Dimensions of Quality of Life among Patients with Diabetes: A Descriptive Study of Attendees at Diabetes and Endocrinology Centers in Makkah

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Abstract:

The present study aimed to examine the dimensions of quality of life among patients with diabetes attending diabetes and endocrinology centers in Makkah. The study adopted a descriptive research design and utilized a structured questionnaire to collect data from a stratified random sample of 381 adult patients who had developed disease-related complications. The findings indicated that the overall level of quality of life was rated as moderate. Among the assessed dimensions, the environmental dimension ranked first, followed by the psychological dimension, then the social dimension, while the physical dimension ranked last. These results highlight the necessity of adopting a comprehensive perspective in addressing the needs of patients with diabetes, extending beyond medical treatment to encompass psychological, social, and environmental factors influencing patients' well-being. The study recommends strengthening the integration of these dimensions in healthcare practices to enhance clinical outcomes, particularly maintaining blood glucose levels within the normal range, and to promote sustained well-being and adaptive coping among patients living with diabetes, and integrating psychological counseling services into routine diabetes care to address long-term emotional fatigue and adaptive stress.

Keywords: Quality of Life, Diabetes Patients, Psychological Dimension, Social Dimension, Chronic Illness Adaptation, Community Health.

1. Introduction:

Despite the fact that the Basic Law of Governance in the Kingdom of Saudi Arabia guarantees free medical treatment and healthcare services to ensure comprehensive and integrated care for all members of society, the Health Sector Transformation Document has identified several critical challenges facing the national healthcare system. Among these challenges is the high rate of premature mortality associated with chronic diseases, which reaches approximately 90,000 deaths annually, alongside a life expectancy that is 5.2 years lower than the global average (Saudi Vision 2030, 2020, p. 32).

Diabetes mellitus, as one of the most prevalent chronic diseases, represents a major public health concern in the Kingdom. Saudi Arabia is considered among the countries with the highest prevalence rates of diabetes. According to Al Dawish et al., citing the World Health Organization, Saudi Arabia ranks second in the Middle East and seventh worldwide in terms of diabetes prevalence. It is estimated that nearly seven million individuals in the Kingdom are living with diabetes, while approximately three million are in the pre-diabetes stage. More concerning is the rapidly increasing pattern of diabetes prevalence observed in recent decades, with rates rising nearly tenfold over the past three decades (Al Dawish et al., 2016, p. 1).

The seriousness of diabetes lies not only in its classification as a potential epidemic, but also in its association with short- and long-term complications when optimal and sustained health outcomes are not achieved. The Saudi Ministry of Health, citing the World Health Organization, reports that diabetes has become one of the leading causes of death globally. Approximately 1.5 million deaths worldwide were directly attributed to diabetes in 2019, and 6.7 million deaths were reported in 2021. Furthermore, diabetes is a major cause of blindness, kidney failure, heart attacks, strokes, and lower-limb amputations (Saudi Ministry of Health, 2024).

This situation reflects, in part, the traditional healthcare model that has historically emphasized treatment rather than prevention. Such an approach is increasingly incompatible with the chronic nature of diabetes, which requires long-term adaptation rather than short-term cure. Al-Hasan (2010, p. 277) defines chronic illness as a persistent condition that necessitates continuous adaptation and coexistence rather than a definitive recovery. In response, the Kingdom has initiated a transformation toward a modern healthcare system that places prevention and treatment on equal footing. Additionally, the Quality-of-Life Program was launched to create supportive environments that promote healthy practices, recognizing lifestyle behaviors as a fundamental therapeutic component in the ongoing management of diabetes.

The importance of quality of life in diabetes care has been empirically supported. John et al. (2019, p. 81) concluded that quality of life constitutes a significant parameter in determining diabetes treatment approaches. In recent years, Health-Related Quality of Life (HRQoL) has increasingly been regarded as a critical outcome in medical treatment and a central issue in diabetes management. Poor quality of life has been associated with reduced self-care behaviors, suboptimal glycemic control, increased risk of complications, and worsening disease outcomes in both the short and long term (Al Dawish et al., 2016, p. 6).

However, despite its growing importance, the concept of health-related quality of life remains complex and multidimensional. Cardona (2010, pp. 1–6) notes that the concept varies depending on age group, measurement instruments, cultural and social contexts, temporal and spatial factors, and individual values. It encompasses a wide spectrum of indicators ranging from lifestyle and environmental conditions to healthcare access and social surroundings. Given this conceptual variability, the present study seeks to examine quality of life among patients with diabetes in a more structured and context-specific manner.

To operationalize the concept, the study adopts the World Health Organization's WHOQOL-BREF framework, which identifies four principal domains: physical, psychological, social, and environmental (World Health Organization, 2012, p. 44). These four domains have been widely utilized in studies conducted in Saudi Arabia and are considered validated measures for assessing quality of life in diabetic populations (Al Dawish et al., 2016, p. 6). By focusing on these dimensions, the study aims to provide a comprehensive understanding of the key aspects shaping the lived experience of individuals with diabetes.

1.1. Research Problem:

Although there is broad consensus that strict glycemic control is essential to reducing diabetes-related complications, and despite global agreement on the relationship between blood glucose control and complication prevention (Rossi et al., 2010, p. 109), national data indicate persistent challenges in achieving optimal control. The Saudi Ministry of Health reports that approximately 72% of adult diabetic patients exhibit uncontrolled glycated hemoglobin levels (Saudi Ministry of Health, 1441–1445H, p. 48).

This gap between clinical recommendations and actual disease control may be attributed to the lifelong nature of diabetes management, which often generates fatigue, emotional burden, and treatment burnout. Such pressures may negatively affect patients' quality of life and consequently reduce adherence to recommended health practices. Rocha et al. (2020, p. 598) concluded that poor

adherence to effective self-care behaviors was associated with increased diabetes-related complications. Similarly, John et al. (2019, p. 81) reaffirmed that quality of life plays a significant role in shaping diabetes treatment outcomes.

Accordingly, understanding the current state of quality of life among patients with diabetes is not merely descriptive but strategically significant. Quality of life represents a potentially powerful determinant of sustained positive health outcomes. When its dimensions adequately reflect the essential aspects of patients' lived experiences, they may contribute to improved glycemic control, enhanced vitality, prolonged functional health, and delayed onset or progression of complications despite the chronic nature of the disease.

1.2. Research Questions:

The present study seeks to answer the following research questions:

1. What is the overall status of the dimensions of quality of life among patients with diabetes attending diabetes and endocrinology centers in Makkah?
2. What is the level of the physical dimension as one of the domains of quality of life among patients with diabetes?
3. What is the level of the psychological dimension as one of the domains of quality of life among patients with diabetes?
4. What is the level of the social dimension as one of the domains of quality of life among patients with diabetes?
5. What is the level of the environmental dimension as one of the domains of quality of life among patients with diabetes?

1.3. Research Objectives:

The present study aims to achieve the following objectives:

1. To determine the overall level of the dimensions of quality of life among patients with diabetes attending diabetes and endocrinology centers in Makkah.
2. To assess the level of the physical dimension as one of the domains of quality of life among patients with diabetes.
3. To assess the level of the psychological dimension as one of the domains of quality of life among patients with diabetes.
4. To assess the level of the social dimension as one of the domains of quality of life among patients with diabetes.

5. To assess the level of the environmental dimension as one of the domains of quality of life among patients with diabetes

1.4. Significance of the Study:

1.4.1. Theoretical Significance

- The theoretical significance of this study lies in examining quality of life among patients with diabetes from a sociological perspective, thereby contributing to the body of literature on chronic illness beyond a purely biomedical framework.
- The study employs quality of life as an analytical construct to explore how physical, psychological, social, and environmental dimensions interact in shaping the lived experience of individuals with diabetes.
- By adopting a multidimensional perspective, the study supports contemporary approaches that advocate for comprehensive models in understanding and managing chronic diseases.

1.4.2. Practical Significance

- The findings provide healthcare professionals, social workers, and policymakers with a clearer understanding of the current status of quality of life among patients with diabetes, enabling the development of integrated interventions that extend beyond medical treatment.
- The study highlights that weakness in any single dimension of quality of life may negatively affect overall well-being, whereas integration across dimensions promotes improved and sustained health outcomes and supports positive adaptation to chronic illness.
- The results align with national development goals aimed at fostering a vibrant society characterized by health and vitality, particularly in the context of the growing prevalence of chronic diseases.

1.5. Study Delimitations:

The present study was delimited as follows:

1. Topical Delimitations

The study was confined to examining the dimensions of quality of life among patients with diabetes using the World Health Organization Quality of Life Brief Scale (WHOQOL-BREF), specifically the physical, psychological, social, and environmental domains. Other detailed clinical variables were beyond the scope of the study.

2. Spatial Delimitations

The study was conducted among patients attending the diabetes and endocrinology centers affiliated with Hira General Hospital and Al Noor Specialist Hospital in Makkah, Saudi Arabia.

3. Human Delimitations

The study was limited to adult patients (18 years and above) diagnosed with type 2 diabetes mellitus who had developed disease-related complications and were registered at the selected diabetes and endocrinology centers. Participants were selected using stratified random sampling.

4. Temporal Delimitations

The study was carried out during the period of field data collection in (2025/1447).

1.6. Conceptual and Operational Definitions

1. Quality of Life (QoL)

The World Health Organization defines quality of life as individuals' perception of their position in life within the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns regarding their physical and psychological health, level of independence, and relationships with their environment (World Health Organization, 2012, p. 11). Within the framework of Saudi Vision programs, quality of life is also conceptualized as a measure of individuals' satisfaction with the most important aspects of their lives (Saudi Vision, 2018, p. 8). Al Qawasmi (2020, p. 68) notes that quality of life may refer to personal well-being and happiness, while other perspectives emphasize living conditions and environmental contexts, reflecting the multidimensional and theoretically diverse nature of the concept.

Operationally, in the present study, quality of life among patients with diabetes refers to the subjective and objective dimensions perceived by patients as influencing their sense of comfort, satisfaction, and positive adaptation to living with the disease. It is measured using the World Health Organization Quality of Life Brief Scale (WHOQOL-BREF), which encompasses four domains: physical, psychological, social, and environmental (World Health Organization, 2012, p. 44).

These domains include:

- **Physical domain:** pain, energy, sleep, mobility, daily activities, work capacity, and medication dependence.
- **Psychological domain:** positive feelings, thinking and concentration, self-esteem, body image, negative feelings, and personal beliefs.

- **Social domain:** personal relationships and social support.
- **Environmental domain:** safety, housing conditions, neighborhood environment, financial resources, transportation, and access to services.

2. Patients with Type 2 Diabetes Mellitus

The International Diabetes Federation defines diabetes mellitus as a chronic condition that occurs when the pancreas does not produce sufficient insulin or when the body cannot effectively use the insulin it produces, resulting in elevated blood glucose levels (International Diabetes Federation, 2023). Chronic hyperglycemia may lead to severe complications affecting multiple organs and tissues.

Type 2 diabetes is the most common form of the disease, characterized by insufficient insulin production or ineffective insulin utilization, leading to excess glucose remaining in the bloodstream (National Institute of Diabetes and Digestive and Kidney Diseases, 2017). According to Al-Ghazali (2012, p. 20), management of type 2 diabetes includes dietary regulation, physical activity, weight control, and, in some cases, oral medications or insulin therapy.

Operationally, patients with type 2 diabetes in this study refer to adult individuals who were clinically diagnosed with type 2 diabetes by a specialized physician and were referred to diabetes and endocrinology centers affiliated with governmental hospitals in Makkah, and who constituted the study sample.

2. Theoretical Framework:

2.1. Theoretical Approaches to Quality of Life:

The concept of quality of life (QoL) remains complex and multidimensional, making it difficult to define or measure with precision. Variations across disciplines, methodological approaches, and conceptual orientations have contributed to its theoretical ambiguity. Some scholars conceptualize QoL in terms of personal well-being, satisfaction, and happiness, whereas others emphasize objective living conditions and environmental contexts. Consequently, diverse theoretical perspectives have emerged regarding what constitutes a “good life” or a “good environment” (Al Qawasmi, 2020, p. 68).

2.1.1. The Social Approach:

The social perspective represents one of the earliest orientations in QoL research, focusing primarily on objective life indicators. Early studies emphasized measurable variables such as age, gender, income, housing, education, health status, safety, family life, social relationships, employment, and

living standards (Kerce, 1992, pp. 23–24; Al-Amin, 2020). From this standpoint, quality of life reflects the level of material and social services available within a society and the degree to which the environment satisfies individuals' collective needs (Maameria, 2020).

Sociologists have examined QoL at two interconnected levels:

- The individual level, which includes food, housing, education, and access to services.
- The societal level, which encompasses social and physical environments within which individuals meet their needs (Surmach & Piecewicz-Szczęsna, 2014, p. 148).

Within this framework, quality of life is largely determined by external, structural conditions and institutional support systems. Thus, it prioritizes objective social indicators as primary determinants of well-being.

2.1.2. The Psychological Approach:

In contrast, the psychological perspective shifted attention toward subjective well-being. Beginning in the 1970s, researchers increasingly incorporated subjective indicators such as life satisfaction, perceived happiness, self-esteem, and personal fulfillment (Al-Anzi, 2023).

According to definitions cited from the American Psychological Association, quality of life refers to the degree to which individuals achieve life satisfaction and emotional well-being through meaningful relationships, autonomy, personal development, and participation in society (Khalaf et al., 2022). Psychological constructs such as values, self-perception, aspirations, expectations, needs, and self-esteem play a critical role in shaping how individuals evaluate their life circumstances (Al-Amin, 2020).

From this viewpoint, quality of life is not solely determined by objective conditions like income or housing but by individuals' subjective appraisal of those conditions. Therefore, the psychological approach emphasizes internal perception as the core determinant of QoL.

2.1.3. The Integrative Approach:

The integrative perspective emerged in response to the limitations of separating objective and subjective indicators. It views the individual as a holistic entity in which biological, psychological, and social dimensions interact dynamically.

Cardona (2010, pp. 1–6) conceptualizes QoL as a relative, multidimensional construct influenced by age, cultural context, temporal and spatial factors, and measurement tools. Similarly, Conner (2016, p. 11) emphasizes three principles:

1. QoL is multidimensional.
2. It applies to all individuals, including those with chronic conditions.
3. It is achieved through balancing objective living conditions and subjective satisfaction.

This approach highlights equilibrium between structural opportunities and personal perceptions. Measuring one dimension in isolation fails to provide an accurate representation of an individual's quality of life. Hence, integration and balance are fundamental determinants within this framework.

2.2. Health-Related Quality of Life (HRQoL) as an Integrative Model:

Health-Related Quality of Life represents one of the most prominent applied models embodying the integrative approach. It refers to improvements in individuals' health status resulting from preventive and therapeutic interventions while considering both subjective experiences and objective health indicators.

The World Health Organization defines QoL as individuals' perceptions of their position in life within their cultural and value systems, incorporating physical health, psychological state, level of independence, social relationships, and environmental context (World Health Organization, 2012, p. 11).

HRQoL specifically focuses on patients' evaluations of how illness and treatment affect various life domains, including physical functioning, emotional well-being, daily activities, vitality, and social participation (Khalaf et al., 2022). In chronic illness contexts, treatment effectiveness is no longer assessed solely by survival rates but by whether it enables patients to live meaningful and satisfactory lives.

2.3. Application to Diabetes Management:

Diabetes mellitus, particularly type 2 diabetes, represents a chronic condition requiring lifelong management. From an HRQoL perspective, sustained positive health outcomes depend not only on clinical indicators but also on how patients perceive and experience their condition across physical, psychological, social, and environmental domains.

When these domains operate in an integrated and balanced manner—through adequate medical care, health education, lifestyle modification, psychological support, and social support—they contribute to improved glycemic control and delayed complications.

In this regard, comprehensive treatment models emphasize multiple integrated pillars, including health education, pharmacological treatment, lifestyle modification, psychological and social support, and spiritual support (Syrian Ministry of Health, 2016, p. 5).

These components illustrate the practical embodiment of the integrative quality-of-life model in chronic disease management. Accordingly, the present study adopts the Health-Related Quality of Life framework as its guiding theoretical model, as it provides a comprehensive explanation for how the interaction between subjective perceptions and objective conditions influences sustained health outcomes among patients with diabetes.

3. Previous Studies

3.1. Arab Studies

Aisha and Nesrine (2024) examined the relationship between self-management and quality of life among patients with type 2 diabetes using a descriptive correlational design. The study applied self-management and WHOQOL instruments to a purposive sample of 60 patients. The findings revealed a statistically significant correlation between self-management and quality of life, with both variables reported at moderate levels.

Grio (2022) investigated the role of medical, psychological, and social support in improving quality of life among patients with diabetes through a clinical case-study approach. The results indicated that multidisciplinary support significantly enhances patients' quality of life and facilitates disease acceptance and adaptation.

Khalaf et al. (2022) explored health-related quality of life indicators and their association with demographic variables among female teachers diagnosed with type 2 diabetes. Using a descriptive design and a sample of 123 participants, the study found statistically significant differences in HRQoL indicators according to disease type, duration, treatment type, and income level.

Gounas (2022), employing a case-study methodology, examined health behavior and quality of life among diabetic patients and found that higher levels of health behavior were associated with better quality of life.

Turki and Fadhli (2021) assessed quality of life among diabetic patients and its relationship with diabetes type and selected sociodemographic variables. The findings indicated generally high levels of quality of life, with no significant differences across gender, age, or diabetes type.

3.2. International Studeis

Kien et al. (2021) conducted a cross-sectional study in Vietnam involving 519 patients with type 2 diabetes to assess health-related quality of life and its associated factors. The study found lower physical and mental health scores among females and older patients, while higher educational attainment and physical activity were positively associated with improved quality of life.

3.3. Commentary on Previous Studies:

A review of the previous literature reveals growing scholarly interest in examining quality of life among patients with diabetes from various perspectives, including correlational approaches linking self-management and health behaviors to quality of life, clinical approaches emphasizing multidisciplinary care, and demographic analyses exploring associations with socioeconomic and medical variables. Moreover, several studies have relied on the World Health Organization's instruments, reflecting the prominence of the health-related quality of life framework in this field.

However, a closer analytical examination indicates that most studies have predominantly adopted psychological or clinical orientations, often focusing on isolated variables or relatively limited samples. Comprehensive sociological analyses that integrate structural, environmental, and subjective dimensions remain comparatively scarce. Furthermore, within the Saudi context, empirical investigations addressing quality of life among patients with type 2 diabetes through a multidimensional and culturally grounded framework remain limited.

Given that quality of life is inherently a relative and context-dependent construct shaped by cultural values, social structures, and environmental conditions, there is a pressing need for research that adopts an integrative perspective grounded in health-related quality of life theory. The present study seeks to address this gap by providing a comprehensive sociological assessment of the physical, psychological, social, and environmental dimensions of quality of life among patients with type 2 diabetes in Makkah. In doing so, it extends beyond clinical outcome measures toward a broader understanding of sustained health and adaptive living in the context of chronic illness.

4. Methodology of the Study:

4.1. Research Design:

This study adopts a descriptive research design aimed at examining the status of quality of life dimensions among patients with type 2 diabetes. The social survey method using a sample was employed as it is appropriate for quantitatively investigating social phenomena within large populations.

4.2. Population and Sample:

The study population consisted of all patients diagnosed with type 2 diabetes and registered at the diabetes and endocrinology centers affiliated with Hira General Hospital and Al Noor Specialist Hospital in Makkah. According to official 2024 statistics, 22,168 patients were registered at Hira General Hospital and 24,844 at Al Noor Specialist Hospital, totaling 47,012 patients.

A stratified random sample of 381 patients was selected, including 180 participants from Hira General Hospital and 201 from Al Noor Specialist Hospital.

4.3. Data Collection Instrument

Data were collected using a structured questionnaire consisting of two sections:

- Demographic information
- A 32-item scale measuring four dimensions (8 items per dimension): physical, psychological, social, and environmental.

Responses were measured using a three-point Likert scale (Always Applies – Applies to Some Extent – Does Not Apply).

4.4. Validity and Reliability

To ensure the validity and reliability of the research instrument (questionnaire), several statistical procedures were conducted as follows:

4.4.1 Face Validity

Face validity was established by presenting the initial version of the questionnaire to a panel of experts specialized in sociology and health-related fields. The experts were asked to evaluate the clarity of the items, their linguistic formulation, their relevance to the domains they belong to, and their suitability for achieving the study objectives. Based on their feedback, necessary modifications were made, including rewording, deletion, and addition of certain items. Accordingly, the final version of the instrument was considered to have achieved acceptable face validity.

4.4.2 Internal Consistency Validity

After establishing face validity, the questionnaire was administered to a pilot sample of 30 patients (after excluding five incomplete responses). Pearson correlation coefficients were calculated between each item and the total score of the domain to which it belongs. The results are presented in Table 1.

Table 1. Pearson Correlation Coefficients Between Each Item and Its Corresponding Domain Score

Item	Physical Domain	Item	Psychological Domain	Item	Social Domain	Item	Environmental Domain
1	0.771*	1	0.463*	1	0.771*	1	0.463*
2	0.795*	2	0.784*	2	0.795*	2	0.784*
3	0.762*	3	0.516*	3	0.762*	3	0.516*

4	0.613*	4	0.417*	4	0.613*	4	0.417*
5	0.736*	5	0.371*	5	0.736*	5	0.371*
6	0.588*	6	0.616*	6	0.588*	6	0.616*
7	0.780*	7	0.706*	7	0.780*	7	0.706*
8	0.594*	8	0.632*	8	0.594*	8	0.632*

* Statistically significant at $p < 0.05$

All correlation coefficients were statistically significant at the 0.05 level, indicating a high degree of internal consistency validity. This confirms that all items and domains of the questionnaire adequately measure the intended constructs.

4.4.3. Construct Validity

Construct validity was examined by calculating Pearson correlation coefficients between each domain score and the total questionnaire score. The results are presented in Table 2.

Table 2. Pearson Correlation Coefficients Between Each Domain and the Total Questionnaire Score

Domain	Correlation with Total Score
Physical Domain	0.835*
Psychological Domain	0.630*
Social Domain	0.723*
Environmental Domain	0.596*

* Statistically significant at $p < 0.05$

As shown in Table 2, correlation coefficients ranged from 0.596 to 0.835 and were statistically significant at the 0.05 level, indicating satisfactory construct validity of the instrument.

4.4.4 Reliability of the Instrument

To assess the reliability of the questionnaire, Cronbach's alpha coefficients were calculated based on responses from the pilot sample. The results are shown in Table 3.

Table 3. Cronbach's Alpha Coefficients for Each Domain and the Overall Scale

Domain	Number of Items	Cronbach's Alpha
Physical Domain	8	0.822
Psychological Domain	8	0.821

Social Domain	8	0.809
Environmental Domain	8	0.895
Overall Scale	32	0.880

As shown in Table 3, Cronbach's alpha values ranged between 0.809 and 0.895 across the four domains, while the overall reliability coefficient reached 0.880. These results indicate a high level of internal consistency and reliability of the instrument.

5. Results and Discussion:

5.1. Sample Characteristics

To describe the demographic and background characteristics of the study sample, frequencies and percentages were calculated.

5.1.1 Distribution by Hospital Affiliation

The distribution of participants according to hospital affiliation is presented in Table 4.

Table 4. Distribution of Participants by Hospital Affiliation

Hospital	Frequency	Percentage
Al Noor Specialist Hospital	201	52.8%
Hira General Hospital	180	47.2%
Total	381	100%

As shown in Table 4, 52.8% of the participants were recruited from Al Noor Specialist Hospital, while 47.2% were from Hira General Hospital. This distribution reflects the proportional size of the registered diabetic population in both centers.

5.1.2 Distribution by Gender

The distribution of participants according to gender is shown in Table 5.

Table 5. Distribution of Participants by Gender

Gender	Frequency	Percentage
Male	212	55.6%
Female	169	44.4%
Total	381	100%

Table 5 indicates that males constituted 55.6% of the sample, whereas females represented 44.4%.

5.1.3. Distribution by Age Group:

Table 6 presents the distribution of participants according to age group.

Table 6. Distribution of Participants by Age Group

Age Group	Frequency	Percentage
Less than 30 years	9	2.4%
30–39 years	20	5.2%
40–49 years	75	19.7%
50–59 years	119	31.2%
60 years and above	158	41.5%
Total	381	100%

As shown in Table 6, the majority of participants (41.5%) were aged 60 years and above, followed by those aged 50–59 years (31.2%).

5.1.4 Distribution by Monthly Expenditure on Diabetes Care

The distribution of participants according to monthly expenditure on diabetes care is presented in Table 7.

Table 7. Distribution of Participants by Monthly Expenditure on Diabetes Care

Monthly Expenditure (SAR)	Frequency	Percentage
Less than 1000	128	33.6%
1000–1999	198	52.0%
2000–2999	44	11.5%
3000 and above	11	2.9%
Total	381	100%

Table 7 shows that more than half of the participants (52.0%) reported spending between 1000 and 1999 SAR monthly on diabetes care.

5.1.5. Distribution by Duration of Complications After Diagnosis

Table 8 presents the distribution of participants according to the duration between diagnosis and the onset of complications.

Table 8. Distribution of Participants by Duration of Complications

Duration (Years)	Frequency	Percentage
Less than 10	79	20.7%

10–19	222	58.3%
20–29	54	14.2%
30 and above	26	6.8%
Total	381	100%

As shown in Table 8, the majority of participants (58.3%) reported that complications developed between 10 and 19 years after diagnosis.

5.1.6 Distribution by Motivating Symptoms for Seeking Treatment

The motivating factors for seeking treatment are presented in Table 9.

Table 9. Motivating Symptoms for Seeking Treatment

Motivating Symptom	Frequency	Percentage
Inability to perform daily activities easily	293	26.6%
Medical advice to regulate blood glucose	183	16.6%
Diagnosis discovery	148	13.4%
Recurrent disease episodes	134	12.2%
Physical appearance changes	122	11.1%
Supportive environment	2	0.2%
Other	219	19.9%
Total Responses	1101	100%

As shown in Table 9, the inability to perform daily activities was the most frequently reported motivating factor for seeking treatment (26.6%).

5.2. Results Related to the First Research Question

The first research question sought to examine the status of quality of life dimensions among patients with type 2 diabetes in diabetes and endocrinology centers in Makkah. To answer this question, means and standard deviations were calculated for the four dimensions of quality of life (physical, psychological, social, and environmental). The results are presented in Table 10.

Table 10. Means and Standard Deviations of Quality of Life Dimensions Among Patients with Type 2 Diabetes

No.	Dimension	Mean	Percentage	Std. Deviation	Response Level	Rank
1	Physical	1.70	35%	0.459	Applies to Some Extent	4
2	Psychological	2.20	60%	0.257	Applies to Some Extent	2
3	Social	2.06	53%	0.229	Applies to Some Extent	3

4	Environmental	2.45	72%	0.444	Always Applies	1
—	Overall Quality of Life	2.10	55%	0.251	Applies to Some Extent	—

As shown in Table 10, the overall mean score for quality of life was 2.10, which falls within the second category of the three-point Likert scale (1.67–2.33), indicating that quality of life among patients with type 2 diabetes generally "applies to some extent."

Among the four dimensions, the environmental dimension ranked first (M = 2.45), with a response level of "always applies." The psychological dimension ranked second (M = 2.20), followed by the social dimension (M = 2.06), while the physical dimension ranked last (M = 1.70).

- Discussion of the First Research Question

The prominence of the environmental dimension may reflect the structured healthcare environment and the accessibility of diabetes-related services within Saudi Arabia. Previous reports have highlighted the expansion of specialized diabetes and endocrinology centers across the Kingdom, as well as national initiatives aimed at improving quality of life and public health infrastructure (National Unified Platform, 2022).

However, the moderate levels observed in the psychological, social, and physical dimensions may be attributed to the chronic nature of diabetes, which requires lifelong management and may impose emotional, physical, and social burdens on patients. This finding aligns with Prajapati et al. (2017), who reported that patients with diabetes generally experience lower quality of life compared to healthy individuals. Furthermore, the overall moderate level of quality of life supports the health-related quality of life framework, which emphasizes the interaction between subjective perceptions and objective health conditions. As noted by Khalaf et al. (2022), evaluating chronic illness outcomes should extend beyond clinical indicators to include psychological and social well-being.

5.3. Physical Dimension of Quality of Life

To address the second research question, eight items were used to assess the physical dimension of quality of life among patients with type 2 diabetes. Means and standard deviations were calculated, and the results are presented in Table 11.

Table 11. Means and Standard Deviations of the Physical Dimension Items

No.	Item	Mean	Percentage	Std. Deviation	Response Level	Rank
5	I take my prescribed medication regularly	2.28	64%	0.634	Applies to Some Extent	1

6	I find sufficient time to care for my health condition	2.20	60%	0.622	Applies to Some Extent	2
8	I sleep adequately without daily interruption due to diabetes episodes	2.05	52%	0.526	Applies to Some Extent	3
7	I take proper foot care (drying, moisturizing, cotton socks)	1.56	28%	0.764	Does Not Apply	4
2	I record blood glucose levels before meals	1.46	23%	0.638	Does Not Apply	5
1	I eat main meals at scheduled times	1.43	22%	0.676	Does Not Apply	6
3	I record blood glucose levels two hours after meals	1.34	17%	0.543	Does Not Apply	7
4	I monitor blood glucose during exercise to avoid episodes	1.30	15%	0.610	Does Not Apply	8
—	Overall Physical Dimension	1.70	35%	0.459	Applies to Some Extent	—

As shown in Table 11, the overall mean score for the physical dimension was 1.70, which falls within the second category of the three-point Likert scale (1.67–2.33), indicating that the physical dimension "applies to some extent."

The highest-ranked item was regular medication adherence (M = 2.28), followed by allocating sufficient time for health care (M = 2.20). In contrast, items related to self-monitoring behaviors—such as recording blood glucose levels and monitoring during exercise—received the lowest mean scores, indicating limited engagement in comprehensive self-care practices.

The results reveal variation in participants' responses, with mean scores ranging from 1.30 to 2.28, spanning both the "does not apply" and "applies to some extent" categories.

- Discussion of the Physical Dimension

The moderate overall score of the physical dimension may reflect partial adherence to medical treatment accompanied by limited behavioral self-management practices. While medication adherence appears relatively higher, lifestyle-related practices such as regular glucose monitoring, dietary regulation, and preventive foot care show lower levels of commitment.

This pattern may suggest that diabetes management among some patients remains predominantly medication-oriented rather than behavior-oriented. Effective management of chronic illnesses such as diabetes requires not only pharmacological treatment but also sustained lifestyle modifications and active self-care behaviors.

This finding is consistent with Gounas (2022), who reported that higher levels of health behavior are associated with improved quality of life among diabetic patients.

5.4. Psychological Dimension of Quality of Life

To address the third research question, eight items were used to assess the psychological dimension of quality of life among patients with type 2 diabetes. Means and standard deviations were calculated, and the results are presented in Table 12.

Table 12. Means and Standard Deviations of the Psychological Dimension Items

No	Item	Mean	Percentage	Std. Deviation	Response Level	Rank
4	I remind myself of the spiritual reward of patience to relieve pain	2.94	97%	0.280	Always Applies	1
3	I feel loved and cared for within my family	2.76	88%	0.524	Always Applies	2
7	I feel bored due to frequent medication intake	2.67	83%	0.519	Always Applies	3
6	I feel exhausted from long-term disease management	2.65	83%	0.535	Always Applies	4
2	I am satisfied with my physical appearance	2.15	57%	0.865	Applies to Some Extent	5
8	I accept others' criticism regarding my lifestyle as a diabetic patient	1.70	35%	0.769	Applies to Some Extent	6
1	I feel comfortable despite being restricted by a special health regimen	1.50	25%	0.698	Does Not Apply	7
5	I am motivated to learn how to calculate carbohydrate intake	1.27	13%	0.590	Does Not Apply	8
—	Overall Psychological Dimension	2.20	60%	0.257	Applies to Some Extent	—

As shown in Table 12, the overall mean score for the psychological dimension was 2.20, which falls within the second category of the three-point Likert scale (1.67–2.33), indicating that the psychological dimension "applies to some extent."

The highest mean score was observed for the item related to spiritual coping (M = 2.94), followed by feeling loved and supported within the family (M = 2.76). Conversely, lower mean scores were recorded for items related to lifestyle acceptance and motivation to learn carbohydrate management.

The responses showed considerable variation, with mean scores ranging from 1.27 to 2.94, spanning all three Likert categories.

- Discussion of the Psychological Dimension

The findings suggest that while participants demonstrate strong spiritual coping mechanisms and family support, challenges remain in areas related to lifestyle adaptation and proactive disease management. Spiritual resilience appears to play a significant role in psychological adjustment, which aligns with previous literature emphasizing the role of religious coping in managing chronic illness stress.

At the same time, the presence of boredom and exhaustion related to long-term disease management reflects the psychological burden associated with chronic conditions. The American Diabetes Association (2023) highlights that patients with diabetes often experience persistent emotional distress due to the ongoing demands of disease management. These results also support the psychological perspective of quality of life, which emphasizes subjective perceptions and emotional responses as central components of well-being. As indicated by Grio (2022), psychological support contributes significantly to improving quality of life among patients with diabetes.

5.5. Social Dimension of Quality of Life

To address the fourth research question, eight items were used to assess the social dimension of quality of life among patients with type 2 diabetes. Means and standard deviations were calculated, and the results are presented in Table 13.

Table 13. Means and Standard Deviations of the Social Dimension Items

No.	Item	Mean	Percentage	Std. Deviation	Response Level	Rank
5	I offer help to others	2.80	90%	0.424	Always Applies	1
7	I lose control of blood glucose levels during social occasions	2.67	83%	0.577	Always Applies	2

8	Conflicts with others increase due to my illness	2.49	74%	0.671	Always Applies	3
6	I receive support during family crises	2.43	71%	0.639	Always Applies	4
3	I perform my daily activities easily	1.94	47%	0.575	Applies to Some Extent	5
2	I recognize the benefits of exercise for diabetes	1.70	35%	0.784	Applies to Some Extent	6
1	I practice appropriate physical exercise	1.31	16%	0.619	Does Not Apply	7
4	I attend awareness activities organized by the center	1.18	9%	0.453	Does Not Apply	8
—	Overall Social Dimension	2.06	53%	0.229	Applies to Some Extent	—

As shown in Table 13, the overall mean score of the social dimension was 2.06, which falls within the second category of the three-point Likert scale (1.67–2.33), indicating that the social dimension "applies to some extent."

The highest mean score was observed for helping others (M = 2.80), followed by difficulty maintaining glycemic control during social occasions (M = 2.67). In contrast, participation in awareness activities (M = 1.18) and practicing appropriate physical exercise (M = 1.31) received the lowest mean scores. The results reveal substantial variation across items, with mean scores ranging from 1.18 to 2.80, covering all three Likert response levels.

- Discussion of the Social Dimension

The moderate overall level of the social dimension suggests that patients remain socially active and engaged, yet face challenges in balancing disease management with social participation. While strong indicators of social contribution and perceived support were observed, difficulties in glycemic control during social gatherings and increased interpersonal tensions reflect the complex interaction between chronic illness and social life. From a sociological perspective, quality of life within the social framework emphasizes belonging, social integration, and access to supportive networks. Social interaction fulfills individuals' needs for acceptance and recognition within their community. The presence of both supportive relationships and illness-related conflicts highlights the dual role of social environments in either buffering or amplifying the burden of chronic illness.

Empirical evidence also supports the importance of social capital in improving quality of life among patients with type 2 diabetes, as previous research has demonstrated a positive and statistically significant relationship between social capital and quality of life.

5.6. Environmental Dimension of Quality of Life

To address the fifth research question, eight items were used to assess the environmental dimension of quality of life among patients with type 2 diabetes. Means and standard deviations were calculated, and the results are presented in Table 14.

Table 14. Means and Standard Deviations of the Environmental Dimension Items

No.	Item	Mean	Percentage	Std. Deviation	Response Level	Rank
5	Authorized healthcare centers are located near my residence	2.82	91%	0.477	Always Applies	1
3	Medication delivery services are available in my neighborhood	2.80	90%	0.494	Always Applies	2
6	Healthcare services are easily accessible near my residence	2.61	81%	0.617	Always Applies	3
1	I live in adequate and healthy housing	2.58	79%	0.596	Always Applies	4
4	I live in a clean neighborhood	2.42	71%	0.766	Always Applies	5
8	I have transportation that allows me to attend medical appointments	2.35	67%	0.828	Always Applies	6
2	There is a suitable place for exercise in my neighborhood	2.15	58%	0.915	Applies to Some Extent	7
7	Recreational facilities suitable for my health are available nearby	1.85	43%	0.619	Applies to Some Extent	8
—	Overall Environmental Dimension	2.45	72%	0.444	Always Applies	—

As shown in Table 14, the overall mean score for the environmental dimension was 2.45, which falls within the third category of the three-point Likert scale (2.34–3.00), indicating that the environmental dimension “always applies.” The highest mean scores were related to the availability and accessibility of healthcare services and medication delivery, whereas lower scores were observed

for recreational facilities and exercise-friendly environments. Mean values ranged from 1.85 to 2.82, indicating generally favorable environmental conditions with some variability across specific aspects.

- Discussion of the Environmental Dimension

The high overall score of the environmental dimension suggests that participants benefit from supportive structural and infrastructural conditions that facilitate access to healthcare services. The strong presence of nearby authorized healthcare centers, medication delivery services, and transportation accessibility reflects the role of healthcare infrastructure in shaping patients' quality of life. From a sociological perspective, the environmental dimension represents the structural context within which individuals manage chronic illness. Social theory emphasizes that quality of life is not solely determined by individual factors but also by the availability of community-level resources, public services, and living conditions that enable individuals to meet their needs effectively. Previous studies have also demonstrated that social and community support structures contribute significantly to improving quality of life among patients with chronic illnesses, including type 2 diabetes.

6. Conclusion:

This study examined the multidimensional nature of quality of life among patients with type 2 diabetes attending diabetes and endocrinology centers in Makkah. The findings indicate that overall quality of life was perceived at a moderate level, suggesting that patients experience a partial but not comprehensive sense of well-being in managing their condition.

The environmental dimension emerged as the most prominent domain, reflecting the structural strength of healthcare accessibility and service availability. This finding underscores the importance of institutional and infrastructural support in shaping lived experiences of chronic illness.

In contrast, the physical dimension recorded the lowest level among the four domains, revealing gaps in sustained self-care behaviors despite relatively acceptable levels of medication adherence. This suggests that disease management remains partially biomedical rather than fully integrative.

The psychological and social dimensions presented a mixed pattern. While participants demonstrated strong spiritual coping and perceived family support, they also reported fatigue, boredom, and social strain associated with prolonged disease management. These findings highlight the complex interaction between personal resilience and the cumulative burden of chronic illness.

Taken together, the results affirm that quality of life among patients with diabetes cannot be reduced to glycemic control alone. Rather, it is shaped by the interplay between structural conditions,

behavioral practices, emotional adaptation, and social integration. This reinforces the relevance of the health-related quality of life framework as a comprehensive lens for understanding chronic disease experiences.

7. Recommendations

In light of the findings, the study proposes the following:

1. Developing structured educational interventions that move beyond medication adherence to emphasize sustainable self-management behaviors.
2. Integrating psychological counseling services into routine diabetes care to address long-term emotional fatigue and adaptive stress.
3. Encouraging active participation in community-based awareness and peer-support initiatives to strengthen social engagement.
4. Promoting family-inclusive care models that reinforce supportive environments for chronic disease management.
5. Adopting an integrative care strategy that aligns biomedical treatment with psychosocial and environmental determinants of health.
6. Expanding sociological research within the Saudi context to further explore how cultural values, social capital, and environmental infrastructure interact to shape quality of life among individuals living with chronic illness.

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