Original Article

Linguistic Validation and Cultural Adaptation of the Bulgarian Version of Missoula-VITAS Quality of Life Index-15

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Abstract

Background: In medical practice, Quality of Life (QoL) assessment is an integral part of managing chronic diseases. End-stage chronic kidney disease (CKD) is a chronic condition that exerts a great negative impact on patients' health-related quality of life. In this regard, the maintenance of optimal QoL in patients with end-stage CKD conducting chronic haemodialysis (CHD) treatment is a major goal of healthcare.
Aim: The aim of this study is translation, cultural adaptation and a pilot study of the Bulgarian version of the Missoula-VITAS Quality of Life Index-15(B-MVQOLI-15) in patient with end-stage renal disease undergoing CHD treatment.
Methods: Forward and back translations of the Missoula-VITAS Quality of Life Index-15 (MVQOLI-15) linguistic validation, and cultural adaptation were carried out of the MVQOLI-15. The cognitive debriefing through focus interviews was used to verify a semantic validation of the instrument. Test-retest study with thirty end-stage chronic kidney disease patients was conducted to estimate the inter-rater and intra-rater reliability. Internal consistency of Likert-type scales was calculated using Cronbach's alpha coefficient.
Results: The Bulgarian version of MVQOLI-15 demonstrated good psychometric characteristics: Cronbach's alpha ($\alpha = 0.777$), test-retest reliability ($r_{sb} = 0.871$), and ICC varied between 0.736 – acceptable and 0.920 (P=0.000).
Conclusion: The Bulgarian version of MVQOLI-15 shows that it is a suitable for patients with end-stage renal disease undergoing chronic haemodialysis, considering similarity and equivalence with the original version.

Keywords: quality of life, chronic haemodialysis, chronic kidney disease

Introduction

In medical practice, Quality of Life (QoL) assessment is an integral part of managing chronic diseases. End stage chronic kidney disease (CKD) is a chronic condition that exerts a great negative impact on patients' health-related quality of life (Gerasimoula el al., 2015, Unruh & Hess, 2007, Kaufman, 2001, Christodoulou et al., 2015). In this regard, the maintenance of optimal QoL in patients with end-stage CKD conducting chronic haemodialysis (CHD) treatment is a major goal of healthcare.

At present in literature are noted few health - related quality of life (HRQOL)' instruments, that are considered health indicators for that group of

patients (Theofilou, Kapsalis, & Panagiotaki, 2012, Byock,& Merriman, 1998).

The scale Missoula-VITAS Quality of Life Index-15 (MVQOLI-15) is one of them and it was designed by Byock and Merriman and specifically designed to assess the patient's personal experience in each of 5 dimensions or domains of QOL of patients: symptoms, function, interpersonal, well-being and transcendence (Byock & Merriman, 1998). Each item uses a five-point Likert scale recorded so that the lowest score always indicated the least desirable situation and vice versa. The instrument is focused on areas for which palliative care is most effective, such as psychosocial and spiritual problems (Schwartz at al., 2005).

The MVQOLI has been used in various different healthcare settings including hospice, hospital, home health, long-term care (including assisted living), outpatient palliative care, and others (Byock,& Merriman, 1998). Within each dimension, three kinds of information are gathered from respondents in order to illuminate their overall experience:

- Assessment – subjective measurement of actual status or circumstance;
- Satisfaction – degree of acceptance or mastery of actual circumstance;
- Importance – degree to which a given dimension has an impact on overall quality of life.

The statistical data are showing that at the end of 2017 there were more than 3760 CKD patients conducting chronic dialysis in Bulgaria, of whom more than 98% are treated with haemodialysis (Vazelov E., 2017). In recent years, the number of CHD patients with malignancies (most commonly onco-hematological diseases) and mental illnesses (dementia), newly enrolled patients with advanced heart failure and other severely progressing diseases has increased.

There is an increase in the number of elderly patients in Bulgaria, as well as the number of new CKD patients referred to renal replacement therapy during the last year. These could be the reasons for the lack of improvement of the mortality rate among the patients receiving chronic dialysis treatment in the last 3 years. This is probably contributing for some overall decrease in quality of life among the dialysis patients, despite the significant improvement of the main indicators (URR, serum levels of Hb, P and Alb.), reflecting the quality of haemodialysis (HD) care during the last 10 years (Vazelov E., 2017).

No studies are found so far on the translation and cultural adaptation of the MVQOLI-15 for advanced disease patients in Bulgaria. There is no study on translation and cultural adaptation of MVQOLI-15 measuring quality of life or health-related quality of life (QoL/HRQoL) in patients on CHD in Bulgaria therefore we have undertaken this study.

Aim

The aim of this study is translation, cultural adaptation and a pilot study of the Bulgarian version of the Missoula-VITAS Quality of Life Index-15(B-MVQOLI-15) in patient with end-stage renal disease undergoing CHD treatment.

Methodology

Study design

The study design was cross-sectional that was carried out in one haemodialysis center. Ethical approval was obtained from the University Research Ethics Committee (№ 03/31.05.2018).

Forward and back translations of the MVQOLI-15

Before the researchers proceeded with the translation and linguistic validation procedure, they were granted permission to use the questionnaire by its authors. The questionnaire was translated from the source language (English) to the target language (Bulgarian) by two independent professional translators, according guidelines.

Then, after synthesis and consensus between two forward translators, third translator made a backward translation. A final step of smoothing out the language was made editing the target language version of the instrument with the original version.

Semantic validation of the MVQOLI-15

The validity of the contents was determined by nephrology specialists with long professional experience who analyzed the clarity and pertinence of the questions. Five patients with CKD on CHD

treatment took part in the cognitive debriefing by focus interviews technics.

Data collection for test-retesting study

A sample of 30 patients undergoing in-center CHD was selected from the University Hospitals "St. George" in Plovdiv, the second largest city of Bulgaria.

Inclusion criteria were:

- > 18 years of age
- Literacy and ability of communication in Bulgarian
- Chronic kidney diseases (CKD)
- Willingness to participate

Exclusion Criteria were:

- *Patients with dementia*
- *Blind patients*

Participants were informed through a cover letter that participation in the research or refusal to participate would not have any impact on their treatment. Also, they received a brief explanation of the aim of the study and that the data will be confidentially using for the purpose only.

A test-retesting study

After the initial filling the questionnaire had to be completed for a second time by the same 30 patients in order the reliability of their answers to be tested. In general, the stability of the instrument refers to the extent to which similar results are obtained on two separate occasions or in a test-retesting procedure. To meet the time period condition and to minimize recollection bias the test and retesting were applied with a two-week time interval in our survey. The final version of B-MVQOLI-15 questionnaire was elaborated through in-depth analysis of the test / retesting results.

Statistical analysis

The Intraclass Correlation Coefficient (ICC), Spearman-Brown coefficient and Wilcoxon signed-ranks test were used in the reliability analysis (test / retesting). Internal consistency of Likert-type scales was calculated using Cronbach's alpha coefficient. To perform the statistical analysis the IBM SPSS Statistics version 13 (SPSS Inc., 2003, Chicago, USA) software was used. The level of the significance was considered as $p<0.05$.

Results

In the translation phase the questionnaire was modified and considered suitable, observing similarity and equivalence of the original version.

To maintain the instrument content validity at a conceptual level across different cultures, the applicability of MVQOLI original items was checked with a cognitive assessment interview. The following changes were made to B-MVQOLI-15: the word "relatives" was added to Q8; the phrase "The ability to experience and overcome life difficulties or problems" was added to the "Transcendence" panel. Other 8 demographic characteristics such as age, gender, educational level, marital status, occupation, continuance of chronic haemodialysis treatment, other diseases, related to the respondents were included (Table1).

Out of a total of 30 patients 23 patients returned valid completed questionnaires. The rate of response was very high (76.6%) considering that the survey was conducted during the haemodialysis procedure and in this setting some patients could be more likely to have negative attitudes towards the questionnaire.

Descriptive characteristics of the respondents

The demographic characteristics of the participants who completed the test - retesting questionnaires are presented in Table 1.

The Bulgarian version of MVQOLI-15 demonstrated the following psychometric properties: internal consistency Cronbach's alpha ($\alpha = 0.777$), test-retest reliability ($r_{sb} = 0.871$), and ICC varied between 0.736 – acceptable and 0.920 (P=0.000). Detailed psychometric characteristics are present in Table 2.

Table 1 Sociodemographic characteristics of the sample (N=23)

Characteristics	**N (%)**
1. **Gender**	
Male	14 (60.9)
Female	9 (39.1)
2. **Age** (M±SD)	(58.0 ±15.0) Min= 35 Max=84
3. **Marital Status**	
Single	2 (8.7)
Married	13 (56.5)
Divorced	2 (8.7)
Widowed	4 (17.4)
Cohabitation	2 (8.7)
4. **Educational level**	
Elementary	2 (8.7)
Secondary	14 (60.9)
University	7 (30.4)
4. **Chronic diseases**	
Yes	19 (82.6)
No	4 (17.4)
5. **Years since the health problem was presented**	
< 1 year	4 (17.4)
2-5	3 (13.0)
6 -10	13(56.5)
>11	3(13.0)
Continuance of CHD treatment in years (M±SD)	(7±3.66)

Table 2. Results from test-retest reliability of the panel questionnaire among patients with CHD (N=23)

Questions	*Wilcoxon Signed-ranks Test**	*Spearman-Brown coefficient (r_{sb})*
GLOBAL		
How would you rate your overall quality of life?	1.54	
SYMPTOM		
1. I feel sick all the time.	1.414	0.935
2. I am satisfied with current control of my symptoms.	0.921	0.669
3. My physical discomfort limits me in every opportunity to experience pleasure.	0.604	0.740
FUNCTION		
4. I am no longer able to do much of the things I love to do.	0.000	0.549
5. I accept the fact that I cannot do many of the things I used to do.	0.816	0.933
6. My satisfaction with life depends on whether I am active and independent in the care for myself.	0.447	0.883
INTERPERSONAL		
7. I have recently been able to say important things to the people close to me.	1.730	0.825
8. At present, I spend as much time as I want with my family, relatives or friends.	0.000	0.973
9. It is important to me to have close personal relationships.	0.447	0.675
WELL BEING		
10. My life is not well settled; I worry that many problems are not solved.	1.558	0.717
11. I am more satisfied with myself as a person now than I was before my illness.	0.144	0.674
12. It is important to me to be in harmony with myself.	1.155	0.507
TRANSCENDENT		
13. I now understand the meaning of my life better than in the past.	0.175	0.876
14. Life has lost meaning to me; every day is a burden to me.	0.108	0835
15. It is important to me to feel that my life has meaning.	0.000	0.331

P>0.05

Discussion

This paper presents the translation process and adaptation of MVQoLI-15 in Bulgarian population of patients undergoing CHD treatment. The present study also demonstrates satisfactory levels of the internal consistency (Cronbach's alpha), test-retest reliability and validity of the B-MVQoLI-15. In another study Byock and Merriman have examined the psychometric properties of the MVQOLI and reported satisfactory full-scale internal consistency (Cronbach's alpha =0.77) (Byock,& Merriman, 1998). The authors also confirmed the construct validity of the MVQOLI by strong correlation with Multidimensional Quality of Life Scale.

In one relevant study the internal consistency of the Greek version of MVQoLI-15 has been tested and showed high level (Cronbach's alpha =0.74) (Theofilou et al., 2013). The MVQoLI-15's appropriateness for measuring quality of life in palliative care patients was assessed by Selman L and al.(Selman et al., 2011).

In general, there are few QoL/HRQoL measurement instruments which can be successfully used among patients with end-stage renal disease (Paraskevi, 2011, Matziou el al.,2015). A construct validity was checked out between MVQOLI-15 и the Kidney Disease Questionnaire by other authors (Alikari, 2018). The Kidney Disease Questionnaire was found to be associated with both the Greek versions of the Simplified Adherence Questionnaire in haemodialysis (GR-SMAQ-HD) scale and the MVQoLI-15 scale and its subscales (Symptom, Transcendent, Total Score) indicating convergent validity (Alikari, 2018).

Paraskevi Theofilou at al. have demonstrated good psychometric characteristics and a semantic validation of the MVQoLI-15 was carried out in Greek population. [6]

Conclusion

The current study revealed that the B-MVQOLI-15 is an acceptable, valid, and reliable measure of QoL for patients with end-stage renal disease undergoing chronic haemodialysis treatment. Further studies are needed for completing the process of validation in the country. Next the instrument will become available to Bulgarian researchers to measure HRQoL in chronic haemodialysis patients, as well as to compare results from Bulgaria to that of other cultures in which the instrument has already been validated. The B-MVQOLI-15 questionnaire can facilitate clinical decision making, assess the quality of care, estimate a population's health service needs and more deeply understand the causes and consequences of particular health problems. Tailored interventions can be further developed to support patient's care.

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