



Questionnaires used to assess the quality of life of patients with headache disorders: an integrative review

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Introduction

According to the World Health Organization, quality of life (QoL) is an individual's perception of their position in life in the context of the culture and value system in which they live and in relation to their goals, expectations, standards and concerns. Despite the subjectivity, QoL may be measured through some assessment instruments in various diseases, including migraine and other headache disorders.

Objective

This study aimed to review the main instruments used to assess the QoL of patients with headache disorders.

Method

This was an integrative literature review using articles with historical data on the main instruments used to assess the QoL of patients with migraine or other headache disorders.

Results

Six instruments for assessing QoL in patients with headache and other headache disorders were described. They were: Migraine Disability Assessment Scale (MIDAS), Headache Impact Test (HIT-6), Headache Disability Index (HDI), Migraine Specific Quality of Life Questionnaire (MSQ), Migraine Severity (MIGSEV), and Migraine Functional Impact Questionnaire (MFIQ).

Conclusion

Headache disorders can reduce patients' QoL at a personal, family, social and work level. Despite its subjectivity, this quality of life can be measured using validated assessment instruments.



Introduction

The World Health Organization (WHO) has defined Quality of Life (QoL) as an individual's perception of his or her position in life in the context of the culture and value system in which he or she lives and in relation to his or her goals, expectations, standards and concerns (1). QoL has a multidimensional character, as it encompasses different aspects, including physical, functional, and psychological and social well-being (2,3).

Currently, the term QoL is subdivided into other denominations, such as health-related QoL, which is an area of research restricted to health professionals; and QoL at work, which is a multidisciplinary domain, with researchers from different areas of knowledge (4).

Some headache disorders can last for several days and the relationship between high frequency of pain and reduced health-related QoL is well established (5). Headaches have a significant impact on patients' daily activities and QoL at a personal, family and social level, resulting in high treatment costs, as well as presenteeism and absenteeism from work (6).

Despite being a subjective activity, QoL may be measured through some assessment instruments. However, some criteria must be considered, such as the type of instrument, the psychometric properties (reliability, validity and responsiveness), and the way in which the instrument will be applied and whether it is suitable for the study (7).

These instruments, also called questionnaires, are widely used in scientific research and can be useful, among other aspects, to estimate the need for treatment, investigate the determinants of the health-disease process, and evaluate health services and QoL (8).

Given the above, patients with migraine or other headache disorders seek help from a specialist to treat not only the pain and associated symptoms, but to reduce the limitations and disabilities generated by their illness. In assessing the QoL of these patients, some instruments are used. Therefore, this study aimed to review the main instruments used to assess the QoL of patients with migraine and/or other headache disorders.

Methods

Based on a literature search in the main medical databases (LiLacs, SciELO, Bireme, Scopus, EBSCO and PubMed), we carried out an integrative review using articles with historical data on the main instruments used to assess the QoL of patients with migraine or other headache disorders, beyond its clinical application.

Results and Discussion

Six instruments for assessing QoL in patients with headache and other headache disorders were described. They were: Migraine Disability Assessment Scale (MIDAS), Headache Impact Test (HIT-6), Headache Disability Index (HDI), Migraine Specific Quality of Life Questionnaire (MSQ), Migraine Severity (MIGSEV), and Migraine Functional Impact Questionnaire (MFIQ).

Migraine Disability Assessment Scale (MIDAS)

MIDAS was developed by Richard Lipton in 1998 (9). This questionnaire is a useful tool to assess migraine disability in different domains of life over the last three months (10,11). It is a short questionnaire with simple and objective questions.

MIDAS is a validated and reliable scale. It has been extensively studied and its reliability and validity have been proven by standard methods in many countries (12,13). The three domains assessed are school/work, housework and social activities, by investigating the days in which a patient was absent or had reduced production at work and/or school.

When applying the questionnaire, the patient must answer five questions, all referring to the disability caused by their headache in the last three months. The answers, in the form of numbers, are written next to each question, ranging from 1 to 30. Enter "zero" if you have not carried out the activity in the last 3 months. The interpretation of MIDAS is quite simple. After completing the questionnaire, add up the total number of days for questions 1 to 5. Answers to questions A and B are not included in the overall score. A score of 0 to 5 is defined as minimal or no disability (grade I); 6 to 10, mild disability (grade II); 11 to 20, moderate disability (grade III); and >20, severe disability (grade IV) (Figure 1).



Migraine Disability Assessment Score (MIDAS)		
INSTRUCTIONS: Please answer the following questions about all headaches you have had in the last 3 months. Write your answer in the box next to each question. Write zero if you have not done the activity in the last 3 months.		
1	How many days in the last 3 months have you missed work or school because of your headaches?	<input type="text"/> <input type="text"/> days
2	How many days in the last 3 months has your performance at work or school been reduced by half or more because of your headaches? (Do not include the days you counted in question 1 that you missed work or school)	<input type="text"/> <input type="text"/> days
3	How many days in the last 3 months have you not done housework because of your headaches?	<input type="text"/> <input type="text"/> days
4	On how many days in the last 3 months has your housework performance been reduced by half or more due to your headaches? (Do not include the days you counted in question 3 when you did not do housework)	<input type="text"/> <input type="text"/> days
5	How many days in the last 3 months have you missed family, social or leisure activities because of your headaches?	<input type="text"/> <input type="text"/> days
TOTAL		<input type="text"/> <input type="text"/> days
A	How many days in the last 3 months have you had headaches? (If the headache lasted more than 1 day, count each day)	<input type="text"/> <input type="text"/> days
B	On a scale of 0 to 10, on average, how intense were these headaches? (Where 0 = no pain, and 10 = maximum possible pain)	<input type="text"/> days
Scoring: After completing the questionnaire, add up the total number of days for questions 1-5. Do not include answers to questions A and B in the overall score		
Grading system for the MIDAS Questionnaire		
MIDAS Degree	Definition	MIDAS Score
I	Minimal or no disability	0-5
II	Mild disability	6-10
III	Moderate disability	11-20
IV	Severe disability	>21

Figure 1. Migraine Disability Assessment Score (MIDAS).

Headache Impact Test (HIT-6)

The HIT-6 contains six items and was created with the aim of providing a global measure of headache and its impact on the patient. It is used in screening and monitoring patients with headache. The HIT-6 is useful for measuring the adverse impact of headache on functionality, vitality, cognitive function and psychological distress over a one-month period (14).

This instrument provides information for decision-making about treatment in patients with migraine. However,

although the accessibility and ease of use of the HIT-6 make it a very promising instrument, there are few data available to compare HIT-6 scores with the actual amount of disability (15).

When applying the questionnaire, the patient must answer six questions, all referring to the disability caused by their headache in the last 30 days. Possible answers are: never (6 points), rarely (8 points), sometimes (10 points), usually (11 points), always (13 points). If the total sum is greater than 50 points, you should seek a specialist (Figure 2).



Headache Impact Test (HIT-6)								
1	When you have a headache, how often is it severe?							
	Never	Rarely	Sometimes	Often	Always			
2	How often does your headache limit your ability to perform usual daily activities, including housework, work, school, or social activities?							
	Never	Rarely	Sometimes	Often	Always			
3	When you have a headache, how often do you want to go to bed?							
	Never	Rarely	Sometimes	Often	Always			
4	In the past four weeks, how often have you felt too tired to go to work or do daily activities because of your headache?							
	Never	Rarely	Sometimes	Often	Always			
5	In the past four weeks, how often have you felt sick or irritable because of your headaches?							
	Never	Rarely	Sometimes	Often	Always			
6	In the past four weeks, how often have headaches limited your ability to concentrate on work or daily activities?							
	Never	Rarely	Sometimes	Often	Always			
	+		+		+		+	
Never (6 points)		Rarely (8 points)		Sometimes (10 points)		Often (11 points)		Always (13 points)
Total score								

Interpretation of the HIT-6 Questionnaire	
HIT-6 Grade	HIT-6 Score
Never	6
Rarely	8
Sometimes	10
Often	11
Always	13
TOTAL	>50 (compromised quality of life)

Figure 2. Headache Impact Test (HIT-6).

HDI – Headache Disability Index

HDI was developed by Jacobson et al., in 1994 (16). The purpose of this scale is to identify the difficulties that the patient may be facing due to the headache, in addition to quantifying the impact of the headache on daily life (17).

At the beginning of HDI, the patient must identify how often he/she has headaches, whether only once a month; >1 but

<4 per month; or >1 per week. In addition to identifying the intensity of the pain, whether it is mild, moderate or severe. Then there are 25 questions with three possible answers: “yes” (4 points), “sometimes” (2 points) and “no” (zero points). At the end of the test, the overall sum is calculated and the result can be used to classify the degree of disability. If the score is between 10 and 28, the disability is mild; from 30 to 48, moderate disability; from 50 to 68, severe disability; and >72, complete disability (Figure 3).



Headache Disability Index (HDI)			
CIRCLE the correct answer:			
I have a headache:	(1) One per month	(2) >1 but <4 per month	(3) >1 per week
My headache:	(1) mild	(3) moderate	(3) severe
INSTRUCTIONS: The purpose of the scale is to identify difficulties you may be experiencing because of your headaches. Mark "YES", "SOMETIMES" or "NO" for each item. Answer each question as it relates only to your headache.			
	Yes	Sometimes	No
01. Due to my headaches, I feel incapacitated.			
02. Due to my headaches, I feel restricted in carrying out my routine daily activities.			
03. No one understands the effect my headaches have on my life			
04. I restrict my recreational activities (e.g., sports, hobbies) because of my headaches			
05. My headaches make me angry			
06. Sometimes I feel like I'm going to lose control because of my headaches			
07. Due to my headaches, I am less likely to socialize			
08. My partner, family and friends have no idea what I'm going through because of my headaches			
09. My headaches are so bad I think I'm going to go crazy			
10. My world view is affected by my headaches			
11. I'm afraid to go out when I feel a headache coming on			
12. I feel desperate because of my headaches			
13. I am worried that I am paying fines at work or at home because of my headaches.			
14. My headaches put stress on my relationships with my family or friends			
15. I avoid being around people when I have a headache.			
16. I believe my headaches are making it difficult for me to achieve my goals in life.			
17. I can't think clearly because of my headaches			
18. I feel tense (e.g. muscle tension) because of my headaches			
19. I don't like social gatherings because of my headaches			
20. I feel irritable because of my headaches			
21. I avoid traveling because of my headaches			
22. My headaches make me feel confused			
23. My headaches make me frustrated			
24. I find it difficult to read because of my headaches			
25. I find it difficult to focus my attention away from my headaches and onto other things			
Scoring: If "YES" is marked on any line, the answer will receive 4 points; if "SOMETIMES", the answer will receive 2 points; and if "NO", the answer will receive zero. At the end, the overall sum is made and through the result, we can classify the degree of incapacity.			
Degree of incapacity	HDI Score		
mild	10-28		
moderate	30-48		
severe	50-68		
complete	>72		

Figure 3. Headache Disability Index (HDI).

Migraine Specific Quality of Life Questionnaire (MSQ)

MSQ is a migraine-specific quality of life questionnaire (18,19). It is recommended to assess changes in QoL related to episodic migraine. This instrument has 14 items

and includes a global scale and three subscales (Figure 4). The Role Function Physical subscale has been accepted by the U.S. Food and Drug Administration and is included in product labeling (20).



While answering the following questions, please think about all migraine attacks you may have had in the past 4 weeks.

1. How often have migraines interfered with how well you dealt with family, friends and others who are close to you?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 2. How often have migraines interrupted with your leisure time activities such as reading or exercising?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 3. How often have you had difficulty in performing work or other daily activities?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 4. How often have migraines kept you from getting as much accomplished as you normally do at work or at home?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 5. How often have migraines limited your ability to work or do other activities as carefully as you usually do them?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 6. How often have you had to cancel or delay work or social activities because you were exhausted?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 7. How often have migraines left you with limited energy levels?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always (Score -7)*100/35

 8. How often have you had to stop work or other activities?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 9. How often have you needed the help of other people in handling routine tasks such as everyday household chores, doing necessary business, shopping, or caring for others when you had a migraine attack?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 10. How often have you avoided social or family activities to treat your migraine attacks?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 11. How often has it been difficult for you to go to social events such as parties?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always (Score-4)*100/20

 12. How often have you felt fed up or frustrated?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 13. How often have you felt like you were a burden on others?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always
 14. How often have you been afraid of letting others down?
 ⑥ Never ⑤ Rarely ④ Sometimes ③ Pretty ② Almost ① Always (Score-3)*100/15
- Total Score**

Figure 4. Migraine Specific Quality of Life Questionnaire (MSQ).

Currently, this instrument is being used in clinical trials to assess quality of life in patients with migraine and cluster headache (21,22). The MSQ is a reliable and valid questionnaire in the CM population that can differentiate the functional impact between CM and EM. The MSQ can assist researchers in evaluating treatment effectiveness by obtaining input directly from the patients on multidimensional aspects other than frequency of headache days (20).

Migraine Severity (MIGSEV)

This questionnaire was developed by El Hasnaoui et al.(23), to assess the severity of pain in different migraine attacks. It was validated in a pilot study of 287 migraineurs, and showed good metrological properties in terms of reliability, reproducibility and sensitivity (24). There are seven items that reflect the severity of pain, namely: pain intensity,



tolerability, inability to perform daily activities, presence of nausea or vomiting, resistance to treatment, duration of attacks and frequency of attacks (23).

Migraine Functional Impact Questionnaire (MFIQ)

MFIQ is a 26-item self-administered instrument for assessing the impact of migraine on physical functioning, usual activities, social functioning and emotional functioning in the last 7 days (25,26). This questionnaire was developed by Amgen, Inc., Thousand Oaks, CA, USA, and despite FDA approval, is not widely used.

Conclusion

Headache disorders can reduce patients' QoL at a personal, family, social and work level. Despite its subjectivity, this quality of life can be measured using validated assessment instruments.

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