

Patient-Perceived Difficulties with Swallowing: A Research Study Using the EAT-10 Tool

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ABSTRACT

Objective: The aim of the study was to determine the frequency of patient-perceived swallowing difficulties in clients of after-care centres, with the help of the Eating Assessment Tool (EAT-10). Furthermore, the study investigated time demands associated with the administration of the tool in practice.

Methods: The tool EAT-10 was translated into Czech and its comprehensibility verified in a pre-test. The tool was then used to interview respondents at 5 after-care centres. Prior to the interview, a cognitive function screening was carried out, using the Mini-Cog test to eliminate clients with poor cognitive function from further testing.

Results: The study included 117 respondents aged 65 years and older, of which 104 passed the Mini-Cog Test. More than half of them (58) reported difficulty swallowing. The EAT-10 tool was administered in 4–5 minutes per respondent.

Conclusion: Subjective swallowing difficulties are a frequent problem for clients of after-care centres. The tool EAT-10 serves to collect basic data about swallowing in these clients.

KEY WORDS

EAT-10, cough, Mini-Cog, swallowing difficulties, food intake

INTRODUCTION

Swallowing difficulties may include swallowing of saliva, liquids, food of various consistency, and pills. These difficulties are caused by various reasons – they may emerge in connection with an impaired swallowing mechanism, with neurological, gastrointestinal or other problems such as accidents, infections, tumours, etc. The prevalence of swallowing problems grows with the age; in the elderly the prevalence is up to 50%. (Tedla et al., 2009, pp. 18 and 21) Swallowing difficulties may lead to many complications such as dehydration, malnutrition, aspiration of food and related aspiration pneumonia. (Mandysova et al., 2011) Furthermore, avoiding meals with family and friends may lead to social isolation.

Rapid diagnosis is facilitated through simple and inexpensive screening methods. These usually focus on basic physical examination, the presence of particular symptoms, trial swallowing of water and food. (Tedla et al., 2009, pp. 134, 218 and 233) The assessment of the client is carried out by nurses.

In contrast, there are also patient-perception methods where clients evaluate their own swallowing

function. These methods help identify whether the client has difficulty swallowing. Based on the results, a swallowing check-up using objective methods may be planned or the patient's diet is adapted to minimize the swallowing difficulties. One of the subjective methods is the Eating Assessment Tool (EAT-10). This interview-based tool was developed in the USA in 2008 by a team of experienced professionals dealing with swallowing disorders. It was built on a research study of a group of 481 adult respondents. (Belafsky et al., 2008, p 919)

The tool was developed in 4 stages. The first stage involved experts of otolaryngology, gastroenterology, speech therapy, pathology, and nutrition designing a total of 35 questions. Of them, based on the number of votes, 20 questions were selected, creating the EAT-20 tool. In the second stage, the tool was administered to 2 respondent groups – healthy people and people with swallowing and voice disorders – based on the results, 10 questions were eliminated for being excessive and of the lowest reliability. The ten remaining questions were then processed into the final version of EAT-10. In the third stage, the EAT-10 was tested

on a set of healthy volunteers and its rating scale 0–4 (0 = no problem, 4 = severe problem) was established. The last stage involved identifying the test-retest reliability and the criterion validity. Reliability for each question of the tool ranged from 0.72 to 0.91. According to the authors, the criterion validity was excellent (CV was determined by comparing the EAT-10 scores in patients with dysphagia and in healthy people, and by comparing the EAT-10 scores in patients before and after the treatment of dysphagia). (Belawsky et al., 2008, pp. 920–923)

OBJECTIVE

The principal objective of the research was to use the EAT-10 to ascertain which patient-perceived swallowing difficulties occur in clients aged over 65 and hospitalized in after-care facilities and of what frequency. Another objective was to verify the usefulness of the EAT-10 tool in clinical practice by measuring the time required for the administration of the tool.

PARTICIPANTS AND METHODS

The research sample was acquired through non-random selection. Inclusion criteria were: age ≥ 65 , a signed informed consent, and a score of minimum 3 points in the Mini-Cog cognitive screening (it uses a three-item recall test for memory and a simply scored clock-drawing test, its sensitivity is 76–99% and specificity 89–93%). (Doerflinger, 2007)

The survey was carried out from June 2010 to August 2010. A total of 117 respondents of five after-care centres in the Pardubice, Hradec Králové, and Ústí nad Labem regions completed the cognitive screening. The largest group were respondents aged 80 to 84 (40 cli-

ents), the second largest a group of respondents aged 85 to 89 (28 clients), the third a group aged 75 to 79 (24 clients), the fourth a group aged ≤ 74 (16 clients), and the smallest group comprised respondents aged ≥ 90 years (9 clients). Only 104 respondents (27 men and 77 women), however, answered the questions in the EAT-10 tool, given that 13 of the respondents had failed the cognitive screen, which eliminated them from the research group.

This descriptive research survey consisted of a standardized interview based on the EAT-10 tool with respect to food intake. (Belawsky et al., 2008) Table 1 shows the EAT-10 questionnaire. (Belafsky et al., 2008, p 919) The survey was preceded by a pre-test of 24 respondents aged over 65 that established that all the questions in the EAT-10 were comprehensible. This pre-test also served as a training of four researchers (students of a nursing master's programme), who collected the data.

The researcher read the EAT-10 questions to the respondent and marked down the answers. This enabled the inclusion of clients who would not otherwise have been able to complete the test themselves due to their impaired vision. An EAT-10 score of 1 or higher indicated subjective difficulties with swallowing.

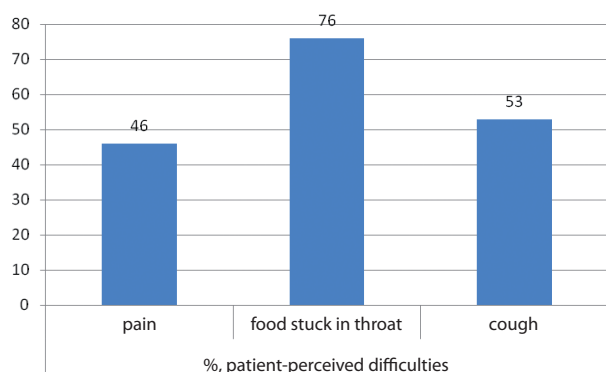
RESULTS

Of the total of 104 respondents, 58 reported having swallowing difficulties. The most commonly perceived problems were cough in 35 clients (60%), difficulty with swallowing solids in 26 clients (45%) of clients, and difficulty with swallowing pills in 24 clients (41%). Six respondents reported that swallowing affected their pleasure of eating, while the problem of the lowest im-

Tab. 1 Eating Assessment questionnaire (EAT-10)

To what extent do you experience the following problems:	0 = no problem 4 = severe problem				
1 My swallowing problem has caused me to lose weight.	0	1	2	3	4
2 My swallowing problem interferes with my ability to go out for meals.	0	1	2	3	4
3 Swallowing liquids takes extra effort.	0	1	2	3	4
4 Swallowing solids takes extra effort.	0	1	2	3	4
5 Swallowing pills takes extra effort.	0	1	2	3	4
6 Swallowing is painful.	0	1	2	3	4
7 The pleasure of eating is affected by my swallowing.	0	1	2	3	4
8 When I swallow food sticks in my throat.	0	1	2	3	4
9 I cough when I eat.	0	1	2	3	4
10 Swallowing is stressful.	0	1	2	3	4
Total EAT-10:					

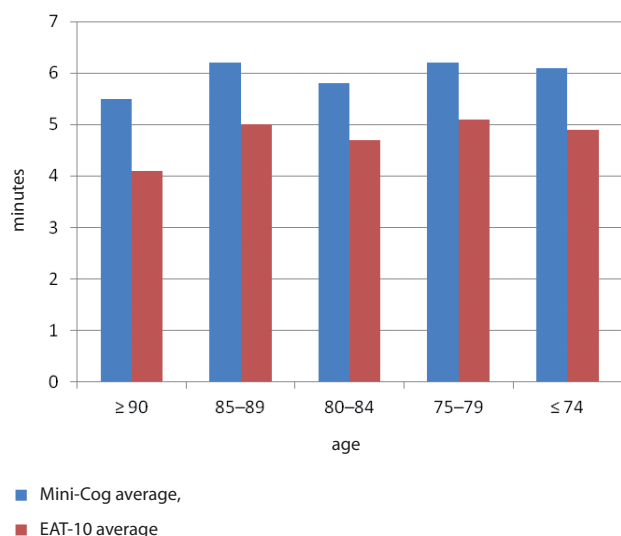
portance was loss of weight caused by difficulties with swallowing (3 clients). In addition, the research looked into the links between the EAT-10 questions (Graph 1).



Graph 1 Relative frequency of the feeling of pain, food stuck in the throat, and cough when swallowing in respondents who subjectively perceived difficulties when swallowing solids (%)

Difficulties with swallowing solids were reported by a total of 26 respondents, of whom 12 (46%) also felt pain when swallowing, 20 (76%) suffered from food sticking in their throat when they swallowed, and 14 (53%) respondents reported cough while eating.

The time that was required to perform the Mini-Cog and EAT-10 was measured by the researcher (Graph 2).



Graph 2 Duration of the Mini-Cog and EAT-10 (in mins) based on age category.

On average, the time required to complete the Mini-Cog test was approx 6 minutes for all age groups. Average time of the administration of the EAT-10 varied for individual ages; clients aged 75–79 required the longest time to complete the questionnaire (5.1 minutes on av-

erage), while respondents aged 90 and older required the least time (4.1 minutes on average). Consequently, the time required for the completion of the EAT-10 ranged from 4 to 5 minutes.

DISCUSSION

This research survey identified self-perceived food intake problems in clients of after-care centres.

No studies investigating the frequency of patient-perceived swallowing difficulties that would use the EAT-10 were found as of December 2010 in available literature (Medline, CINAHL, EBSCOhost, ProQuest, Gale PowerSearch), which could serve as comparison with the results of this investigation. However, the frequency of subjectively perceived difficulties with swallowing observed in the respondents (55.8%) corresponds to the frequency of the problem in the elderly in general, as described in literature by e.g. Tedla et al. (2009, p 21) Hence, the problem is fairly common, and yet, as experts report, people often fail to consult their swallowing difficulties with the healthcare staff. (Roy et al., 2007, p 858)

When studying the links between the individual difficulties, it was established that the perception of difficulties with swallowing solids is not always associated with the perception of other severe symptoms, such as pain and cough in swallowing or food becoming stuck in the throat. On the other hand, the results point to the fact that many clients often perceive more than one type of problems with swallowing. It is therefore necessary to assess each person individually.

In terms of time demands, the administration of the EAT-10 is realistic due to the fact that with the help of healthcare staff, the completion of the questionnaire takes 4–5 minutes.

The survey was limited by the fact that the correctness of the clients' statements was not verified (e.g. by observing the client eating or through a physical examination of the swallowing function). Additionally, the EAT-10 does not clearly state whether to evaluate only the current situation or the past condition as well – each respondent could therefore view the difficulties with swallowing from a different time perspective and thus give different responses.

CONCLUSION

Healthcare professionals, including nurses, need to pay due attention to the clients' food intake. Swallowing difficulties are not always easy to observe (e.g. pain on swallowing), but the information can be generated using self-perception methods, such as the EAT-10.

As the EAT-10 tool was designed recently, future research could focus on its application with other

groups of respondents (e.g. patients with neurological disorders, or other age groups than the elderly). Research could also centre on the ability of respondents to complete the questionnaire independently, without the help of medical staff, which would reduce the time demands on the staff.

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