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A cross-border educational session promoting nursing dysphagia screening in Greece: A pilot study

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ABSTRACT

Aim: Dysphagia is a common and potentially serious problem in patients with neurological conditions. In many countries, dysphagia screening is used, which contributes to better patient outcomes. In Greece, the implementation of dysphagia screening has not yet been described. The aim was to examine the effectiveness of an educational session delivered to Greek masters-level nursing students and their faculty on the correct use of an 8-item nursing dysphagia screening instrument developed in the Czech Republic.

Methods: Fifteen students and nursing faculty members of the Technological Educational Institute of Athens were enrolled in this descriptive pilot study. They were educated on dysphagia in a session consisting of a theoretical and practical part and a discussion. The participants were asked to indicate their clinical experience with dysphagia and their opinion on the importance of nurses' involvement in dysphagia assessment. Their knowledge of the screening procedure and interpretation and documentation of the result was tested using a hypothetical patient case.

Results: In this study, 4 (27%) participants had prior experience with patients with dysphagia. All of them thought that nurses' involvement in dysphagia assessment was very important. Slightly more than half of the participants identified, interpreted, and documented all of the 8 item results correctly.

Conclusion: The participants were motivated to learn, however, complete mastery of the assessment technique was not achieved. The learning experience was affected by several issues that were unique to Greece, and the participants' efforts focused on understanding how the new knowledge and skills could affect their daily practice. Direct ongoing support in the clinical setting could be beneficial.

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Introduction

Dysphagia is a highly prevalent and potentially very serious complication of various neurological conditions that can lead to aspiration pneumonia and even death [1, 2]. Dysphagia (impaired swallowing) can be broadly defined as “abnormal functioning of the swallowing mechanism associated with deficits in oral, pharyngeal, or oesophageal structure or function” [3]. Dysphagia screening enables an early identification of patients who are at risk of oropharyngeal dysphagia (abnormality in the oropharyngeal swallowing system) and aspiration (subglottic penetration of food or liquid) [4]. As a result, dysphagia screening facilitates the appropriate dysphagia management and can lead to better patient outcomes [5]. To this end, a variety of screening instruments have been developed.

Some instruments are intended only for patients with a stroke [4, 6]; other instruments can be used for patients with various neurological conditions [1], and still others can be used for patients with a range of conditions or for older patients [7, 8]. This is largely dependent on the study that led to the development of a given screening instrument and the type of patients enrolled in it. As for strokes (which are one of the most frequent neurological conditions leading to dysphagia), a number of countries in Europe, North America, and elsewhere have developed specific guidelines for dysphagia diagnosis and management. Typically, such guidelines recommend that patients with an acute stroke should undergo dysphagia screening within 4–24 h of hospital admission, before being given any food, fluid, or medication [9, 10]. Therefore, most research studies have focused on the development of screening instruments for patients with strokes [7].

The design of such research studies is based on comparing various “bedside” assessment items against an “objective” reference test (a gold standard) that is used to determine the presence or absence of dysphagia. The two most widely recognized gold standards are videofluoroscopy and flexible endoscopic examination of swallowing (FEES). Based on this comparison, the most suitable bedside assessment items are selected for inclusion in the newly developed dysphagia screening instrument [11]. At the same time, the validity of such instruments is reported mainly in terms of their sensitivity and negative predictive value. This is due to increased morbidity and mortality associated with untreated dysphagia, which necessitates requirements for low false-negative results [4, 12].

Regardless of the type of patients they are used for, dysphagia screening instruments are typically based on observing the patient and conducting a very simple assessment focused on the patient’s swallowing function. Some instruments are very straightforward and consist solely of one item – direct testing of swallowing. However, specific swallowing test protocols vary: some screening instruments use only water; in other cases, fluids of various consistencies and volumes are used [4]. For example, there is the 3-oz water swallow test, originally developed for patients with a stroke [13], the clinical utility of which

was later extended to include a wide range of medical and surgical diagnostic categories [14]. This test requires that patients drink the entire amount of water without interruption; at the same time, they are observed for coughing or the development of a wet hoarse voice [7]. The 50ml water swallow test, also intended for patients with strokes, aims to assess desaturation during swallowing (the patient swallows the required amount in 5ml aliquots) and phonation and choking afterwards [15]. Another 50ml water swallow test for patients with strokes requires that patients be tested for coughing in addition to choking and phonation after each 5ml swallow; they are not however tested for the presence of desaturation [16]. Other instruments are more complicated and include not only a swallow test but also a variety of other clinical assessment items that focus on the swallowing function, e.g. volitional cough, gag reflex, dysarthria, or dysphonia [4].

At present, the most effective combination of screening instrument items remains unknown, and no single instrument has been identified through controlled clinical trials as being superior to others [7, 11, 17]. This somewhat unsettling situation applies even to patients with strokes despite a big emphasis on research involving these types of patients. Meanwhile however, evidence has been mounting that unscreened patients are at greater risk of aspiration pneumonia than those who pass dysphagia screening [7, 17].

Ideally, dysphagia screening is simple and quick; it can be administered by a trained nurse due to her 24-h presence at the bedside. A positive (abnormal) screening result prompts a further, more detailed assessment of the swallowing function by other members of the multidisciplinary dysphagia team [1, 9]. In other words, the aim of dysphagia screening is to expedite a referral to other members of the multidisciplinary team as needed. From this perspective, some experts even differentiate between “dysphagia screening” and “dysphagia assessment”. Donovan et al. define dysphagia screening as a “pass/fail procedure to identify individuals who require a comprehensive assessment of swallowing function” that can be clinical or even instrumented [17]. In other words, dysphagia screening initiates the diagnostic cascade; however, a positive screening result (i.e., “failed” screening) does not necessarily mean that the patient has dysphagia.

Nursing involvement in establishing the diagnosis of dysphagia is not a new idea; in fact, “impaired swallowing” is a nursing diagnosis recognized by NANDA International (NANDA-I). The diagnosis consists of up to 51 defining characteristics, observable cues that cluster as manifestations of the diagnosis (signs and symptoms) and 28 related factors (aetiologies, circumstances, facts or influences that have some type of relationship with the nursing diagnosis) [3]. Therefore, establishing this particular nursing diagnosis using the NANDA-I diagnostic process can be quite time-consuming. As a result, some nursing experts recommend using dysphagia screening rather than the NANDA-I process [18, 19]. Still, to a certain extent, both approaches overlap and focus on patient assessment. However, the NANDA-I process requires that nurses validate nursing diagnoses through additional, in-depth assessment, whereas the above described dysphagia

screening process stresses multidisciplinary collaboration as the diagnosis is being confirmed or ruled out [3, 4].

In many countries, however, nurses lack the required knowledge and skills concerning dysphagia diagnosis and management, which compromises their ability to collaborate effectively with other members of the team [20, 21, 22]. As for Greek nurses, the above mentioned knowledge and skills gap is magnified by the fact that assessment instruments are rarely used to guide clinical practice. Nonetheless, the value of dysphagia screening has been mentioned in the Greek nursing literature [23]. This type of screening is urgently needed especially in neurological patients due to the fact that they commonly suffer from oropharyngeal dysphagia [4, 11].

The first aim of the present pilot study was to assess the subjectively perceived importance of Greek nurses' involvement in dysphagia assessment and their personal experience with providing care to patients displaying dysphagia signs and symptoms. The second aim was to study the effectiveness of a dysphagia screening educational session delivered to a group of Greek masters-level neurological nursing students and their nursing faculty members.

Materials and methods

Study setting and design

The study took place in December 2015 at the Technological Educational Institute (TEI) of Athens in Greece, Faculty of Health and Caring Professions. A descriptive research design was used. Participants were second-year students enrolled in a two-year post-graduate (masters-level) programme called *Neurological Disorders – Contemporary Evidence Based Practice*, and their nursing faculty members. A total of 15 participants (10 students and 5 nursing faculty members) attended an educational session on the dysphagia assessment of patients with a neurological condition, with an emphasis on the use of an 8-item dysphagia screening test developed in the Czech Republic. The participants responded to questions concerning their clinical experience with patients who have dysphagia, and gave their opinion on the importance of nurses' involvement in dysphagia assessment, and the dysphagia screening procedure.

Instrument

The educational session focused on the correct administration of the 8-item Brief Bedside Dysphagia Screening Test-Revised (BBDST-R) [11]. The BBDST-R is a valid, yet simple nursing tool developed in the Czech Republic that is intended for dysphagia screening in patients with neurological conditions. The eight items are: a) *presence of a voluntary cough*, b) *ability to clench the teeth*, c) *tongue symmetry and strength*, d) *symmetry and strength of the facial muscles*, e) *shoulder shrug symmetry and strength*, f) *dysarthria*, g) *aphasia*, and h) *thick liquid: cough*.

The BBDST-R was developed by expanding a pilot study that led to the creation of the 8-item Brief Bedside Dysphagia Screening (BBDS) Test [24]. Five of the BBDST-R items had already been included in the original BBDS Test. However, two of the items were new (*presence of a voluntary cough and aphasia*). On the other hand, two items contained in the BBDS Test are not part of the BBDST-R (*thick liquid: choking and thick liquid: dripping from the mouth*) [11, 24].

The procedure used to assess the patient in the BBDST-R items was described by the authors of the instrument [11]. For each item, the result is either normal (=0 points) or abnormal (=1 point); the individual scores are summed up in order to obtain the overall result. The patient passes the screening test if the overall result is 0 (all items are normal). If the overall result is ≥ 1 (at least one item is abnormal), the patient “fails” the screening test [11].

Procedure

The educational session took place in a classroom setting, on the premises of the TEI of Athens in Greece. It was delivered in English, by the first author of the BBDST-R. The educational session took approximately 180 min and it consisted of a theoretical part (90 min) and a practical part (90 min). The theoretical part focused on some of the main aspects of dysphagia (e.g., basic anatomy and physiology of swallowing, dysphagia prevalence, complications, swallowing assessment, and the nurse's role). The practical part focused on explaining the 8-item BBDST-R, its role in the dysphagia diagnostic process from a multidisciplinary perspective, the screening test procedure, and on interpreting and documenting the screening test result. Two teaching methods were used to explain the correct screening procedure: a PowerPoint presentation that included photographs depicting individual item assessments of a hypothetical patient, followed by a demonstration of the assessments on a standardized patient (SP). In some countries, simulation by means of SPs is a fairly frequent method employed in nursing education. Sideras et al. have explained that the Association of Standardized Patient Educators defines SPs as “*individuals (...) trained to portray a patient with a specific condition in a realistic, standardized and repeatable way... [They] can be used for the teaching and assessment of learners, including physical examination and other clinical skills in simulated clinical environments... [SPs] can also be used to give feedback and evaluate student performance*” [25]. In our study, the SP was one of the co-authors of the BBDST-R, who was familiar with the screening procedure. Subsequently, the participants engaged in hands-on practice with their peers. The educator and the simulated patient provided immediate feedback, with the aim of correcting any possible inaccuracies in item assessments. Throughout the interactions, the participants were encouraged to ask questions and to discuss any aspect of the content of the educational session and other related issues.

Before the educational session began, the participants responded to a questionnaire concerning their clinical experience with patients displaying dysphagia signs and symptoms (by selecting either *yes*, *no* or *do not know*) and were asked for their opinion on the importance of nurses'

involvement in dysphagia assessment, using a 5-point Likert scale (0 = *very unimportant*, 5 = *very important*). The participants were not provided with any definition of “dysphagia assessment”; they were the ones to decide whether they felt they had been involved in finding out about patients’ dysphagia signs and symptoms. The participants’ opinion on the importance of nurses’ involvement in dysphagia assessment was sought again after the theoretical and practical part of the educational session, using the same question.

The participants’ knowledge of the screening procedure, and interpretation and documentation of the result was tested by means of a blank BBDST-R documentation form that the participants were to fill out. Using a PowerPoint presentation, the participants were shown photographs of a hypothetical patient case, i.e., the patient’s assessments and/or a brief description of the findings obtained for each of the eight items. The participants were to decide which of the eight items was being tested (the order of the assessments did not correspond to the order of items on the blank BBDST-R documentation form) and whether the result was normal or abnormal. At the same time, they were to record the findings on the provided documentation form.

Data analysis

The data were analysed in Microsoft Excel 2010 (Microsoft, 2010), using descriptive statistics. As for the participants’ knowledge of the screening procedure, documentation, and interpretation, the participants obtained one point for each correctly identified, interpreted and documented item, regardless of whether or not the result was normal (in fact, the presented hypothetical patient had 6 abnormal items). Because the screening test consists of 8 items, the highest possible score that a participant could obtain was 8 points (100%). Furthermore, for each BBDST-R item, it was ascertained how many participants obtained a correct/incorrect result.

Ethical considerations

Prior to the educational session, written permission to conduct the study was obtained from the scientific coordinator of the mentioned nursing programme. At the beginning of the educational session, the purpose of the study was explained to the participants, both verbally and in writing. It was explained to them that the study was anonymous and voluntary and that there were no anticipated risks in their participation. In addition, it was explained that they were free to skip those questions that they did not want to answer and that they could withdraw from the study at any time without any consequences. Finally, it was explained that the completion and return

of the questionnaire would constitute their consent to participate in the study. The educator and study author was not involved in the collection of the completed questionnaires.

Theory

Because a number of the study participants were employed mature students and were nursing faculty members with many years of nursing experience, the educational session was approached from the perspective of adult learning. Specifically, Lindeman’s key assumptions about adult learners, which constitute the foundation of adult learning theory, guided the development of the educational experience and the study. Lindeman’s assumptions are: a) adults experience needs and interests that will be satisfied through learning, which motivates them to learn; b) adults’ approach to learning employs life situations (not subjects); c) the richest resource is the adult learner’s experience; d) adults need to feel self-directing, and the educator engages in a process of mutual inquiry with them; e) individual differences among people increase with age, and educators need to adjust their approach in order to accommodate individual differences [26].

In line with the theory, the study focused on the learners’ prior experience and their opinion on the importance of the topic (i.e., their needs and interests). Discussions and comments were encouraged, which created an environment of mutual inquiry. Some of the discussions were directly linked to the participants’ clinical experience and work situation, making it highly relevant. The pace was as flexible as possible in order to accommodate individual differences in age and experience but also in the participants’ English-language skills (translation into Greek by some of the participating nursing faculty members was used to support the explanation of some aspects of the topic during the educational session as needed).

Results

Fifteen participants completed the questionnaire concerning their clinical experience with patients with dysphagia. Furthermore, they expressed their opinion on the importance of nurses’ involvement in dysphagia assessment. The questionnaire was administered before the educational session (the first questioning) (Table 1). The part focusing on the participants’ opinion on the importance of nurses’ involvement in dysphagia assessment was repeated after the theoretical part of the educational session (the second questioning; $n = 15$) and after the practical part (the third questioning; $n = 14$) (Table 1).

Table 1 – Clinical experience with patients with dysphagia and opinions on the importance of nurses' involvement in dysphagia assessment (n = 15)

Participant	Experience	Opinion – first questioning	Opinion – second questioning	Opinion – third questioning
1	No	5	5	5
2	Yes	4	5	5
3	No	3	5	5
4	Yes	5	5	5
5	Yes	5	5	5
6	No	5	5	5
7	No	5	5	5
8	No	5	5	5
9	No	5	5	5
10	No	4	4	5
11	No	5	5	5
12	No	5	5	5
13	Yes	5	5	5
14	No	5	5	–
15	No	5	5	5

Of the 15 participants, 4 (27%) had experience with patients who had displayed dysphagia signs and symptoms. As for opinions on the importance of nurses' involvement in dysphagia assessment existing before the educational session began (in the first questioning), 12 participants indicated that nurses' involvement was *very important* (5 points on a 5-point Likert scale). Two participants expressed the importance using 4 points and one participant using 3 points. In the second questioning, 14 participants indicated that nurses' involvement was *very important* (5 points were allocated); one participant expressed the importance using 4 points. In the third questioning, all 14 (100%) participants were of the opinion that nurses' involvement in dysphagia assessment was *very important*.

As for the knowledge of the BBDST-R screening procedure, interpretation, and documentation, 13 participants completed and returned the documentation form (Table 2). Seven (54%) participants identified, interpreted, and documented all 8 item results correctly, achieving 8 points. Five (38%) participants identified, interpreted, and documented 6 items correctly, and 1 (8%) participant did so for 5 items.

From the perspective of individual items, 5 items were identified, interpreted, and documented correctly by all 13 (100%) participants (Table 2). The items were: *tongue symmetry and strength*; *shoulder shrug symmetry and strength*; *dysarthria*; *aphasia and thick liquid: cough*. For one item, *the tongue is symmetrical and strong*, the hypothetical patient exhibited a normal finding, meaning that the participants were to record "0" (normal result) on the documentation form. For the remaining four items, abnormal results were shown, and the participants were to record "1" (abnormal result) on the documentation form. One item was identified, interpreted, and documented correctly by 11 (85%) participants. The item was the *presence of voluntary cough*; an abnormal result was to be

recognized and documented (as "1" on the documentation form). Items *ability to clench the teeth* (a normal finding was shown) and *the facial muscles are symmetrical and strong* (an abnormal finding was shown) were identified, interpreted, and documented correctly by 8 (62%) and 7 (54%) participants, respectively.

Discussion

Overall, only several participants had clinical experience with patients with dysphagia, although the group included mature learners (nurses) who were, in other respects, experienced clinicians. However, dysphagia-related knowledge and skill deficits in Greece are not only confined to nursing. Other health care professionals properly trained in dysphagia diagnosis and management, such as speech language pathologists, are lacking even in university hospitals [27].

Furthermore, the situation in Greece is complicated due to a rota system for hospital emergencies, which means that hospitals rotate so they are on 24-h duty for admitting new cases [28]. In other words, for a given 24-h period, only the designated hospital in a given city admits new patients, while the remaining hospitals in the city provide only continuing care to hospitalised patients. In Athens, for example, the hospitals are on call every 4th day. This system can create a number of challenges, some of which have been mentioned in the professional literature [28]. Specifically, expertise (e.g. dysphagia screening by trained nurses) available in just one particular hospital could be used only during the on-call period. On other days, the same expertise could not be used, the sole reason being that the hospital with trained nurses would not be on call. Such a system, then, does not create the best conditions for timely dysphagia assessment across hospitals.

Table 2 – Knowledge of the BBDST-R [11] screening procedure (n = 13)

Participant	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Total
1	0	1	1	0	1	1	1	1	6
2	1	1	1	1	1	1	1	1	8
3	1	1	1	1	1	1	1	1	8
4	1	1	1	1	1	1	1	1	8
5	1	1	1	1	1	1	1	1	8
6	1	0	1	0	1	1	1	1	6
7	1	1	1	1	1	1	1	1	8
8	1	0	1	0	1	1	1	1	6
9	1	0	1	0	1	1	1	1	6
10	0	0	1	0	1	1	1	1	5
12	1	0	1	0	1	1	1	1	6
13	1	1	1	1	1	1	1	1	8
15	1	1	1	1	1	1	1	1	8
Item correctly (n)	11	8	13	7	13	13	13	13	
Item correctly (%)	84.6	61.5	100.0	53.8	100.0	100.0	100.0	100.0	

As for the current study, the subjectively perceived importance of nurses' involvement in dysphagia assessment gradually grew, and by the end of the educational session, all the participants felt that nurses' involvement was *very important*. However, the same opinion was expressed by most participants even before the educational session started.

From the perspective of Lindeman's assumptions about adult learners, the above findings suggest that the participants experienced a need and interest to learn about dysphagia, which motivated them to learn. In fact, their motivation became quite apparent through their high level of engagement in the educational session (e.g., willingness to participate in hands-on practice; asking questions and engaging in discussions relevant to their clinical practice). This engagement in mutual inquiry – rather than a transmission of knowledge by the educator and an expectation of conformity – was an important strategy that aimed to enhance adult learning.

Over half of the participants were able to correctly identify, interpret, and document all the item assessments of the hypothetical patient. The remaining participants did so for approximately three quarters of the items. Some difficulties were encountered in assessing three items: *presence of a voluntary cough*, *ability to clench the teeth*, and *the facial muscles are symmetrical and strong*. For two of these items an abnormal result was shown, and for one item a normal result was shown. It appeared, however, that showing an abnormal result did not make the question more difficult. After all, among the five items that were correctly identified, interpreted, and documented by all the participants, four items were abnormal.

As for the item *presence of a voluntary cough*, all the participants recognized that it was this particular item that was being tested. However, some of them had problems with item interpretation and documentation. This could have been caused by a language barrier as the participants

needed to assess the meaning of the following sentence shown together with the photograph of the assessed hypothetical patient: *"The patient only clears her throat (the cough is superficial)."* Obviously, a correct interpretation requires that the participants understand the sentence.

In contrast, the other two problematic items were not always correctly identified. Several participants actually swapped the two items, thinking that they were observing the item *ability to clench the teeth* – when in fact the item presented was *the facial muscles are symmetrical and strong* and vice versa. In all probability, this was caused by the fact that the assessments of both items focus on the patient's face. However, the item *ability to clench the teeth* includes palpation of the face by the nurse (which was clearly depicted in the photograph) whereas the item *the facial muscles are symmetrical and strong* requires only observation. It appears that more practice would have been needed to reinforce the differences in the assessments of these two items.

It is worthwhile to mention a Czech study that included an educational session taking place in 2012 and focusing on the earlier Czech version of the BBDST-R [29]. The earlier Czech version contained the same items as the final English version, and the content of the session was similar to the content of our study as well. On the other hand, the Czech participants included only masters-level students ($n = 54$) enrolled in a nursing or perioperative care in gynaecology and obstetrics study programme, and did not include any mature nurses. The teaching method was somewhat different in that it included a video rather than a standardized patient. In addition, the participants' learning was assessed by a combined-response post-test, not by using the case of a hypothetical patient.

Despite the mentioned differences between both studies, it is useful to compare the results of the Czech study and the current study. The results overlap to a certain extent; however, important differences have emerged as

well. In both studies, the participants had difficulty with the item *ability to clench the teeth*. In the Czech study, only slightly more than half of the participants answered this item correctly [29]; the possible reasons were not mentioned. Unlike the Greek participants, the Czech participants did not mistakenly swap this item with the item *the facial muscles are symmetrical and strong*. The observed differences concerning item swapping could have been caused by the different design of the test used to assess learning. Still, it appears that the *ability to clench the teeth* item is difficult, and future training could place more emphasis on its correct use.

Interestingly, the most difficult item observed in the Czech study was the item *dysarthria* only 56% of the participants could define the term correctly [29]. On the other hand, none of the Greek participants had difficulty with this item. The most likely explanation is that the term *dysarthria* is in fact derived from the Greek words *dys*, meaning *hard* or *difficult*, and *arthrosis*, meaning *articulation*. Obviously, for the Greek participants, the term did not represent a foreign word.

Finally, Mandysová described her experience with the above Czech study and additional educational sessions using the same design and including mature nurses as well [21]. She commented that the students had focused more on *technical* skills whereas the nurses had focused on *cognitive* skills, i.e. on clinical reasoning and decision-making. Rather than achieving mastery in the assessment skills, the mature nurses' goal had been to understand and assess the compatibility of the learned content with the daily reality in their workplace. Such themes emerged in the current study as well. For example, the item *thick liquid: cough* requires the use of a fluid thickener, which the Greek participants had no prior experience with. A discussion emerged concerning its cost (approximately 15 euros for one can) due to significant financial constraints faced by the Greek health care system. Some participants sought to find out whether a less expensive substitute for the fluid thickener could be found. Others aimed to understand the process of the BBDST-R translation from English to Greek and its subsequent validation. They expressed a concern that because so little attention is given to dysphagia in Greece, the options to validate the translated version against an established measure could be very limited.

Although the present study has yielded some preliminary findings, its design is not without flaws. The first limitation concerns the sample size, which was very small. However, we were limited by the number of students enrolled in the above nursing programme and the number of nursing faculty members involved in their education. The second limitation relates to the experienced language barriers and the way they were handled. We did not have an official English/Greek interpreter on hand; instead, we relied on the nursing faculty members to assist with any language issues. While this approach is far from perfect, several of them had either worked or studied in the United Kingdom for a number of years, and their English language skills were excellent.

Conclusion

This pilot study demonstrates that organizing a cross-border educational session is not easy. The learning experience was affected by several relevant issues that were unique to Greece, ranging from the overall lack of attention devoted to dysphagia in clinical practice to financial constraints faced by the Greek health-care system.

On the other hand, certain findings were similar to the findings obtained in previous Czech studies concerning the same dysphagia screening instrument. A combination of hands-on practice and a discussion appeared to promote active learner participation. Similarly, the participants exhibited behaviours typical for mature learners – they were motivated to make sense of the presented information and to understand how it could affect their daily clinical practice. Full mastery of the technical aspects, i.e., the item assessment technique was not achieved, and additional practice and direct support in the clinical setting could be beneficial.

Our study results illustrate that the correct use of assessment instruments such as the described Brief Bedside Dysphagia Screening Test-Revised cannot be automatically assumed, especially in cases of cross-border implementation. Only a well-thought-out educational programme with a carefully conducted evaluation could help it to succeed. In cases of cross-border implementation, ongoing support by the team who originally developed the instrument could be useful. We recommend that nursing educators pay attention to such issues and design well thought-out training sessions when implementing new assessment instruments in clinical practice.

Conflict of interest

The authors have no conflict of interest to disclose.

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