

Deglutition Disorders from the Perspective of Healthcare Professionals in Turkey

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ABSTRACT

Objective: Awareness of deglutition disorders is essential for prevention of deglutition-related complications and improving quality of care. The study examined the current knowledge, attitude and practice regarding deglutition disorders among healthcare professionals in Turkey.

Methods: Healthcare professionals who worked in hospitals and special education schools were included. A survey examining knowledge, attitudes, and practices regarding deglutition disorders, originally designed by Farpour and colleagues (2019), was adapted and administered to healthcare professionals working in hospitals and special education schools in Turkey.

Results: A total of 270 healthcare professionals were responded (72.7% response rate). 254 participants (94.1%) were familiar with the term deglutition disorders. 223 participants (82.6%) defined their professions as a management team member. All participants supported a multidisciplinary approach. 216 (80%) participants met a patient with deglutition disorders. 212 participants (78.5%) used at least one evaluation method to evaluate swallowing function, and 147 participants (54.5%) used at least one treatment method for treatment. Most participants (73.7%) were interested in attending a workshop about deglutition disorders.

Conclusion: The present study showed that knowledge about deglutition disorders is high among healthcare professionals in Turkey, and they believe the necessity of multidisciplinary approach in deglutition disorders. However, it is not understood if they follow an individualized and standardized evaluation and management procedures. Therefore, more detailed questionnaires especially focus on evaluation and management of deglutition disorders should be developed and healthcare professionals could be trained to improve management of deglutition disorders in Turkey.

Keywords: Deglutition, deglutition disorders, knowledge, attitude, dysphagia.

1. INTRODUCTION

Deglutition disorders, or difficulty swallowing may result from structural problems and/or neuromuscular disorders (1). Such disorders, which include oropharyngeal and esophageal swallowing disorders, are highly prevalent and can cause severe nutritional and respiratory complications, and decreased quality of life among patients and their caregivers (2,3).

A primary goal when working with patients with deglutition disorders is to prevent complications (3). There are many conditions that can cause deglutition disorders including structural deficits of the head or neck region (i.e., head and neck cancer and its treatments, head or neck injuries), damage to the brain or nerves (i.e., cerebral palsy, stroke, motor neuron diseases, multiple sclerosis, Alzheimer's disease), and functional causes (i.e., cricopharyngeal dysfunction). In some countries, researchers have conducted studies of the

prevalence and incidence of deglutition disorders in various patient populations (4-12). The frequency of deglutition disorders varies with the patient characteristics, etiology of the disease, and its treatments (4-8). The prevalence of deglutition disorders is expected to rise with the increasingly aging population; therefore, it is an important healthcare issue, and one that is associated with enormous financial burden (13,14). As a result, it is important to evaluate swallowing function, define problems in swallowing function and prevent complications related to deglutition (9). However, deglutition disorders remain undiagnosed in most patients, and these patients do not receive any treatment and/or rehabilitation (10-12). Therefore, healthcare professionals must have sufficient awareness and knowledge and also appropriate attitudes to improve the management of deglutition disorders.

National and international practices are important for identifying needs, raising awareness of best practices, and improving communication and quality of care (15-21). Most of the studies focused on the practices of speech and language therapists concluded that there are various patterns of practice in terms of assessment and management of patients with dysphagia (16-19,21). One study found poor agreement with regard to the treatment techniques used for patients with deglutition disorders, a variety of techniques were performed within a swallowing rehabilitation session, and evidence-based approach was not common (17). Another study showed that clinicians had agreement in their clinical or instrumental evaluation recommendations despite wide variability in clinical decision-making (19). In another study conducted in Australia, history taken, observation of swallowing and cranial nerve examination as clinical swallowing evaluation are mentioned as the components of best practice, and videofluoroscopic swallowing evaluation was reported to be important for clinical decision-making. Although exercised based training has been shown as the best practice, it has been reported that Australian practice was based on compensatory techniques (21). Because managing dysphagia requires a multidisciplinary approach, some studies also included a variety of other professionals to show their knowledge and attitudes regarding dysphagia (15,20). These studies also suggest the need for education, establishing a standardized approach, and multidisciplinary teamwork. Thus, it is important to investigate national practices to identify the areas that need improvement, reveal best practices, and establish both national and international guidelines. To our knowledge, there is no study that has addressed the current status of patients suffering from deglutition disorders in Turkey. In addition, no studies have investigated the awareness, knowledge, attitudes and practices of healthcare professionals in Turkey. Therefore, this study was aimed to (i) determine the current knowledge, (ii) identify the attitudes, and (iii) define practice regarding deglutition disorders among healthcare professionals in Turkey.

2. METHODS

The current study was performed at the Faculty of Physical Therapy and Rehabilitation at Hacettepe University. The Ethics Commission of the university approved the study protocol (Approval number = 35853172-050). Informed consent was obtained from the participants who participated in this study.

2.1. Participants

The participants were recruited from healthcare professionals who worked in universities, governmental and educational hospitals, and special education schools in Turkey. There are seven regions in Turkey; therefore, seven different members of the Dysphagia Research Society of Turkey were selected to coordinate the survey distribution across the country. The

survey was sent electronically to potential participants using Google forms, and information regarding study details was provided before starting to fill the survey. All participants provided their informed consent when they clicked the start button of the survey.

2.2. Evaluation Procedures

A survey designed by Farpour et al. according to current dysphagia literature and authors' professional experiences was used in the study (15). The necessary permission was obtained from the corresponding author of the study. The forward-backward translation process was followed to translate the survey into Turkish language. Two bilingual Turkish physiotherapists translated the survey from English into Turkish for forward translation. Then, two translations were examined and converted into a single survey with a consensus for synthesis part. A native English-speaking language expert who also speaks Turkish translated the survey from Turkish into English for backward translation. The backward version was compared to the original by a committee consisting of a methodologist, a language professional and the entire translation team, and the Turkish version was finalized. The backward translation was presented to the corresponding author for their confirmation, and the translation process was completed.

After the translation process, the survey was also tested for content validity by five participants who were university-affiliated experts with a minimum of 10 years of practice in the area of dysphagia. The experts were asked to score each question as "necessary", "insufficient", or "unnecessary", and also instructed to include additional question if desired. The scores of the experts were used to calculate a content validity index. The critical value for the content validity index was 0.73 for the five experts (22). The questionnaire was then distributed in April 2019 via Google forms. Participants were asked to answer the questions so that their responses reflected their knowledge, attitudes and practices as best as possible. If the questionnaire was not returned, a follow-up inquiry was sent every four weeks. Twelve weeks after the initial posting, the survey was closed and replies were analyzed.

The survey included questions that requested descriptive information from the participants and 22 items with closed-ended and open-ended questions (15). The descriptive information included the participants' ages, occupational experience, in what regions of the country they lived, and types of hospitals with which they are associated. The survey had three subgroup items that related to knowledge (11 items), attitudes (4 items), and practices (7 items). In the knowledge section, participants were asked to state whether they were familiar with the term "deglutition disorders" (Q1), and also asked to define the term. The question that related to the definition of deglutition disorders was scored as "correct" or "incorrect" by two different dysphagia specialists with 10 and 20 years of experience. If both of them scored the answer as "correct", it was scored as "correct". This

section also had 10 statements that participants were asked to define as “correct” or “incorrect”. The statements were related to the oral phase of swallowing (Q2), the esophageal phase of swallowing (Q3), the pharyngeal phase of swallowing (Q4), head and neck problems (Q5), aging (Q6), dehydration (Q7), pulmonary infections (Q8), modifications (Q9 and Q10), and quality of life (Q11). The attitude section included three statements that participants were asked to define as “correct” or “incorrect”. The participants were asked whether their professions and other professions can help to improve swallowing functions and also whether a multidisciplinary approach is essential for improving deglutition disorders. There was one open-ended question that asked which other professions can help to improve deglutition disorders. The practice section contained one yes/no question and six open-ended questions. In this section, participants were asked questions such as whether they had encountered any patients with deglutition disorders and also to explain the underlying etiology of deglutition disorders, how to diagnose these disorders, and how to manage them. For open-ended questions in the attitude and practice sections, each answer was included in the calculations of the frequencies.

2.3. Statistical Analysis

The International Business Machines Corporation Statistical Package for the Social Sciences (IBM-SPSS) for Windows version 20 was used for statistical analysis. Descriptive statistics were calculated as a number/percent for qualitative data, and mean, standard deviation, minimum and maximum values for quantitative data.

3. RESULTS

No linguistic problems were identified with the translated survey, and every item on the final version found to match the original version. All questions were also found to be necessary by the experts, and a minor modification was made and one open-ended question related to the definition of the term ‘deglutition disorders’ was added to the first question of the knowledge section based on their feedback. The content validity index was determined to be 0.89.

A total of 371 healthcare professionals were invited to participate in the present study, and 270 healthcare professionals responded (72.7% response rate) to the survey. The mean age was 34.33±10.42 years (min=22, max=64) with a mean professional experience of 11.53±10.29 years (min=1, max=42). There were 8 various professions. Physicians constituted the majority of the study population (n = 119, 44.1%). The participants’ characteristics are presented in Table 1.

3.1. Knowledge

A total of 254 participants (94.1%) reported that they were familiar with the term ‘deglutition disorders’. 244 participants (90.4%) defined the term correctly. The mean knowledge

score was 9.14±1.08 (min=3, max=10). The number of correct answers for each questions was as follows: Q2: 262 (97%), Q3: 260 (96.3%), Q4: 253 (93.7%), Q5: 263 (97.4%), Q6: 261 (96.7%), Q7: 255 (94.4%), Q8: 244 (90.4%), Q9: 233 (86.3%), Q10: 166 (61.5%), and Q11: 268 (99.3%).

Table 1. The descriptive characteristics of participants

	Mean (SD)	min – max
Age (year)	34.33±10.42	22-64
Occupational experience (year)	11.53±10.29	1-42
	n	%
Region of the country		
Aegean	17	6.3
Blacksea	19	7.0
Central Anatolia	148	54.8
Eastern Anatolia	15	5.6
Marmara	27	10.0
Mediterranean	26	9.6
Southeastern Anatolia	18	6.7
Hospital		
University hospital	143	53.0
Governmental hospital	33	12.2
Educational hospital	53	19.6
Special education school	41	15.2
Profession		
Medical doctor	119	44.1
Physiotherapist	82	30.4
Nurse	34	12.6
Speech-language pathologist	16	5.9
Dietitian	10	3.7
Dentist	5	1.9
Child development specialist	3	1.1
Psychologist	1	0.4

n:number;SD: standard deviation; min: minimum; max: maximum

3.2. Attitude

A total of 223 (82.6%) participants defined their professions as a management team member of deglutition disorders. They all believed that other disciplines also have an important role in the management of deglutition disorders and supported multidisciplinary approach (n=270, 100%). Table 2 illustrates the participant responses to the question asking which other professions can help to improve deglutition disorders.

3.3. Practice

A total of 216 (80%) of participants had interacted with a patient experiencing deglutition disorders. The reported underlying etiologies of deglutition disorders were neurological disorders (n=145, 67.1%), cancer (n=33, 15.3%), structural problems (n=30, 13.9%), and psychiatric disorders (n=8, 3.7%). 212 participants (78.5%) reported at least one evaluation method used for the detection of deglutition disorders. A total of 64 (30.3%) of participants reported using standardized tests to evaluate patients with potential

deglutition disorders. 147 participants (54.4%) reported at least one treatment method used for the management of deglutition disorders. The most used evaluation and treatment methods for deglutition disorders were shown in Table 3. A total of 170 (78.7%) participants referred their patients to other professionals.

199 participants (73.7%) were interested in attending in a workshop on diagnosis, assessment and management of deglutition disorders.

Table 2. The percentages of other professions who can help improve deglutition disorders according to participants

Profession	Participants (n = 270)	
	n	%
Physiotherapist	218	80.7
Medical doctor	195	72.2
Speech-language pathologist	82	30.4
Nurse	65	24.1
Dietitian	63	23.3
Psychologist	34	12.6
Dentist	30	11.1
Child development specialist	14	5.2
Occupational therapist	10	3.7

n:number

Table 3. The most used evaluation and treatment methods for deglutition disorders

Evaluation methods	Participants (n = 270)	
	n	%
History taken	162	60
Clinical swallowing evaluation	83	30.7
Videofluoroscopic swallowing evaluation	45	16.7
Fiberoptic endoscopic swallowing evaluation	14	5.2
Endoscopy	9	3.3
Treatment methods	n	%
Nutritional recommendations	78	36.1
Exercise based therapy	78	36.1
Surgery	41	19
Sensory stimulation	21	9.7
Electrical stimulation	12	5.6
Medical treatment	8	3.7
Kinesiotaping	5	2.3
Appliance application	3	1.4
Psychotherapy	1	0.5

n:number

4. DISCUSSION

Standard management guidelines, which are based on the best available evidence, provide improvement in the quality of healthcare to patients (23). There is a general guideline on diagnosis and management of deglutition disorders published in 2014, which provides a practical approach (24). Despite general guidelines, defining the awareness, knowledge,

attitude and practice of healthcare professionals within countries is also important. Thus, we aimed to determine the current knowledge, attitude and practice patterns pertaining to deglutition disorders among healthcare professionals in Turkey. Our survey shows that healthcare professionals have sufficient knowledge about deglutition disorders, adopt the necessity of multidisciplinary approach, 78.5% of participants reported that they used at least one method to detect deglutition disorders, and 54.4% used at least one treatment method for management of deglutition disorders. The majority of participants were interested in attending in a workshop on diagnosis, assessment and management of deglutition disorders.

The study population consisted of participants from all regions of Turkey working in university, governmental, and educational hospitals, as well as special education schools. Of those who were invited to participate, 72.7% actually responded to the survey. The response rate is quite high, however the study population could be increased to represent the healthcare professionals currently practicing in Turkey because Turkey is a big country. The difficulty of reaching a sufficient number of participants that will represent the whole country is a common problem in survey research due to several reasons (25). For instance, absence of adequate sampling lists, and random population sampling are limitations for conducting survey research. Therefore, we tried to reduce this potential handicap by selecting seven persons from each region of the country to coordinate the survey distribution. It may also be a strength of the current study because including participants from all regions of the country may enable us to generalize the study results to entire country. As we expected, the majority of participants (approximately 55%) were from Central Anatolia, where the population density is high and the capital city is located. Another remarkable characteristic of our study population was being relatively young participants despite the age limit was up to 64 years. The reason may be the need for computer and internet usage (26).

Deglutition disorders are associated with a higher incidence of complications including malnutrition, dehydration, aspiration pneumonia, which may result in increased length of hospital stay, healthcare expenditure, decreased quality of life, and negative interaction between patients and caregivers (2,3). Awareness of deglutition disorders is essential for the prevention of complications in the early stages of such disorders (3). While understanding such disorders has been on the rise (15,27,28), our study results also show that participants have sufficient knowledge about deglutition disorders. The responses that were most commonly incorrect were related to the modifications suggested for patients with deglutition disorders (i.e., adaptive equipment usage, food consistency arrangement), of which the accuracy was above 60% for these questions. It is a remarkable finding because knowledge about the definition, physiology, and complications of deglutition disorders was consistent, with accuracy between 90% and 99% on these questions; however, healthcare professionals were not as knowledgeable

regarding modifications suggested for patients with deglutition disorders. Therefore, healthcare providers could likely benefit from training related to suggested modifications for such patients.

Consistent with the fact that healthcare professionals in Turkey supported a multidisciplinary approach to the treatment of deglutition disorders, they also reported physiotherapists, medical doctors, speech-language pathologists, nurses, dietitians, psychologists, dentists, child development specialists, and occupational therapists as team members who could help improve deglutition disorders. Of the participants, 78.7% reported that they referred their patients to other professionals. The top five professions mentioned as important in the management of deglutition disorders were physiotherapists, medical doctors, speech-language pathologists, nurses, and dietitians. Healthcare professionals in Turkey were aware of the importance of the role of therapists, nurses, and dietitians, in addition to medical doctors, in the management of deglutition disorders. This is a promising finding because not only diagnosis but also rehabilitation and care services are very important in management of deglutition disorders. The participants did not state the branch of physicians (i.e., otolaryngologist, gastroenterologist, pulmonologist) to which the participants referred their patients as a weakness of our study results.

The most common underlying etiologies of deglutition disorders among the participants' patients were neurological disorders and cancer. In general, the evaluation methods used to diagnose such disorders were taking a history and clinical swallowing evaluation. While an accurate history and clinical swallowing evaluation are useful, they are only the first steps in the clinical decision-making process (24), and can not replace instrumental swallowing tests to evaluate airway protection mechanisms (if necessary). However, the use of instrumental swallowing tests including videofluoroscopic and fiberoptic endoscopic swallowing evaluation is dramatically low according to the current study results. The possible reasons may be i) lack of knowledge about instrumental swallowing assessments, ii) insufficient accessibility to required assessment equipment, iii) lack of standardized protocol, iv) lack of trained professionals. Additionally, none of the participants mentioned an individualized evaluation protocol while answering this question. For instance, a step-by-step swallowing evaluation should be undertaken as part of the clinical decision-making process (12). After taking a history and performing a clinical swallowing evaluation, instrumental swallowing evaluation can be performed (if necessary). However, the current study results could not show if the participants follow an individualized and standardized evaluation protocol. Therefore, it could be suggested to use more detailed questions regarding swallowing evaluation procedure of healthcare professionals in future studies.

According to the answers to the last part of practice section, 54.4% of participants used at least one treatment method, with the most common methods being nutritional recommendations and exercise-based therapy. However,

the participants did not mention individualized therapeutic approaches, a result which is similar to those from previous studies (15,17,28,29). One possible explanation is that an individualized management protocol relies on individualized evaluation processes and clinical decision-making requires sufficient evaluation to guide proper treatment decisions (30). Thus, the management process of deglutition disorders relies on an appropriate assessment process to plan optimal, individualized (patient-centered) treatment recommendations (24,31). Another possible reason is the variety of healthcare professionals who evaluate deglutition disorders and are responsible for clinical decision-making process. Therefore, training in terms of treatment is also essential because approximately half of the healthcare professionals did not perform any treatment, and the other half did not mention individualized and/or standardized treatment approaches.

One remarkable finding is the parallelism between the most commonly mentioned professions responsible for the management of deglutition disorders (i.e., physiotherapists, speech-language pathologists, and dietitians) and the most common methods used for the treatment of deglutition disorders (i.e., nutritional recommendations and exercise-based therapy). Therapists (physical and speech-language therapists) were mentioned as important professions in the management of deglutition disorders in Turkey. Also, exercise-based therapy is the most common treatment option according to study participants. This result is similar to the trends in deglutition rehabilitation in the literature (17). The rehabilitation of deglutition disorders previously focused on postures, maneuvers and strategies to improve the swallowing safety and efficacy (17,32); however, recent studies in the management of deglutition disorders have moved to exercise-based approaches, including oral motor exercises (33), head lift exercises (34), expiratory muscle strength training (35), biofeedback (36), and the proprioceptive neuromuscular facilitation technique (37). Dietitians are also now considered members of the deglutition management team. In addition to their role in assessment, they help develop oral, enteral, and parenteral feeding regimes, determine appropriate interventions related to diet, meal patterns, nutritional supplements, food texture and liquid consistency modifications, etc. (38).

As a promising finding, the majority of participants were interested in attending a workshop on the diagnosis, assessment and management of deglutition disorders. This important result shows the awareness of the participants regarding their lack of knowledge and practice related to the evaluation and management of such disorders. Therefore, educational programs and improvements in healthcare professionals' knowledge and practice could help facilitate early diagnosis and better treatment of deglutition disorders.

This current study has also some limitations. Turkey is a big country with approximately 1500 hospitals. Therefore, further studies with larger samples will be designed with more detailed questionnaires especially focus on evaluation

and management of deglutition disorders to expand the study results. In addition, to provide a more accurate understanding of professionals' knowledge regarding deglutition disorders, case scenarios could be used or focus group interviews may be designed to show the number of patients with deglutition disorders and their management practices to better identify their actual practice patterns. Another limitation is that our study population did not receive any standardized training regarding online questionnaire. An online training program for participants to explain the survey questions could be performed before future survey studies.

5. CONCLUSION

The present study provides an overview of deglutition disorders from the perspective of healthcare professionals in Turkey. In conclusion, knowledge about deglutition disorders is high among healthcare professionals in Turkey according to the survey answers, and they believe that deglutition disorders are related to many professions and require multidisciplinary approach. Approximately 80% of the participants reported to use at least one evaluation method to detect deglutition disorders, however over 50% used at least one treatment method. The individualized clinical decision-making process was not mentioned in the current study. Therefore, more detailed questionnaires especially focus on evaluation and management of deglutition disorders should be developed and healthcare professionals could be trained to improve the quality of care for deglutition disorders in Turkey.

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