



Psychometric properties of the Headache Under-Response to Treatment (HURT) questionnaire and the Migraine Disability Assessment Test (MIDAS) translated to Serbian

Psihometrijske karakteristike prevoda HURT (*Headache Under-Response to Treatment*) i MIDAS (*Migraine Disability Assessment Test*) upitnika na srpski jezik

Radica Živković Zarić*, Slobodan M. Janković*, Éva Csépany†, Tamás Gyüre†, Csaba Ertsey‡, Marija Andjelković*

University of Kragujevac, *Faculty of Medical Sciences, Kragujevac, Serbia; Semmelweis University, †János Szentágothai Doctoral School of Neurosciences, ‡Department of Neurology, Budapest, Hungary

Abstract

Background/Aim. The Headache Under-Response to Treatment (HURT) questionnaire and the Migraine Disability Assessment Test (MIDAS), which are intended for assessing the headache-related disability, impact (MIDAS) and management (HURT), were not yet translated to Serbian and validated in the population of Serbia. The aim of this study was to translate the HURT and MIDAS from English to Serbian, to make necessary cultural adaptations and to test their psychometric properties in a sample of outpatients with the headache. **Methods.** The HURT and MIDAS questionnaires were translated and adapted according to the internationally accepted guidelines, and then tested on a sample of Serbian patients with various headache types. Internal consistency was checked through the calculation of Cronbach's alpha for the questionnaires, and by correlation of each question with the corrected total score. The criterion validity of the translation was tested by correlating scores of individual items, domains and whole questionnaire with the headache characteristics (severity, duration, frequency), and convergent validity was tested by correlating the abovementioned scores with results of an instrument

for measurement of headache-related quality of life. **Results.** There were 171 (79.2%) females and 45 (20.8%) male study participants. The mean age of the patients was 42.3 years, (standard deviation – SD 13.35; range 18–75); 27 (12.5%) suffered from a migraine and 189 (87.5%) from the episodic tension-type headache (TTH). The Serbian translation of HURT and MIDAS questionnaires showed excellent internal consistency, with high values of the Cronbach's alpha: 0.764 and 0.731, respectively. The validity of the instruments in all aspects (criterion, convergent and discriminant validity) was also excellent for the whole sample and for the subgroup of patients with TTH, while the results for the patients with the migraine were less favorable. The factor analysis suggested the existence of one domain of MIDAS and two domains of HURT questionnaires. **Conclusion.** The Serbian translations of HURT and MIDAS could be used as the reliable and valid specific instruments for measuring a headache-related disability, impact (MIDAS) and management (HURT) in the patients with TTH and probably in the patients with the migraine.

Key words:

headache; migraine disorders; analgesics; treatment outcome; serbia; translating; surveys and questionnaires.

Apstrakt

Uvod/Cilj. Nedovoljan efekat terapije na glavobolju (HURT) i Test procene nesposobnosti usled migrene (MIDAS), upitnici namenjeni proceni nesposobnosti kod bolesnika sa glavoboljom, nisu do sada bili prevedeni na srpski jezik, niti je ispitana njihova punovažnost u srpskoj populaciji. Cilj ovog rada bio je da se prevedu HURT i MIDAS upitnici sa engleskog na srpski jezik, da se učine neo-

phodna kulturološka prilagođavanja i da se ispitaju psihometrijska svojstva prevoda na grupi vanbolničkih bolesnika se glavoboljom. **Metode.** HURT i MIDAS su prevedeni na srpski jezik i prilagođeni prema međunarodno prihvaćenim vodičima, zatim ispitani na uzorku bolesnika iz Srbije sa različitim tipovima glavobolje. Unutrašnja konzistencija je bila ispitana kroz izračunavanja Kronbahovog koeficijenta alfa za upitnike kao celine, kao i korelacije svakog od pitanja iz upitnika sa ukupnim skorom bez tog pitanja (korigovani

ukupni skor). Punovažnost prevoda upitnika prema određenim kriterijumima je bila ispitana kroz izračunavanje korelacije skorova za pojedina pitanja, domenu upitnika i upitnike kao celine sa karakteristikama glavobolje kod bolesnika (težina, trajanje, učestalost), kao i sa rezultatima upitnika za merenje kvaliteta života kod bolesnika sa glavoboljom (konvergentna punovažnost). **Rezultati.** U studiji su bili uključeni 171 (79,2%) žena i 45 (20,8%) muškaraca. Prosečna starost bolesnika je bila 42,3 godine, (standardna devijacija – SD 13,35; opseg 18–75); 27 (12,5%) bolesnika je imalo migrenu i 189 (87,5%) povremene tenziona glavobolje. Prevodi HURT MIDAS upitnika na srpski jezik su pokazali odličnu unutrašnju konzistenciju, sa visokim vrednostima Kronbah alfa: 0,764 i 0,731. Punovažnost ovih upitnika u svim pogledima (prema kriterijumima, konvergentna i dis-

krinatorna) je bila, takođe, odlična za čitav uzorak grupe bolesnika sa tenzionom glavoboljom, dok su rezultati kod bolesnika sa migrenom bili manje povoljni. Faktorska analiza je pokazala da MIDAS upitnik ima jedan domen, a HURT dva domena. **Zaključak.** Prevodi HURT i MIDAS upitnika na srpski jezik se mogu koristiti kao pouzdani i punovažni specifični instrumenti i za merenje nesposobnosti izazvane glavoboljom (MIDAS) i uticaja terapije (HURT), pre svega kod bolesnika sa tenzionom glavoboljom i verovatno kod bolesnika sa migrenom.

Ključne reči:

glavobolja; migrena; analgetici; lečenje, ishod; srbija; prevođenje; ankete i upitnici.

Introduction

High prevalence of headache was recorded in almost all age groups all over the world. Within the adult population, one-year prevalence of migraine is 10%–18%, and that of tension-type headache (TTH) 31%–90%¹. A headache is also frequently encountered among children: the mean prevalence of headache in children and adolescents from 32 countries was reported to be 54.4% for any kind of headache and 9.1% for the migraine^{2, 3}. A headache is causing a significant disability in the patients, which is further translated to job absenteeism, social withdrawal, decreased quality of life and disturbed family relations. When treating a patient with a headache, the physicians should be interested not only in the decrease of pain, but also in the withdrawal of disability and return of the patient to his/her normal life⁴.

When treating a patient with a headache, in order to prescribe a suitable therapy we need to know the extent of disability caused by the disorder and whether it was appropriately managed. Beside several specific instruments for measuring quality of life in the patients with the migraine and other headache types with excellent psychometric properties, like Comprehensive Headache-related Quality of Life Questionnaire (CHQQ)^{5–7}, there are also the validated short and simple instruments for measuring disability, the Migraine Disability Assessment Test (MIDAS) for the patients with the migraine⁸ and evaluating both disability and response to treatment, the Headache Under-Response to Treatment (HURT) questionnaires for all headache types⁹. Currently, there are no available Serbian translations with trans-cultural adaptations of instruments measuring a headache-related disability and response to treatment, so clinicians in Serbia use only basic clinical tools when managing the patients with the headache¹⁰.

In response to the current needs, the aim of our study was to translate the HURT questionnaire and the MIDAS from English to Serbian, to make necessary cultural adaptations and to test their psychometric properties in a sample of outpatients with a headache.

Methods

Patients

The study included outpatients of primary care Health Center in Kragujevac, Serbia, who consecutively visited their general practitioners from February to June 2015, with a headache as the main complaint and who had either diagnosis of migraine with and without aura (episodic type; The International Classification of Headache Disorders-2nd – ICHD-II codes 1.1 and 1.2) or a TTH (episodic type; ICHD-II codes 2.1–2.2)¹¹. The patients with the following diagnoses were excluded from the study: rare adult migraine subtypes, probable migraine, probable tension-type headache, analgesic abuse, moderate to severe liver or kidney failure, untreated hypertension, refractive disorders and chronic pain syndromes.

The study was approved by the Ethics Committee of the Health Center in Kragujevac, Serbia, where the study took place.

Translation and cultural adaptation of the original MIDAS and HURT questionnaires

The translation and cultural adaptation of the MIDAS and the HURT questionnaires were made according to the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) guidelines¹². The permission for the translation and cultural adaptation was obtained from Professor Walter F. Stewart (the Johns Hopkins School of Public Health, Baltimore) for MIDAS and from Professor Timothy J. Steiner (the Department of Neuroscience, the Norwegian University of Science and Technology, Trondheim) for HURT. The original questionnaires were at first translated to Serbian by Radica Živković Zarić and Slobodan Janković, working independently. The translations were then harmonized to one Serbian version at the meeting of the study investigators. The harmonized Serbian version was then translated back to English by Dr. Žan Friščić, a native English speaker, born in Australia. When translating back to English, he was not aware of the original English versions of the MIDAS and the HURT questionnaires. The back-translation to English was then compared with the original English versions by the study investigators, and at a separate meeting the final

Serbian versions of the MIDAS and HURT questionnaires were agreed on. The final translations of the MIDAS and the HURT to Serbian were then probed on 9 patients with a headache (at the Health Center in Kragujevac, Serbia) for clarity and comprehension. Only a few minor changes were made after the pilot test, and then final Serbian versions were used for the psychometric testing.

Data recording

The patients completed the Serbian versions of CHQQ, HURT and MIDAS questionnaires by themselves in the Health Center, after their visit to the general practitioners, who administered the questionnaires. The general practitioners noted the clinical characteristics of the patients during the visit, using a checklist prepared by the study investigators. The patients rated severity of their headaches on a visual analogue scale (VAS; 0–100 mm). Exact diagnosis of the headache type had been previously made by the neurologists from the Clinical Center Kragujevac. The patients were not tested for anxiety, or depression.

Statistics

The responses to the questions from the MIDAS were not transformed, while the answers to questions from the HURT questionnaires were rated from 1 to 5; the total scores for both questionnaires were obtained by summation. The reliability of the Serbian versions of the MIDAS and the HURT questionnaires was tested by measuring the internal consistency through calculation of the Cronbach's alpha. The Cronbach's alpha was calculated both for the instruments and their dimensions. The criterion validity of the Serbian versions of the MIDAS and the HURT questionnaires was tested by correlating the patient's headache characteristics with the individual items, dimensions and total score of the questionnaires. The convergent validity was assessed through correlating (Spearman's rank correlation) the individual items, dimensions and total scores with the total score of the CHQQ instrument and with each other. The discriminative validity was tested by comparing the results of the Serbian versions of the MIDAS and the HURT questionnaires in the two study groups, the patients with the migraine and tension-type headache, using the Mann–Whitney test.

The confirmatory factorial analysis of the Serbian translations of the MIDAS and the HURT questionnaires was made by the principal components method¹³. First, the suitability of the questionnaires and the sample for the factorial analysis was tested by the Kaiser-Meyer-Olkin measure of sampling adequacy and by the Bartlett's test of sphericity. Then, the factors were extracted at first without rotation, under the condition that Eigen values had to be greater than 1, and using the Scree-plot (the extracted factors were above the "elbow" of the graph). Second, the referent axes were rotated by orthogonal Varimax method, and another extraction of the factors was made, using the same criteria as for the un-rotated solution. The extracted factors were then compared with the dimensions of the original MIDAS and HURT questionnaires, and named accordingly.

All calculations in this study were performed by the SPSS software, version 18. The level of significance was set at $p < 0.05$.

Results

Completing the questionnaires

There were 216 patients who completed the questionnaires. The average time spent for filling-in the questionnaires was less than 25 minutes, and there were no complaints from the patients' side. The questionnaires were completely filled, so the answers of all 216 patients were used for the statistical calculations.

Patient characteristics

There were 171 (79.2%) female and 45 (20.8%) male patients, all of Caucasian origin. The mean age was 42.3 years, [standard deviation (SD) 13.35; range 18–75]. As to the occupation, 168 (78.2%) patients were employed, 21 (9.7%) were unemployed, 15 were retired (6.9%) and 11 (5.1%) were students.

Among the study patients 27 (12.5%) had a migraine and 189 (87.5%) an episodic TTH. The headache attack frequency was higher in the patients with the migraine (mean 11.9 attacks in 3 months, SD 9.2, versus 9.8 in 3 months, SD 14.2; $p > 0.05$), as well as the pain intensity (mean 7.9 points on a scale from 1 to 10, SD 1.7 in the migraineurs, versus 5.5 points, SD 2.2 in the TTH patients; $p < 0.01$) and the duration of attack (mean 619.6 minutes, SD 1002.6 minutes in the migraineurs, versus 281.7 minutes, SD 524.3 minutes in the TTH patients; $p < 0.01$). The distribution of sexes was similar among the patients with the migraine and among those with the TTH (2:25 versus 43:146; the Fisher's exact test; $p = 0.078$). Three patients with TTH reported depression as a concomitant condition.

Reliability

For testing the reliability the first 5 questions of MIDAS and the first 6 questions of the HURT questionnaire were taken into account (the seventh question of HURT questionnaire is measuring fear from the adverse drug effects and it did not significantly correlate with both other questions individually and with the corrected total score of the HURT – the data available on request). The reliability of the MIDAS and the HURT taking the whole study sample was very good: the Cronbach's alpha was 0.764 for the HURT and 0.731 for the MIDAS; when tested on the patients with the tension headache only, the Cronbach's alpha was 0.727 for the MIDAS and 0.821 for the HURT. The same parameter was 0.709 for the MIDAS in the group of patients with the migraine, and 0.484 for the HURT. The first dimension of the HURT questionnaire (disability) also showed the satisfactory reliability both in the whole study sample and in the diagnostic subgroups, while the second dimension worked well in the TTH group (Table 1).

Table 1**Internal consistency of the questionnaires and their dimensions (Cronbach's alpha values)**

Item or score	Whole study sample		Patients with TTH		Patients with migraine	
	MIDAS	HURT	MIDAS	HURT	MIDAS	HURT
Total score	0.731	0.764	0.727	0.821	0.709	0.484
Disability dimension	N/A*	0.892	N/A	0.884	N/A	0.937
Treatment response dimension	N/A	0.491	N/A	0.732	N/A	0.028

*Not applicable, because MIDAS has only one dimension.

MIDAS – Migraine Disability Assessment Test; HURT – Headache Under-Response to Treatment questionnaire; TTH – tension-type headache.

Table 2**Testing criterion validity: the correlations between the items, dimensions and total score of the instrument with the clinical characteristics**

Item or score	Group	Frequency of headache attacks (in the last 3 months)	Headache severity (VAS)	Mean attack length (minutes)	Disease length (years)
MIDAS					
Job absenteeism	ALL	0.279	0.279	0.086	-0.022
Productivity loss at job	ALL	0.323	0.316	0.091	0.097
Incapable of housekeeping	ALL	0.520	0.353	0.144	0.164
Productivity loss at home	ALL	0.545	0.359	0.232	0.102
Avoiding social interaction	ALL	0.517	0.453	0.246	0.109
Total score MIDAS	ALL	0.642	0.490	0.255	0.171
	TTH	0.624	0.470	0.221	0.136
	Migraine	0.481	0.108	0.259	-0.088
HURT					
Headache frequency	ALL	0.739	0.421	0.164	0.062
Productivity loss	ALL	0.663	0.395	0.215	0.150
Avoiding social interaction	ALL	0.636	0.492	0.197	0.181
Taking analgesic	ALL	0.600	0.464	0.285	0.130
Efficacy of analgesic	ALL	0.256	0.330	0.232	0.026
Control of headache	ALL	0.320	0.329	0.237	0.084
Disability dimension	ALL	0.784	0.519	0.255	0.150
Treatment response dimension	ALL	0.333	0.365	0.257	-0.062
Total score HURT	ALL	0.704	0.530	0.292	0.070
	TTH	0.688	0.532	0.247	0.026
	Migraine	0.624	0.167	0.326	-0.157

*ALL – whole sample; TTH – subgroup of patients with tension-type headache; Migraine – subgroup of patients with migraine; MIDAS – Migraine Disability Assessment Test; HURT – Headache Under-Response to Treatment questionnaire. Values of Spearman's correlation coefficients given in bold are significant ($p < 0.05$).

Validity

The criterion validity: When taking the whole sample, five items from the MIDAS and 6 items from the HURT, the total scores of both questionnaires, and the scores of disability and treatment response dimensions of the HURT were significantly and positively correlated with the headache frequency and headache severity. It was similar with the mean attack length, with the exception of the items 1 and 2 of the MIDAS (job absenteeism and productivity loss at job) where the correlation was not significant. On the other hand, the disease length correlated only with the total score of the MIDAS, the item "incapable of housekeeping" from the MIDAS, disability dimension of the HURT questionnaires and with two items from the HURT: "productivity loss" and "avoiding social interaction". The results were similar in the subgroup of patients with the tension-type headache. However, in the subgroup of patients with the migraine, the total

scores of the MIDAS and the HURT questionnaires correlated positively and significantly only with the headache frequency (Table 2).

The convergent validity: the MIDAS and the HURT instruments showed excellent convergent validity for the whole sample and for the subgroup of patients with the tension-type headache (Table 3). All items, the total scores of the MIDAS and the HURT questionnaires and the scores of the HURT's dimensions correlated negatively and significantly (with high correlation coefficients) with the CHQQ score. All items, the total score of the HURT and the scores of HURT's dimensions correlated positively and significantly with the MIDAS score, and vice versa. The results were somewhat less favorable for the subgroup of patients with the migraine, where the score for the MIDAS did not correlate with the CHQQ score (Table 3).

The discriminative validity: The comparison of headache-related disability and treatment response as measured

by the MIDAS and the HURT questionnaires among two subgroups (migraine and TTH) showed the higher scores in the group of patients with migraine. The difference was sig-

nificant for the 3 of 5 MIDAS items, the 3 the of 6 HURT items, for the whole questionnaires and for each of the two HURT's dimensions (Table 4).

Table 3

Testing convergent validity: the correlations between the items, dimensions and total score of the HURT, MIDAS and CHQQ

Item or score	Group	MIDAS	HURT	CHQQ
MIDAS				
Job absenteeism	ALL	1.00	0.392	-0.309
Productivity loss at job	ALL	1.00	0.403	-0.364
Incapable of housekeeping	ALL	1.00	0.508	-0.582
Productivity loss at home	ALL	1.00	0.587	-0.582
Avoiding social interaction	ALL	1.00	0.593	-0.573
Total score MIDAS	ALL	1.00	0.697	-0.690
	TTH	1.00	0.666	-0.692
	Migraine	1.00	0.632	-0.211
HURT				
Headache frequency	ALL	0.581	1.00	-0.486
Productivity loss	ALL	0.665	1.00	-0.603
Avoiding social interaction	ALL	0.651	1.00	-0.640
Taking analgesic	ALL	0.590	1.00	-0.530
Efficacy of analgesic	ALL	0.382	1.00	-0.389
Control of headache	ALL	0.355	1.00	-0.400
Disability dimension	ALL	0.721	1.00	-0.660
Treatment response dimension	ALL	0.403	1.00	-0.444
Total score HURT	ALL	0.697	1.00	-0.672
	TTH	0.666	1.00	-0.675
	Migraine	0.632	1.00	-0.396

*ALL – whole sample; TTH – subgroup of patients with a tension-type headache; Migraine – subgroup of patients with a migraine;; MIDAS – Migraine Disability Assessment Test; HURT – Headache Under-Response to Treatment; CHQQ – Comprehensive Headache-related Quality of Life Questionnaire.

The values of Spearman's correlation coefficients given in bold are significant ($p < 0.05$)

Table 4

Discriminative validity: scores for the individual items, dimensions and whole MIDAS and HURT questionnaires in the tension-type headache group versus the migraine group

Item or score	TTH (mean \pm SD)	Migraine (mean \pm SD)	p^*
MIDAS			
Job absenteeism	1.16 \pm 3.42	2.96 \pm 4.90	0.008
Productivity loss at job	3.12 \pm 8.14	4.24 \pm 4.21	0.017
Incapable of housekeeping	3.63 \pm 5.28	5.00 \pm 5.63	0.185
Productivity loss at home	4.09 \pm 6.13	5.60 \pm 5.76	0.094
Avoiding social interaction	2.03 \pm 3.62	5.56 \pm 4.81	0.000
Total score MIDAS	13.88 \pm 19.16	23.12 \pm 17.47	0.001
HURT			
Headache frequency	2.59 \pm 0.98	2.93 \pm 0.73	0.037
Productivity loss	2.25 \pm 0.97	2.63 \pm 0.88	0.065
Avoiding social interaction	2.19 \pm 0.90	2.59 \pm 0.89	0.015
Taking analgesic	2.36 \pm 1.00	2.70 \pm 0.95	0.055
Efficacy of analgesic	2.18 \pm 1.03	3.63 \pm 3.86	0.001
Control of headache	2.59 \pm 1.12	3.11 \pm 1.37	0.050
Disability dimension	9.50 \pm 3.33	10.85 \pm 3.18	0.023
Treatment response dimension	4.77 \pm 2.00	6.74 \pm 4.11	0.003
Total score HURT	14.29 \pm 4.44	17.59 \pm 5.75	0.002

*TTH – subgroup of patients with the tension-type headache; MIDAS – Migraine Disability Assessment Test; HURT – Headache Under-Response to Treatment questionnaire; SD – standard deviation.

*Mann-Whitney tests; significant differences ($p < 0.05$) are marked in bold.

Dimensions of the questionnaire

In order to check whether dimensions of the questionnaires defined in the English versions corresponded to the dimensions (factors) in Serbian versions, we performed the confirmatory factor analysis of the whole sample. For the MIDAS questionnaire the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.669 and the Bartlett's Test of Sphericity was highly significant ($p = 0.000$).

Only one factor was extracted, explaining 51.3% of variability. For the HURT questionnaire the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.812 and the Bartlett's Test of Sphericity was highly significant ($p = 0.000$). After orthogonal Varimax rotation, 2 factors were extracted: the first explaining 49.6% of variance and the second explaining 23.4%. The first factor consisted of items 1–4, and it explained the headache-related disability. The second factor consisted of items 5 and 6, explaining the treatment response.

Discussion

The Serbian translations of the MIDAS and the HURT questionnaires showed a satisfactory internal consistency as whole scales (the first 5 questions of the MIDAS and the first 6 questions of the HURT) when tested of the whole sample and on the subgroup of patients with TTH. The Disability dimension of the HURT questionnaires was also highly consistent, while the Treatment response dimension did not work well in the whole sample. The validity of the instruments in all aspects (criterion, convergent and discriminant validity) was also satisfactory when whole sample and the subgroup of patients with TTH were analyzed; only the items 1 (job absenteeism) and 2 (productivity loss at job) of the MIDAS questionnaires did not correlate with the attack length, which could be explained by social differences. The majority of patients in Serbia work in still un-reformed public sector for minimal wages, where the productivity is not an issue, therefore they were not familiar with this aspect of loss¹⁴. This was probably the reason why these two items did not correlate with the attack length well, and why their impact on the disability estimate was small.

While the MIDAS questionnaire showed good internal consistency in the subgroup of patients with the migraine, the HURT one did not perform well, but this was not the consequence of inherent weakness of the HURT. First of all, the MIDAS questionnaire was originally constructed for measuring a headache-related disability only in the migraineurs⁸, and second, probably the small number of patients with the migraine (only 27) precluded the true estimate of the HURT's potential in this category of headache. The disability domain of the HURT questionnaire showed an excellent internal consistency in the migraineurs with the Cronbach's alpha of 0.937, what would likely happen if the testing was conducted on a larger sample of patients with the migraine.

When compared to the original English version¹⁵, the Serbian translation of the HURT questionnaire is not inferior (alpha of the original is 0.85) and performs similarly on pri-

mary care patients as the Arabian translation (alpha 0.74)¹⁶. The Serbian translation of the MIDAS questionnaire also has somewhat lower internal consistency than the English original (0.73 vs. 0.84)¹⁷. However, the criterion validity of both instruments was good and the convergent validity was impressive in the whole Serbian sample, since the inverse correlation with the CHQQ was mostly higher than 0.5, as well as the direct correlation between the MIDAS and the HURT themselves. The discriminant validity was good except for the questions about the productivity loss, which again shows that the full meaning of the term "productivity" is not yet clear to the majority of Serbian patients (as a matter of fact, this English term was just taken into Serbian language, since there was no appropriate Serbian word). Overall, the Serbian translations of the MIDAS and the HURT instruments could be considered as reliable and valid measurement of headache-related disability and treatment response in the patients with TTH, and probably with the migraine.

The original HURT questionnaire has two dimensions (disability and treatment efficacy)⁹, while dimensions of the MIDAS questionnaire were not reported⁸. The factor analysis of the Serbian translation of the HURT questionnaire confirmed the same two dimensions, with the same distribution of items among the dimensions as in the original. On the other hand, the factor analysis of the MIDAS questionnaire found only one factor (dimension). This was additional confirmation of usefulness of Serbian translations of the two instruments.

The main limitation of this study was the small proportion of patients with migraine in the study sample, which precluded gathering a complete picture about the HURT and MIDAS performance in the patients with migraine. This limitation was caused by the site where the study was performed – the primary healthcare facility – which reflects the higher prevalence of TTH than that of migraine in the general population^{1,18}.

Conclusion

In conclusion, the Serbian translations of the MIDAS and the HURT questionnaire appear to be reliable and valid specific instruments for measuring the headache-related disability and impact (MIDAS) and disability, impact and management (HURT) in the patients with TTH and probably in the patients with migraine. Further studies are necessary to confirm the usefulness of this instrument in the Serbian patients suffering from migraine, and to explore its suitability for other types of headache.

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