Validity and reliability of the measure yourself medical outcome profile 2 (MYMOP2) questionnaire among Turkish patients having anorectal disorders

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ABSTRACT

Background/Aims: Measure Yourself Medical Outcome Profile 2 (MYMOP2) is a patient-generated outcome measure allowing patients to select the problems that are the most important to them and that they want to address, and it measures the effects of the problem from a wide range of health care interventions. This study aimed to translate the questionnaire into Turkish language (Turkish MYMOP-TMYMOP) and add this clinically useful measure to Turkish medical practice by assessing its validity and reliability.

Materials and Methods: Fifty volunteers with anorectal disorders were prospectively included into the study. Each patient was enrolled into a pelvic floor training biofeedback program, specific to their anorectal symptomatology. The subjects were administered both the Nottingham Health Profile and the TMYMOP2 questionnaires before the treatment session (initial visit) and at the control follow-up visits (the first and second months, via e-mail or telephone calls).

Results: The TMYMOP2 questionnaire was shown to be moderately valid (the Pearson correlation coefficient score between the total scores of the subgroups of the two questionnaires were 0.335 and 0.642, respectively, p<0.05) and highly reliable (the Cronbach's alfa coefficient score between the total scores of the subgroups of the two questionnaires were 0.77, 0.82, and 0.88 in the beginning and at the first and second month follow-up visits, respectively).

Conclusion: The TMYMOP2 was shown to be a low-to-moderately valid and a highly reliable scale. Because it is brief and short to complete, it might be an important and free-to-use tool to measure the diseases, and it can enhance the patient-centered care within the Turkish health care context.

Keywords: MYMOP2, TMYMOP2, validity, reliability, Turkish, measure yourself medical outcome profile

INTRODUCTION

A simple and short set of questions that asks patients to assess the outcomes of diseases can be sometimes insufficient to measure the treatment results of the disease (1). Designing a new questionnaire can be difficult, lengthy, and expensive, and the question wording is fraught with difficulties. Therefore, adopting an existing measuring scale into another language is more commonly used method in global medicine. Most of the questionnaires used to measure the general health status in clinical practice are developed and used in different cultures and languages. To prevent language problems, adopted questionnaires should satisfy the criteria for reliability and validity. Validity is the extent to which an instrument measures what is intended, and reliability is the extent to which measurements on the same respondent are similar on repeated applications of the measure at different time periods (2). For academic and practical issues, patient-reported outcomes are also very important in the gastroenterology practice; however, most gastroenterologists, or gastrointestinal health care providers, do not routinely administer these questionnaires and there are several traditional challenges to do so (time to complete, complexity, and longevity of the surveys, difficult scoring, lack of measurement standards, etc.) In our study, we aimed to adopt the Measure Yourself Medical Outcome Profile 2 (MYMOP2) instrument into Turkish among patients having benign anorectal problems, in order to add this user-friendly patient-reported outcome instrument into primarily gastroenterology, but also to other disciplines to monitor the patients and an increase of their outcomes in the context of everyday clinical practice. By adopting the MYMOP2 into Turkish, we aimed to let the researchers to measure global and intercultural data and compare them, and allow the researchers to argue about the same data.

Turk J Gastroenterol 2019; 30(1): 28-32

Ersoy et al. TMYMOP2 validity and reliability.
into Turkish patients having anorectal disorders

The MYMOP questionnaire allows patients themselves to select up to two symptoms that are concerning them most and to subjectively assess the change of these symptoms over time following a therapeutic intervention. The MYMOP questionnaire was developed by Dr. Charlotte Paterson (3) in 1996 and revised as the MYMOP2 in 1999 (4,5), which includes the questions about medications. The MYMOP2 has only four questions, and it is very sensitive to measure the differences (5,6). By that, it can be used in various kinds of illnesses. It can be used in patients aged 11 years and older. The studies evaluating the MYMOP have shown its good content for validity (7), feasibility (8), and sensitivity to change (9,10).

Considering its short application time and sensitivity with the differences, the MYMOP2 questionnaire can be very useful in clinical practice in terms of diagnosis and follow up. Up to date, it is already adopted to many languages among patients with different medical disciplines.

As a brief, the aim of this study was to translate the MYMOP2 questionnaire into Turkish and add this questionnaire into Turkish medical practice and culture and assess its validity and reliability among the patients with anorectal disorders (chronic constipation, anal incontinence, chronic pelvic pain).

MATERIALS AND METHODS

Questionnaire
The MYMOP2 consists of four questions. In the first two questions, patients are asked to specify up to two symptoms that have concerned them most. A third question asks for a restriction of an activity due to the symptoms. The fourth question focuses on general well-being. In an optional follow-up form, the symptoms and activities specified in the initial form are assessed again.

Additionally, patients can choose to specify and rate a third symptom that newly occurs. Questions should be answered considering the last week's status. In terms of scoring, all questions have to be rated on 7-point Likert-type scales with 0 as the best and 6 as the worst answer option. The MYMOP2 scores can be calculated as either a mean of the ratings or considering the questions individually. The higher the score gets, the worse the outcome is. Scores from the initial and follow-up forms can be compared later. The Turkish translation was based on the MYMOP2 version that is available free of charge online.*
*www.bris.ac.uk/primaryhealthcare/resources/mymop/

Translation
International guidelines have been used for translation (11). First, the MYMOP2 was independently translated from English to Turkish (forward translation) by two native Turkish speaker researchers. Both researchers agreed on a final translated Turkish version. The translated final Turkish version was subsequently translated back into English again (reverse translation) by two native English colleagues whose mother tongue is English. The final reverse translation version was consented. Afterwards, an independent professional medical translator compared both the reverse translated and the original version of MYMOP2 to observe the differences. The translated Turkish version (TMYMOP2) was given to a small patient sample (n=5) to correct for indefiniteness. According to their feedback, the questionnaire was slightly adjusted. These patients were not included into the study.

Setting and sampling
Fifty patients with anorectal disorders (chronic constipation, anal/fecal incontinence, chronic pelvic pain) admitted to the center for Hemorrhoids and Anorectal Diseases at Fulya Acıbadem Hospital and were planned to receive biofeedback treatment as their first choice of treatment after detailed evaluations and specific investigations, were prospectively included into the study after taking their consent according to the ethical approval from Acıbadem University School of Medicine, İstanbul, Turkey. The study period was between October 2016 and July 2017.

Each patient included into the study was enrolled into a pelvic floor and bowel training biofeedback program according to his or her symptomatology. After this treatment session, clinical follow-up visits were done via e-mail or telephone calls in the following first and the second months. The subjects were administered the Nottingham Health Profile (NHP), which is valid and reliable in Turkish (12) along with the TMYMOP2 questionnaire, to measure the validity and reliability of the TMYMOP2, at the initial visit and at the control follow-up visits (following the first and second months).

Patients with an insufficient command of Turkish, under the age of 11, with dementia, and who were not literate were excluded from the study. Targeted patient sample was calculated as 50.

Data collection
Patients were first informed about the study purpose by the researcher. After obtaining their consent, prospec-

Ersoy et al. Ersoy et al. TMYMOP2 validity and reliability
into Turkish patients having anorectal disorders

Turk J Gastroenterol 2019; 30(1): 28-32

tively included eligible patients filled in the TMYMOP2 instruments during the first consultation before the biofeedback therapy, which was going to be the intervention in this study. At this *initial TMYMOP2 form*, patients were asked to tell/write what symptom (in their own words) is the most important to them as to seek treatment and then they are asked for a second (optional but encouraged) symptom, which is related to the first one. Then, the patient was asked to choose an activity (optional but encouraged) that they feel his or her symptom(s) interfere with. And lastly, the patient is asked to rate on a 0-6 scale (6=as bad as it can be) how bad each of the three items (two symptoms and one activity) have been over the last week. At the first and second months of the treatment (biofeedback intervention), the *follow-up TMYMOP2* forms are filled in again during either the telephone consultations or via e-mail questioning. All questionnaires were given a pseudonym number before all the personal information was erased. The subjects were also administered the NHP along with the TMYMOP2 questionnaire to measure the TMYMOP2 validity and reliability at each visit.

Table 1. Participant characteristics (n=50 patients)

		n	%
Sex	Male	17	34.0
	Female	33	66.0
Age	≤25	16	32.0
	25-40	18	36.0
	≥40	16	32,0

n: patient number

Table 2. Validity of the TMYMOP2: correlations between the TMYMOP2 scores and the NHP scores when questionnaires were first given

Nottingham Health Profile	Pearson Correlation Coefficient
Pain	0.484**
Emotional reactions	0.601**
Sleep	0.463**
Social isolation	0.335*
Physical abilities	0.413**
Energy levels	0.395**
Total score of first part	0.642**
Total score of second part	0.631**

TMYMOP2: Turkish Measure Yourself Medical Outcome Profile 2; NHP: Nottingham Health Profile

Instruments for validation and reliability

To assess the construct validity, a comparison with a quality-of-life questionnaire was applied. The NHP and TMYMOP2 Questionnaires are applied to the sample. The NHP consists of two main parts and six subgroups. Patients need to answer questions with yes or no. Every individual question has its specific score. It can be both calculated by subgroups or as total score of the main parts. The higher the score gets, the worse the patient's quality of life.

To confirm the construct validity, a correlation of r≥0.30 was expected (3). Since higher scores denote worse outcomes in the TMYMOP2 and also better outcomes in the NHP, the correlation was expected to be positive in tendency.

Statistical analysis

Using per protocol analysis of construct validity, Pearson's correlation coefficient was calculated between the TMYMOP2 scores and the NHP scores. To confirm reliability, Cronbach's alfa coefficient was also calculated (SPSS Statistics for Windows 10, Version 24.0. IBM Corp.; Armonk, NY, USA).

RESULTS

A study sample of 57 participants was prospectively included in our study, and all completed the initial form. Out of 57 patients, 2 patients wanted to quit the study at once, and 5 patients were lost at follow-up.

Characteristics of the participants are shown in Table 1.

Validity

For a total of 50 patients, both the TMYMOP2 scores and NHP index scores at the initial assessment were calculated. There were no missing data. The TMYMOP2 and NHP correlated significantly and higher than expected. (Due to subgroup scores of the NHP, the r value varied between 0.335 and 0.642 [p <0.05]), which can be seen in Table 2.

Reliability

The Cronbach's alpha coefficients score between the scores of two questionnaires were shown to be 0.77, 0.82, and 0.88 at the initial and the first and second month follow-up visits, respectively. Results of the coefficients score can be found in Table 3.

Our baseline values and changes to the TMYMOP2 scores are shown in Table 4, and the NHP scores are shown in Table 5.

Turk J Gastroenterol 2019; 30(1): 28+32

Ersoy et al. Ersoy et al. TMYMOP2 validity and reliability
into Turkish patients having anorectal disorders

DISCUSSION

The MYMOP2 has been used successfully in English-speaking countries, whereas it has already been translated into French, Japanese, Spanish, Swedish, German, and Chinese (9,10). However, there is no validated Turkish translation available yet. Based on the results of this study, the Turkish version of the MYMOP2, the *TMYMOP2*, proved to be both valid and reliable.

In contrast to Paterson et al. (3) who used the SF-36, and Katja Hermann et al. (13), who used EQ-5D (EuroQuol-5 Dimension), in their studies for testing the validity and reliability of the MYMOP, we used the NHP for comparison to the TMYMOP. The NHP is another comparable measure of perceived health status, and considering the frequent use of the NHP in the literature and also its sim-

Table 3. Reliability of the TMYMOP2: Cronbach's alfa coefficient scores between the TMYMOP2 and the NHP scores from each visit

	Cronbach's Alfa Coefficient
Initial form application	0.77
First month follow-up	0.82
Second month follow-up	0.88

TMYMOP2:Turkish Measure Yourself Medical Outcome Profile 2; NHP: Nottingham Health Profile

Table 4. Our baseline values and changes in the TMYMOP2 scores

	Mean	Standard Deviation
Baseline values	3.5900	1.16907
First Follow-Up	2.4640	1.06018
Second Follow-Up	2.0160	1.24136

TMYMOP2: Turkish Measure Yourself Medical Outcome Profile 2

plicity and diversity, the NHP was selected in our study to test the construct validity of the TMYMOP2. It covers every symptom of anorectal diseases, especially the part for social isolation. Yeşildal et al. (14) also evaluated the reliability and validity of the Turkish version of Medical Outcomes Study Sleep Scale with the NHP in patients with knee osteoarthritis and also, as stated before, the adaptation of NHP for use in Turkey was studied in 2000 by Kucukdeveci et al. (12).

The correlation between the TMYMOP2 and NHP was higher than expected on the basis of the original validation study (3). Our baseline values and changes in the TMYMOP2 scores are comparable to the results of other studies from different disciplines in the literature. Pollus et al. (15) studied chiropractic patients and measured the effects with the MYMOP2 and Well-Being Questionnaire 12 (W-BQ12). The study showed that the MYMOP2 was responsive to change and may be a useful instrument for assessing clinical changes among chiropractic patients who present with a variety of symptoms and clinical conditions. Paterson et al. (16) completed a research on measuring the treatment effects of traditional acupuncture with the MYMOP2, W-BQ12, EQ-5D, and EQ-VAS, and it has been shown that all the questionnaires were feasible to administer, acceptable to patients and clinic staff, and provided robust and detailed quantitative and qualitative outcome data of use for service provision, future planning, and as a basis for further cost-effectiveness studies. In the literature, no study has been found where the MYMOP2 questionnaire has been used to measure any gastrointestinal treatment outcomes. This is the first study that the MYMOP2 has been used to report gastrointestinal outcomes among patients with gastrointestinal disorders. The MYMOP allows patients to name other factors that they suspect have an influence on their health. In a clinical setting,

Table 5. Our baseline values and changes in the NHP scores

	Base Values (SD)	First Follow-Up (SD)	Second Follow-Up (SD)
Pain	21.18 (21.40)	16.08 (18.30)	12.56 (16.62)
Emotional reactions	26.79 (23.24)	24.07 (23.78)	21.28 (23.05)
Sleep	15.14 (16.10)	12.50 (15.90)	10.24 (13.78)
Social isolation	14.92 (22.59)	12.94 (22.20)	12.87 (22.03)
Physical abilities	19.37 (15.06)	15.42 (12.74)	12.50 (11.64)
Energy levels	43.77 (32.82)	42.04 (34.54)	40.78 (35.45)
Total score of the first part	141.21 (84.41)	123.08 (84.74)	110.25 (84.86)
Total score of the second part	3.82 (2.38)	3.30 (2.23)	2.80 (2.31)

SD: Standard Deviation; NHP: Nottingham Health Profile

Ersoy et al. Ersoy et al. TMYMOP2 validity and reliability
into Turkish patients having anorectal disorders

Turk J Gastroenterol 2019; 30(1): 28-32

as a tool for communication and reflecting on the therapy with the patient (3), we recommend that the patient should be encouraged to fill out the part, which has been given on the follow-up form, that gives an opportunity to him or her to name the other factors that may affect his or her symptoms, and the general well-being he or she suspects. It enables medical professionals to understand the patients' underlying concepts of disease and could assist in identifying the influences on well-being.

The use of patient preference questionnaires has several advantages: patients only rate symptoms and activities that are of immediate importance to them, and since the content of the questionnaire is personally relevant, the problem of missing data is minimized, and improvements during therapy are easier to detect.

The TMYMOP2 proved to be a valid and a reliable tool. Because it is short and simple to fill-in, it can be easily incorporated into many health care, as well as gastroenterology, settings. Therefore, the TMYMOP2 might be an important tool to enhance the patient-centered care, which can encourage the Turkish physicians to use this instrument in their daily clinical practice to report their patients' outcomes.

Study limitations

We adopted a dual approach of data collection (both face-to-face and telephone interviews at 4-week interval follow-ups). The effect of such variation on data quality requires further assessment. All patients were under current treatment for their symptom(s) so that patients rarely experienced the worsening symptoms in the following 4 weeks, and also the main problem for the patient might change over time, and then it became more difficult to be answered by the patients. To overcome this limitation, additional studies are required to assess its suitability for the use with other patient populations.

Ethics Committee Approval: Ethics committee approval was received for this study from the Ethics Committee of AcıbademUniversity School of Medicine.

Informed Consent: Written informed consent was obtained from the patients who participated in this study.

Peer-review: Externally peer-reviewed.

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