result shows there is no significant difference on level of Diabetes and four domains of quality of Life (physical health: t (86) =-.137, p=.89>0.05; psychological: t (86) =.218, p=.82>0.05; social relationship: t (86) =-1.130, p=.26>0.05; environment: t (86) =-.503, p=.616>0.05).

Socio-Economic Status and Quality of Life: Socioeconomic status and quality of Life with Diabetes mellitus were examined. These results are shown in Table 3.

Table 3. Comparison between SES and QOL with level of Diabetes mellitus

Diabetes Mellitus			Domain1-Physical health	Domain2-Psychological	Domain3-Social relationships	Domain4-Environment
Type 1	Upper (I)	Mean	66.83	68.00	68.83	82.50
		N	6.00	6.00	6.00	6.00
		Std. Dev	6.52	4.52	20.69	12.69
	Upper Middle (II)	Mean	59.14	61.14	68.36	70.29
		N	14.00	14.00	14.00	14.00
		Std. Dev	13.18	13.40	14.57	16.09
Lower Middle	Mean	63.67	74.00	77.00	76.33	
	N	6.00	6.00	6.00	6.00	

	(III)	Std. Dev	7.42	7.97	14.63	10.76
	Upper Lower (IV)	Mean N	19.00 1.00	56.00 1.00	44.00 1.00	56.00 1.00
		Std. Dev				
	Lower (V)	Mean N	58.20 10.00	59.00 10.00	67.60 10.00	66.80 10.00
		Std. Dev	10.22	11.49	10.10	11.79
	Total	Mean N	59.78 37.00	63.62 37.00	68.97 37.00	71.92 37.00
		Std. Dev	12.66	11.86	14.84	14.28
Type 2	Upper (I)	Mean N	61.42 24.00	65.42 24.00	75.04 24.00	77.17 24.00
		Std. Dev	10.23	12.62	22.05	10.67
	Upper Middle (II)	Mean N	57.36 14.00	60.86 14.00	70.50 14.00	70.21 14.00
		Std. Dev	12.10	14.06	17.90	18.36
	Lower Middle (III)	Mean N	62.63 8.00	64.75 8.00	75.75 8.00	71.25 8.00
		Std. Dev	15.83	11.59	25.71	21.40
	Upper Lower (IV)	Mean N	63.00 2.00	62.50 2.00	72.00 2.00	69.00 2.00
		Std. Dev	0.00	9.19	4.24	0.00
	Lower (V)	Mean N	54.33 3.00	50.00 3.00	68.67 3.00	69.00 3.00
		Std. Dev	9.61	6.00	10.97	19.00
	Total	Mean N	60.14 51	63.04 51	73.41 51	73.53 51
		Std. Dev	11.46	12.70	20.26	15.19
Total	Upper (I)	Mean N	62.50 30	65.93 30	73.80 30	78.23 30

	Std. Dev	9.76	11.44	21.58	11.08
Upper Middle (II)	Mean	58.25	61.00	69.43	70.25
	N	28	28	28	28
	Std. Dev	12.45	13.48	16.05	16.94
Lower Middle (III)	Mean	63.07	68.71	76.29	73.43
	N	14	14	14	14
	Std. Dev	12.51	10.92	20.94	17.26
Upper Lower (IV)	Mean	48.33	60.33	62.67	64.67
	N	3	3	3	3
	Std. Dev	25.40	7.51	16.44	7.51
Lower (V)	Mean	57.31	56.92	67.85	67.31
	N	13	13	13	13
	Std. Dev	9.83	10.98	9.84	12.86
Total	Mean	59.99	63.28	71.55	72.85
	N	88	88	88	88
	Std. Dev	11.91	12.29	18.22	14.76

Social, economic status, and Quality of Life comparative analysis on SES and quality of Life examined type I respondents belonging to the upper class showed a higher mean (82.50; SD=12.69) than type 2 respondents belonging to the upper class (77.16; SD=10.66) on environment domain of quality of Life.

Type I respondents belong to the upper middle class, shown equally in the environment domain (M=70.28 and M=70.21).

The quality of Life of lower middle-class respondents of both type I and type II were examined.

It showed a higher mean in psychological domain (type 1, M=74.00; SD=7.97; type 2, M=64.75; SD=11.58) and social relationship domain (type 1 M=77.00; SD=14.62 type2 M=75.75; SD=25.70) than other two domains.

A chi-square test examined the relationship between socioeconomic status and quality of Life among patients with diabetes mellitus. The results are shown in Table 4.

Table 4. Socio-Economic Status and Quality of Life among Diabetes Mellitus

	Statistic	Value	Df	Asymp. (2-tailed)	Sig.
Domain 1- Physical health	Pearson Chi-Square	51.51	40	.105	
	Likelihood Ratio	30.95	40	.847	

	Linear-by-Linear Association	1.84	1	.15
	N of Valid Cases	88		
Domain2- Psychological	Pearson Chi-Square	28.87	32	.626
	Likelihood Ratio	32.91	32	.422
	Linear-by-Linear Association	2.94	1	.087
	N of Valid Cases	88		
Domain3- Social relationships	Pearson Chi-Square	53.23	40	.079
	Likelihood Ratio	57.09	40	.039
	Linear-by-Linear Association	.73	1	.393
	N of Valid Cases	88		
Domain4- Environment	Pearson Chi-Square	42.15	40	.378
	Likelihood Ratio	46.45	40	.224
	Linear-by-Linear Association	4.93	1	.026
	N of Valid Cases	88		

A chi-square test of independence was done to study the relationship between SES and quality of Life among Diabetes mellitus. The relation between these variables was not significant. (Physical health- $X^2(40, N = 88) = 51.51, p=.105$; Psychological- $X^2(32, N = 88) = 28.87, p=.626$; Social relationships- $X^2(40, N = 88) = 53.23, p=.079$; Environment- $X^2(40, N = 88) = 42.15, p=.378$).

Discussion

WHOQOL-Measuring Quality of Life questionnaire was administered to study the quality of Life of patients with Diabetes mellitus and their Diabetes mellitus level. The result shows that male and female respondents (type I and type II diabetes) expressed that their quality of Life in the social relationship and environment domain is higher than in physical health and psychological domains. Vishal et al. (2017) stated that male patients were found to have a better quality of Life than female patients. Although the previous study showed a difference, the current research doesn't show a significant difference between the quality of Life of males and females with Diabetes mellitus.

T-test was conducted to test this hypothesis, and the result showed that there was no significant difference in the level of Diabetes and four domains of quality of Life (physical health: $P=.89>0.05$; psychological: $P=.82>0.05$; social relationship: $P=.26>0.05$; environment: $P=.616>0.05$). Therefore, the null hypothesis was accepted.

Jahanlou et al. (2011) found that psychological and Physical domain scores are other two domains supporting the current study. Lima et al. (2018) found that elderly patients with Diabetes have a higher mean value in social relationships than in the other three quality domains of Life. Similarly, other studies found the highest mean scores were in the social relationship domain (Campos de Sousa et al., 2016; Oliveira, Gomes, & Paiva, 2011; Tavares & Dias, 2012). According to previous studies, the current research results show that the patient's social relationships and environmental domain are high in their

quality of Life because people in Indian society are well-bonded with social relationships, which include family, friends, and relatives who provide them with good support.(Chow et al., 2006;Chuang, Tsai, Huang & Tai, 2002; Varadarajan, Fennessy, & McLean, 2009). Health could be improved by paying more attention to aspects like indulging more in daily activities like walking, exercise, etc., and regular visits to hospitals and diabetic centers to get counseling/education for patients and their family members to improve their overall quality of Life.

Conclusion

Patients with Diabetes pay more attention to physical health domains (physical exercises, yoga, workload, sleep, and rest) and physiological domains (self-esteem, Thinking, learning, memory, concentration, and positive and negative feelings) to maintain QOL.As Diabetes is a metabolic disease, the patients more often feel depressed, and the current study also proves this. To conquer this disorder, diabetes patients should have self-management.

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