

ORIGINAL ARTICLES

Quality of life of type 2 diabetes outpatients and the associated factors: A cross-sectional study at Ha Dong General Hospital in 2020

Nguyen Huu Thang^{1*}, Doan Thi Nguyet Minh¹, Pham Hai Thanh¹, Nguyen Xuan Thiem²

ABSTRACT

Objectives: This study aimed to describe the quality of life (QOL) of type 2 diabetes outpatients receiving treatment and the associated factors at Ha Dong General Hospital in 2020.

Methods: A cross-sectional descriptive study was conducted on 327 type 2 diabetes outpatients treated at Ha Dong General Hospital in 2020 by using the Asian Diabetic Quality of Life (Asian DQOL) questionnaire into Vietnamese.

Results: The mean score of overall QOL of type 2 diabetes outpatients is 68.5 ± 9.9 points. 83.2% of outpatients have good overall QOL; there were no outpatients with poor QOL. Married patients have a higher quality of life than other groups; the lowest is in the divorced or widowed group. The family economy at the non-poor level has higher quality than the poor and near-poor groups. Female patients had a higher QOL than male patients. Patients with a disease detection time of 5–10 years had the highest QOL. The group of patients with an overweight BMI had higher quality than other patients. The group of patients who did not receive insulin had a higher QOL than the patients who received insulin. Patients without comorbidities had a higher QOL than the group with comorbidities. ($p < 0,05$)

Conclusions: Research results show that the majority of people with type 2 diabetes at Ha Dong General Hospital have a good QOL. Marital status, family economic status, gender, time of disease diagnosis, BMI, treatment methods, and comorbidities are factors related to patients' QOL.

Key words: *Quality of life, diabetes, hospital, Ha Dong.*

INTRODUCTION

Diabetes is a chronic disease that affects millions of people worldwide and can lead to serious complications that negatively impact their quality of life (QOL) (1) neuropathy, or retinopathy were excluded. Patients completed the SF-36 generic quality of life questionnaire. Demographic data, including body mass index (BMI). In 2015, the International Diabetes Federation (IDF) reported that there were 415 million people (aged 20-79) worldwide with diabetes, indicating a significant global

health issue (2). In Vietnam, over 70% of diabetic patients are detected and treated late, highlighting the need for effective diabetes management strategies (3).

Measurement of QOL is an important aspect of assessing the impact of disease on the physical and mental health status of patients (4). Diabetes has a significant negative impact on QOL, and there is a need for the development of more sensitive and specific instruments to assess QOL in patients with diabetes (5). Several studies have reported lower QOL among patients



Corresponding author: Nguyen Huu Thang

Email: nguyenhuuthang@hmu.edu.vn

¹Hanoi Medical University

²Ha Dong General Hospital

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with diabetes compared to healthy individuals, emphasizing the importance of QOL assessment in this patient population (6,7).

In Vietnam, there have been some studies on the quality of life for people with diabetes. The Vietnamese Asian QOL questionnaire is a valid and reliable instrument to evaluate the level of quality of life in Vietnamese type 2 diabetes patients (8). In 2020, Ha Dong General Hospital managed approximately 2,800 type 2 diabetic outpatients. However, there is a lack of studies on the QOL of type 2 diabetes outpatients being treated at this hospital. Therefore, the objective of this study is to assess the QOL of type 2 diabetes outpatients being treated at Ha Dong General Hospital in 2020.

METHODS

Study design: This was a cross-sectional study that investigated the quality of life of type 2 diabetes outpatients receiving treatment.

Study site and time: At Ha Dong General Hospital between August and December 2020. A total of 327 patients were recruited into the study based on selection criteria included: patients undergoing outpatient treatment for type 2 diabetes at the hospital, available medical records for review, and consent to participate researcher. Exclusion criteria included: patients with mental illness, psychotic behavior disorder, or dementia who are taking drugs that can affect mental performance, such as tranquilizers and antidepressants, or who are pregnant.

Study variables and Data collection: Our study questionnaire is composed of three parts. The demographic included age, gender, married status, occupation, education level, ethnicity, living area, family economic status and use of using health insurance. The second part is the Asian DQOL quality of life

measurement questionnaire, comprised of 21 questions and five items. These five items included Finances (5 questions), Memory (4 questions), Energy (3 questions), Diet (6 questions), and relationships (3 questions). The choices of answers were on a 5-point rating scale ranging from “very dissatisfied” to “very satisfied”. The questionnaire has been translated into Vietnamese and evaluated in Vietnam at Vinh Yen City Hospital, Saint Paul General Hospital, Thanh Nhan Hospital, and Hanoi City Hospital to determine its reliability and usefulness for research on the quality of life of patients with type 2 diabetes (8–10). The third part of our questionnaire included 10 questions related to the hospital’s role in patient care.

Data analysis: Quantitative data were entered, checked, cleaned, and coded using EpiData 3.1 software. We converted the Likert scale from 1-5 to 0-100 (1=0; 2=25; 3=50; 4=75; 5=100 points for each sub-item in the data instrument) (11). The total QOL score was equal to the average score of 05 items. Rate the QOL according to the following levels: 0-25 points (Poor QOL); 26-50 points (Below average QOL); 51-75 points (Good QOL); 76-100 points (Excellent QOL). Categorical variables were presented as numbers and percentages, whereas the mean and standard deviation (SD) were used for continuous variables. All the statistical work was performed using SPSS 20.0 software.

Ethical approval: The study was approved by the hospital’s Board of Directors and department leaders in Ha Dong General Hospital. The interviewers completely volunteered to participate in the research and kept the information provided confidentially.

RESULTS

General information features

Table 1. General information features of research subjects (n=327)

Content	Number (n)	Percent (%)
Age		
Mean± SD	63.4 ± 11.6	
< 50 years old	35	10.7
50-59 years old	62	19
60-69 years old	131	40.1
≥ 70 years old	99	30.3
Gender		
Male	158	48.3
Female	169	51.7
Time of illness		
< 5 years	87	26.6
5 – 10 years	140	42.8
>10 years	100	30.6
Complications	283	86.5
Comorbidities	155	47.4
BMI		
Underweight	12	3.7
Normal	150	45.9
Overweight	165	50.5
Insulin	56	17.1
Glycemic index		
Low	8	2.4
Medium	216	66.1
High	103	31.5

According to the study's findings, among 327 participants, diabetes patients' mean age was 63.4 ± 11.6 years old (Table 1). The age group from 60 to 69 accounts for the highest proportion, whereas, the lowest is under 50 years old. Almost half of the patients were male. About two fifth of patients had disease detection time from 5 to 10 years. There were

majority of patients had complications. Nearly 50% of patients had comorbidities. More than 50 % of patients had an overweight BMI. 66.1% of patients had a medium glycemic index. Only 17.1% of patients were treated with insulin.

Quality of life type 2 diabetics

Table 2. QOL score of type 2 diabetics (n=327)

Content	Mean ± SD
Financial	75.9 ± 15.0
Mental health	74.5 ± 15.4
Physical health	73.0 ± 11.4
Diet	64.6 ± 10.7
Personal relationship	54.7 ± 11.8
Overall QOL score	68.5 ± 9.9

The overall QOL score of the patients was 68.5 ± 9.9. In which the financial sector had the highest QOL score, followed by mental health and physical health. The lowest figure was the personal relationship.

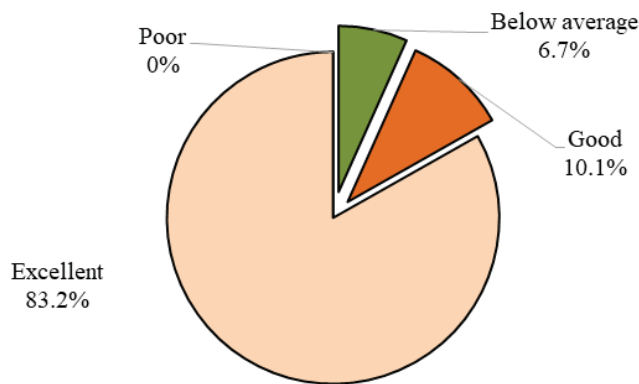


Figure 1. Distribution of QOL score of type 2 diabetics by classification (n=327)

The majority of patients had a good QOL of 10.1%. QOL scores are below average at 6.7%. No patient had poor QOL. of 83.2%, followed by an excellent QOL of 6.7%.

Table 3. Distribution of the overall quality of life score with some demographic characteristics of research subjects (n = 327)

Content	Mean ± SD	p-value
Marital status	Married	68.98 ± 9.54
	Divorced/Widow	52.52 ± 12.48
	Single	65.79 ± 11.31
Family economy	Not poor	68.84 ± 9.70
	Poor/Near-poor	52.82 ± 10.95
Gender	Men	67.18 ± 10.16
	Women	69.81 ± 9.58

* T-Test **One way ANOVA

The patient's overall quality of life significantly differs from marriage status, family income, and gender ($p < 0.05$). Patients with type 2 diabetes who are married have the

highest quality of life. Patients whose family economy is not poor have a higher quality of life. Female patients have a higher quality of life than male patients.

Table 4. Distribution of the overall quality of life score with some clinical features of the trial (n = 327)

	Content	Mean ± SD	p-value
Time of illness	< 5 years	63.41 ± 9.98	
	5-10 years	71.57 ± 8.72	0.000**
	>10 years	68.78 ± 9.80	
BMI	Underweight	65.35 ± 11.55	
	Normal	65.35 ± 10.70	0.000**
	Overweight	71.68 ± 7.97	
Insulin	Yes	60.99 ± 10.69	
	No	70.10 ± 9.04	0.000*
Comorbidities	Yes	65.90 ± 12.56	
	No	70.92 ± 5.86	0.000*

* *T-Test* ***One way ANOVA*

The group with a time of illness of 5–10 years had a higher QOL. Patients with an overweight BMI had the highest QOL. Patients treated with insulin had a lower QOL compared with the other group. Patients with comorbidities have a lower QOL than patients without comorbidities. The difference was statistically significant ($p < 0.05$).

DISCUSSION

The objective of this study was to evaluate the quality of life (QOL) of type 2 diabetes outpatients receiving treatment at Ha Dong General Hospital in 2020. The results indicated that the average QOL score was 68.5 ± 9.9 , with 83.2% of patients having good QOL scores. These findings were higher than those reported by Nguyen Thi Xuan

(2015), where the proportion of patients with an average or below-average score was relatively high (12). Our finding was also consistent with a previous study in Saudi Arabia in 2021 that showed that diabetes can have a negative impact on QOL (13). Besides, our results are consistent with the findings of other studies in Norway that have reported a lower QOL among patients with diabetes compared to healthy individuals (7). Therefore, it is necessary to focus on counseling and assisting these patients to overcome the limitations that affect their QOL.

Diet and physical activity are crucial components of diabetes treatment, helping to control blood sugar and prevent complications. In this study, the QOL score of diabetes patients following a diet was 64.6 ± 10.7 , and the average score on physical

health was 73.0 ± 11.4 points. These results were higher than those reported by previous studies, indicating the importance of adhering to a reasonable diet and engaging in physical activities for diabetes management (14). The mental health QOL score was 74.5 ± 15.4 , which was above average. However, this score was lower than that reported by Nguyen Thi Bich Hai (14). Chronic diseases such as diabetes pose significant financial burdens on both patients and the healthcare system. The cost of diabetes treatment in Vietnam is estimated to increase significantly by 2025 (15). The financial sector achieved the highest QOL score, with a score of 75.9 ± 15.0 . This finding may reflect the relatively high socioeconomic status of the patients in this study or may suggest that access to healthcare services is less of a financial burden for diabetic patients in this setting. Additionally, mental health and physical health also scored relatively high, with scores of 74.5 ± 15.4 and 73.0 ± 11.4 , respectively, which may reflect the importance of managing mental and physical health in diabetes management (10).

The study also found that personal relationships scored the lowest among the five items of QOL assessed, with a score of 54.7 ± 11.8 . This is consistent with previous studies that have shown that diabetes can have a negative impact on personal relationships, such as marital relationships and social interactions (16). Patients with diabetes may experience stress and anxiety related to their condition, which can affect their relationships with family and friends. Moreover, the QOL score in the area of personal relationships was the lowest, highlighting the need for early detection and counseling of sexual health problems in diabetic patients to improve their QOL in this area (17). Overall, the study findings emphasize the importance of a comprehensive approach to diabetes management that considers all aspects of

patients' QOL.

In addition, the study found that patients who had a good QOL score accounted for the highest proportion at 83.2%. This finding is encouraging and suggests that a large proportion of diabetic patients have a good QOL. However, the study also found that a small proportion of patients had below-average scores (6.7%). This highlights the need for interventions aimed at improving the QOL of these patients.

The results of this study have shown that marital status, family economy, and gender are the factors that have statistically significant differences with the mean score of overall QOL. This result is different from the study of Nguyen Thi Xuan (2015), which found differences in other factors such as age and family economy (12). Similar to the study of Nguyen Dinh Tuan et al. (2013) with statistically significant differences in factors such as age and education level (18); or research by Nguyen Thi Bich Hai (19) with factors such as marital status, occupation, and gender. The cause of this difference may be due to the difference in sample size and population characteristics in the study area. The family economy in our study is also a factor, with a statistically significant difference in QOL found. This can explain why family patients with good conditions will be able to pay for issues such as treatment costs and nutritional problems with less financial pressure than others with poor or near-poor patients.

In the area of general QOL score, we consider the difference between six factors in terms of clinical characteristics. The results of the analysis showed that the time of disease detection, BMI, insulin treatment, and comorbidities were the factors that had statistically significant differences with the mean score of overall QOL ($p < 0.05$). Compared with the study of Nguyen Thi

Bich Hai, the author shows that there are related factors such as time of disease onset, complications, insulin treatment, and glycemic index (19). In our study, patients with disease detection times ranging from 5 to 10 years had the highest overall QOL score (71.57 ± 8.72). The difference between these two studies is also reflected in the treatment method factor. Nguyen Thi Bich Hai's study showed that patients with insulin treatment had a higher overall QOL score; this result is the opposite compared with our study.

Our study has some limitations that need to be considered. Firstly, the evaluation of QOL was limited to patients with type 2 diabetes at Ha Dong General Hospital, which may restrict the generalizability of the results to other healthcare settings or populations. Additionally, the cross-sectional design of the study did not allow for the observation of changes in QOL over time, and thus, longitudinal studies would be necessary to gain a better understanding of the trends in quality of life for people with diabetes in this hospital.

Furthermore, potential biases may have influenced the findings of this study, such as selection bias, as only patients who attended the hospital during the study period were included. To mitigate these biases, future studies should aim to include a more diverse patient population and adopt a random sampling approach. Moreover, the study did not examine the influence of factors such as medication adherence and comorbidities on the QOL of patients with diabetes, which could be explored in future research.

To address these limitations, it is recommended that future studies adopt a more comprehensive methodology that includes a wider range of patient populations and employs a longitudinal study design. In addition, researchers should attempt to reduce potential biases by using random

sampling methods and controlling for relevant confounding factors. Finally, it may be useful to investigate other factors that could impact quality of life in patients with diabetes, such as medication adherence and comorbidities.

CONCLUSION

The mean score of overall quality of life of type 2 diabetes outpatients is 68.5 ± 9.9 points. In which the highest score in the financial section is 75.8 ± 14.9 points, the lowest is in the personal relationship with 54.7 ± 11.8 points. 83.2% of patients have good overall quality of life; there were no patients with poor QOL. Married patients have a higher quality of life than other groups; the lowest is in the divorced or widowed group. The family economy at the non-poor level has higher quality than the poor and near-poor groups. Female patients had a higher quality of life than male patients. Patients with a disease detection time of 5–10 years had the highest quality of life. The group of patients with an overweight BMI had higher quality than other patients. The group of patients who did not receive insulin had a higher QOL than the patients who received insulin. Patients without comorbidities had a higher QOL than the group with comorbidities. ($p < 0.05$).

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