

# Health-Related Quality of Life of Type 2 Diabetes and Hypertension Patients in Slovenia



**Health-Related Quality of Life of Type 2 Diabetes and Hypertension Patients in Slovenia**  
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**Introduction**

Health-related quality of life (HRQoL) is widely used to assess the effects of the management of chronic disease on health.

Previous studies indicated that HRQoL for patients with type 2 diabetes (T2D) is lower than that of the healthy individuals. Some variables such as the type of T2D, use of healthy diet, related complications, social status, psychological factors, literacy, educational level, knowledge about the disease, type of assistance which they received have shown may interfere in the QoL for these patients. Similarly, previous studies reported that hypertension was associated with low HRQoL, which is a risk factor for various health events or adverse health outcomes.

To measure HRQoL, multiple measurement tools can be used, which can be divided in generic and disease-specific measures. In our research, both types of measures were used.

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**Methodology**

A survey was conducted on a convenience sample of 233 patients with AH and 133 patients with T2D from Health Community Center Ljubljana and Health Community Center Ptuj in Koroška. The generic questionnaire measuring HRQoL used was EQ-5D-5L and the disease-specific questionnaires used were MinihoL II score for hypertension and DCML II for type 2 diabetes.

While official Slovenian version of EQ-5D-5L was used, both disease-specific questionnaires were translated within the project using principles of Good Practice for the Translation and Cultural Adaptation-Process for Patient Reported Outcomes (PRO) Measures.

The research was conducted within the EU-funded H2020 NCLBY project.

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**Results**

MinihoL II was filled out by 233 patients with AH. The average QoL score per item on MinihoL was 1.33 (out of 2.0) and it was lower than 1.5 (the worst QoL), indicating high QoL of patients. Similarly high HRQoL was shown by EQ-5D-5L, where the average utility index score was 0.885 and the average EQ VAS score was 71.20. The most affected health dimension in hypertensive patients was pain/discomfort, where 52% of patients reported problems. The correlation between both HRQoL questionnaires is moderate (0.317).

Figure 1 - QoL score per item, MinihoL, AH patients, 2019



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**Conclusions**

Health-related quality of life (HRQoL) of AH as well as of T2D patients aged 65+ is high as shown by disease-specific as well as generic instruments. Generic instruments show very similar quality of life of both groups of patients as measured by EQ VAS (71.20 and 71.20 for AH and T2D patients, respectively) or EQ-5D utility index (0.885 and 0.885 for AH and T2D patients, respectively). The correlation between generic and disease-specific instruments in T2D and AH is moderate.

Further research could compare HRQoL of both patient groups by gender, utility of the region, education and other social and demographic variables.

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## INTRODUCTION

Health-related quality of life (HRQoL) is widely used to self-assess the effects of the management of chronic disease on health.

Various studies indicated that HRQoL for patients with type 2 diabetes (T2D) is lower than that of the healthy individuals. Some variables such as the type of T2D, use of insulin, age, related complications, social status, psychological factors, ethnicity, educational level, knowledge about the disease, type of assistance which they received from others may interfere in the QoL for these patients<sup>1</sup>. Similarly, previous studies reported that hypertension was associated with low HRQoL<sup>2</sup>, which is a risk factor for serious health events or adverse health outcomes.

To measure HRQoL, multiple assessment tools can be used, which can be divided in generic and disease-specific measures. In our research, both types of measures were used.

The objective of our research was to estimate health-related quality of life of patients with type 2 diabetes (T2D) and/or arterial hypertension (AH) in Slovenia.

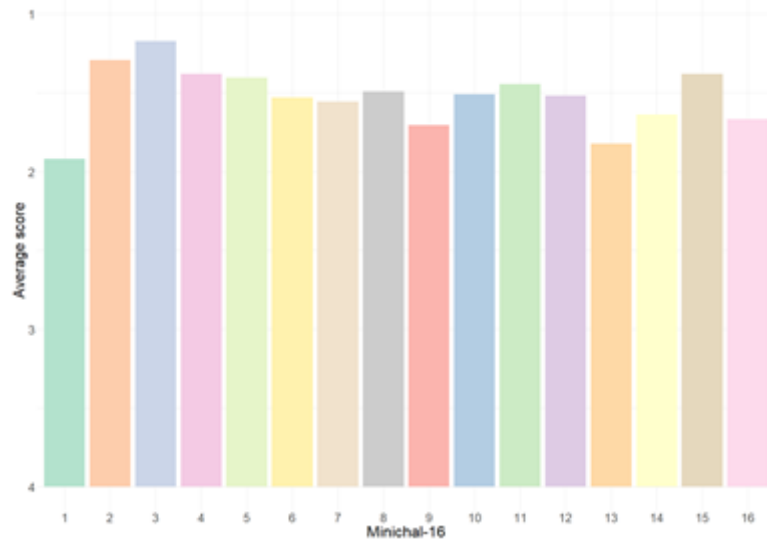
<sup>1</sup> Kiadaliri AA, Najafi B, Mirmalek-Sani M. Quality of life in people with diabetes: a systematic review of studies in Iran. *J Diabetes Metab Disord.* 2013;12(1):54.

<sup>2</sup> Xiao M, Zhang F, Xiao N, Bu X, Tang X, Long Q. Health-Related Quality of Life of Hypertension Patients: A Population-Based Cross-Sectional Study in Chongqing, China. *Int J Environ Res Public Health.* 2019;16(13):2348.

## RESULTS

Minichal-16 was filled out by 232 patients with AH. The average QoL score per item on Minichal was 1.35 (sd: 2.01) on a scale from 1 to 4 (4: the worst QoL), indicating high QoL of patients. Similarly high HRQoL was shown by EQ-5D-5L, where the average index utility score was 0.695 and the average EQ VAS score was 71.05. The most affected health dimension in hypertension patients was pain/discomfort, where 60% of patients reported problems. The correlation between both HRQoL questionnaires is moderate (-0.371).

**Figure 1: QoL score per item, Minichal, HT patients, 2019**



Q1 Have you been sleeping poorly?

Q2 Have you had difficulty maintaining your usual social relationships?

Q3 Have you had difficulty interacting with other people?

Q4 Have you felt that you are not playing a useful role in life?

Q5 Have you felt unable to make decisions and start new things/projects?

Q6 Have you felt continuously distressed and tense?

Q7 Have you felt that life is a constant struggle?

Q8 Have you felt incapable of enjoying your daily activities?

Q9 Have you felt worn-out and powerless?

Q10 Have you felt sick?

Q11 Have you had difficulty breathing or felt breathless for no apparent reason?

Q12 Have your ankles been swollen?

Q13 Have you noticed that you are urinating more frequently?

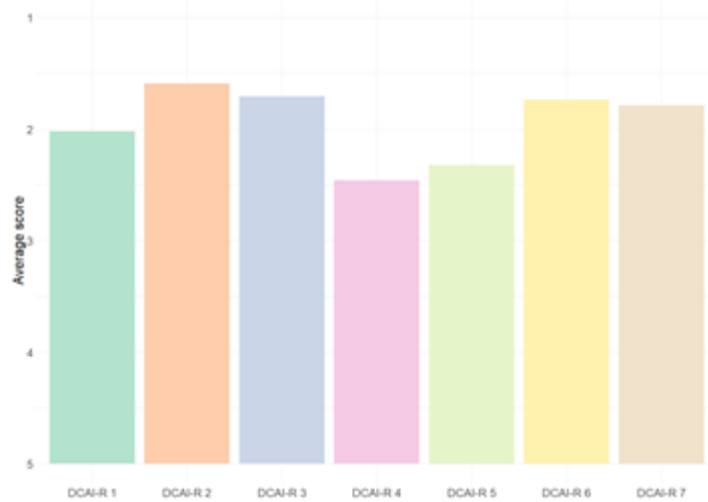
Q14 Has your mouth been dry?

Q15 Have you felt pain in the chest without doing any physical exertion?

Q16 Have you noticed numbness or a tingling sensation in any part of the body?

187 patients with T2D filled out 7 item DCAI-R and EQ-5D-5L questionnaires. The average score per DCAI-R item was 2.01 (sd=0.94) on a scale from 1 to 5 (where 5 indicated the worst HRQoL). EQ-5D-5L results showed the average index utility score of 0.685 and the average EQ VAS of 71.24. Most affected health dimension in T2D patients is pain/discomfort, where 63.5% of patients reported any problems and 37.5% of patients reported at least moderate problems. The correlation between both HRQoL questionnaires is moderate (-0.158).

**Figure 2: QoL Score per item, DCAI-R, T2D patients, 2019**



1. How upsetting is having diabetes for you?
2. How much control over your diabetes do you have?
3. How much uncertainty do you currently experience in your life as a result of being diabetic?
4. How likely is your diabetes to worsen over the next several years? (Try to give an estimate based on your personal feeling rather than based on a rational judgment.)
5. Do you believe that achieving good diabetic control is due to your efforts as compared to factors which are beyond your control?
6. How effective are you in coping with your diabetes?
7. To what degree does your diabetes get in the way of your developing life goals?

## METHODOLOGY

A survey was conducted on a convenience sample of 235 patients with AH and 192 patients with T2D from Health Community Center Ljubljana and Health Community Center Ravne na Koroškem. The generic questionnaire measuring HRQoL used was EQ-5D-5L and the disease specific questionnaires used were Minichal-16 item for hypertension and DCAI-R for type 2 diabetes.

While official Slovenian version of EQ-5D-5L was used, both disease-specific questionnaires were translated within the project using principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes (PRO) Measures<sup>1</sup>.

The research was conducted within the EU-funded H2020 SCUBY project.

<sup>1</sup> Wild, D, Grove, A, Martin, M, Eremenco, S, McElroy, S, Verjee-Lorenz, A, Erikson, P. Principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes (PRO) Measures: Report of the ISPOR Task Force for Translation and Cultural Adaptation. *Value in Health*, 2005, 8(2): 94-104.

## CONCLUSIONS

Health-related quality of life (HRQoL) of AH as well as of T2D patients aged 65+ is high as shown by disease specific as well as generic instruments. Generic instruments show very similar quality of life of both groups of patients as measured by EQ VAS (71.05 and 71.24 for AH and T2D patients, respectively) or EQ-5D utility index (0.692 and 0.685 for AH and T2D patients, respectively). The correlation between generic and disease-specific instruments in T2D and AH is moderate.

Further research could compare HRQoL of both patient groups by gender, rurality of the region, education and other social and deographic variables.