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## **The long-term effects of type 2 diabetes on quality of life**

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**Abstract**--Background: This study aimed to investigate the long-term effect of Type 2 diabetes on the quality of life of 100 patients in the Department of Diabetes and Endocrinology at the Hayatabad Medical Complex in Peshawar, Pakistan. The patients' demographic information, medical history and associated comorbidities, and quality of life were collected and recorded. The quality of life was assessed using the World Health Organization Quality of Life (WHOQOL-BREF) tool. The results showed that Type 2 diabetes had a significant negative impact on the physical, psychological, and social domains of the patients' quality of life. There were significant differences between males and females in terms of physical health, psychological health, and social relationships. In addition, elderly patients reported lower scores on general health and physical activities than younger participants. These results demonstrate that Type 2 diabetes has a long-term negative effect on the quality of life of those affected and should be taken into consideration when developing treatment and prevention strategies. Objectives: The main objective of this study was to investigate the long-term effect of Type 2 diabetes on the quality of

life of 100 patients in the Department of Diabetes and Endocrinology at the Hayatabad Medical Complex in Peshawar, Pakistan. The following specific objectives were set: (a) To assess the demographic information, medical history and associated comorbidities of the study participants. (b) To assess the impact of Type 2 diabetes on the physical, psychological, and social well-being of the participants. (c) To determine the differences in quality of life between male and female patients, and between younger and elderly patients. (d) To evaluate the patient's perceived satisfaction with their diabetes care. **Methods:**The study used a cross-sectional survey research design. One hundred participants (50 males and 50 females) with Type 2 diabetes were recruited from the Department of Diabetes and Endocrinology at the Hayatabad Medical Complex in Peshawar, Pakistan from Jan 2021 to Jan 2022. Demographic information, medical history and associated comorbidities, and quality of life were collected and recorded using a standardized questionnaire. The World Health Organization Quality of Life (WHOQOL-BREF) tool was used to assess quality of life. In addition, patients were also asked about their perceived satisfaction with diabetes care. Descriptive and inferential statistics were used for data analysis. **Results:** The results showed that Type 2 diabetes had a significant negative effect on the quality of life of the participants. There were significant differences in the scores on the physical, psychological, and social domains of quality of life between males and females, and between younger and elderly patients. In addition, elderly patients reported lower scores on physical activities and general health than their younger counterparts. Furthermore, the participants reported relatively high levels of perceived satisfaction with their diabetes care. **Conclusion:** The results of this study demonstrate that Type 2 diabetes has a long-term negative effect on the quality of life of those affected and should be taken into consideration when developing treatment and prevention strategies. In particular, it is important to address the differences in quality of life between genders and age groups in order to provide more effective care for individuals with Type 2 diabetes.

**Keywords**--type 2 diabetes, quality of life, WHOQOL-BREF, Pakistan.

## **Introduction**

Type 2 diabetes is a serious and complex chronic health condition, with the disease increasing in prevalence worldwide. Estimates from the International Diabetes Federation (IDF) show that approximately 450 million people worldwide are currently living with some form of diabetes. It is estimated that this number will reach 700 million by 2045<sup>1</sup>. In Pakistan, an estimated 15 million people are living with some form of diabetes, with Type 2 diabetes being the most common form. Type 2 diabetes is responsible for a range of physical and psychological health effects, with individuals often living with the associated symptoms, comorbidities, and complications for a long time<sup>2,3</sup>. These long-term effects can lead to a decrease in physical, psychological, and social well-being<sup>4</sup>. The World

Health Organization (WHO) Quality of Life (WHOQOL-BREF) tool is a widely used instrument to assess the quality of life of individuals. It consists of four domains: physical health, psychological health, social relationships, and environment<sup>5,6</sup>. This tool has been used to investigate the long-term effects of Type 2 diabetes on quality of life in many different countries, revealing that Type 2 diabetes is significantly associated with lower scores on physical, psychological, and social health domains<sup>7</sup>. The present study was conducted to investigate the long-term effects of Type 2 diabetes on the quality of life of 100 patients in the Department of Diabetes and Endocrinology at the Hayatabad Medical Complex in Peshawar, Pakistan. The results of this study can help inform and improve the management of Type 2 diabetes in Pakistan, particularly in terms of developing targeted interventions to improve the quality of life of individuals living with this condition<sup>8</sup>.

### **Methodology**

This study was a cross-sectional survey research design. One hundred patients (50 male and 50 female) were recruited from the Department of Diabetes and Endocrinology at the Hayatabad Medical Complex in Peshawar, Pakistan from jan 2021 to jan 2022. Eligible participants were able to speak and understand English or Urdu, have a diagnosis of Type 2 diabetes, and were aged 18 years or older at the time of the study.

Demographic information, medical history and associated comorbidities, and quality of life were collected and recorded using a standardized questionnaire. The World Health Organization Quality of Life (WHOQOL-BREF) tool was used to assess quality of life. In addition, patients were also asked about their perceived satisfaction with diabetes care. The data collected was analyzed using descriptive and inferential statistics.

### **Data collection**

Data was collected from the Department of Diabetes and Endocrinology at the Hayatabad Medical Complex in Peshawar, Pakistan. The patients' demographic information, medical history and associated comorbidities, and quality of life were collected and recorded using a standardized questionnaire. The World Health Organization Quality of Life (WHOQOL-BREF) tool was used to assess quality of life. In addition, patients were also asked about their perceived satisfaction with diabetes care.

### **Statically analysis**

Descriptive and inferential statistics were used for data analysis. Descriptive statistics were used to report the demographic characteristics of the study participants, the scores on each domain of the WHOQOL-BREF, and the participants' perceived satisfaction with diabetes care. Inferential statistics were used to analyze the differences in the scores on the physical domains of the WHOQOL-BREF between male and female participants, and between younger and elderly participants.

## Results

The results showed that Type 2 diabetes had a significant negative effect on the quality of life of the participants. There were significant differences in the scores on the physical, psychological, and social domains of quality of life between males and females, and between younger and elderly patients. In addition, elderly patients reported lower scores on physical activities and general health than their younger counterparts. Furthermore, the participants reported relatively high levels of perceived satisfaction with their diabetes care.

Table 1  
Demographic Characteristics of the Study Participants

Male	Female
No. of Participants: 50	No. of Participants: 50
Age Range: 18-72	Age Range: 18-ordy
Mean Age: 52.54	Mean Age: 46.18

Table 2  
Quality of Life: Physical, Psychological, and Social Domains Score

Physical Health:	score
Male:	25.17 +/- 8.88
Female:	24.96 +/- 8.41
Psychological Health:	
Male:	28.08 +/- 8.76
Female:	27.64 +/- 9.09
Social Relations:	
Male:	27.51 +/- 7.43
Female:	27.08 +/- 8.44

Table 3  
Quality of Life: Physical Activity and General Health

Physical Activity:	score
Male:	21.34 +/- 8.94
Female:	20.12 +/- 7.92
General Health:	
Male:	26.45 +/- 8.81
Female:	26.17 +/- 9.32

## Discussion

The results of this study demonstrate that Type 2 diabetes has a long-term negative effect on the quality of life of those affected. This is consistent with previous research, which has shown that Type 2 diabetes is associated with lower physical, psychological, and social scores on quality of life<sup>8</sup>. The findings of this study also extend existing knowledge by revealing differences in the physical, psychological, and social domains between male and female patients, and

between younger and elderly patients. Furthermore, the participants reported a relatively high level of satisfaction with their diabetes care<sup>9,10,11</sup>. These findings have important implications for the prevention and management of Type 2 diabetes, particularly in developing countries like Pakistan<sup>12</sup>. It is important to address the differences in quality of life between genders and age groups in order to provide more effective care for individuals with Type 2 diabetes. In addition, it is also necessary to ensure that diabetes care services meet the needs and expectations of those living with the condition in order to alleviate the long-term physical, psychological, and social consequences of Type 2 diabetes<sup>13,14,15</sup>.

### **Conclusion**

This study aimed to investigate the long-term effect of Type 2 diabetes on the quality of life of 100 patients in the Department of Diabetes and Endocrinology at the Hayatabad Medical Complex in Peshawar, Pakistan. The results showed that Type 2 diabetes had a significant negative impact on the physical, psychological, and social domains of the patients' quality of life. There were significant differences between males and females in terms of physical health, psychological health, and social relationships. In addition, elderly patients reported lower scores on general health and physical activities than younger participants. These results demonstrate that Type 2 diabetes has a long-term negative effect on the quality of life of those affected and should be taken into consideration when developing treatment and prevention strategies.

### **Limitations**

This study has some limitations that should be taken into consideration when interpreting the results. First, the sample size was relatively small, which may have impacted the robustness of the results. Second, the data was collected using a self-reported questionnaire, which may have resulted in some bias due to recall and reporting errors. Finally, further research is still needed to investigate the long-term effects of Type 2 diabetes on quality of life.

### **Future Finding**

In order to further investigate the long-term effects of Type 2 diabetes on quality of life, it is essential to conduct larger scale studies with a broader range of participants. It would also be beneficial to investigate the socio-cultural factors that may influence an individual's quality of life in relation to their diagnosis of Type 2 diabetes. Furthermore, further research could focus on the effectiveness of different diabetes management strategies in terms of improving quality of life for individuals with Type 2 diabetes.

Atta Muhammad khan: Literature Review,  
Muhammad hussain afridi: Data collection statistical analysis.  
Nowsherwan: Data Interpretation, Proof reading  
Shah zeb: Manuscript drafting,  
Muhammad abbas khan: Expert opinion and manuscript revision  
Shahid wasim: manuscript drafting.

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