Original Article

Knowledge and Awareness of Egyptian Teachers About The Role of Phoniatricians in The Rehabilitation of Children with Learning Disabilities

Rasha Sami

Researcher at National Research Center, Dokki, GIiza, Egypt

ABSTRACT

Background: A learning disability is a neurological disorder that affects a person's ability to acquire, retain, and apply new skills or knowledge. These conditions may impact numerous aspects of learning, such as reading, writing, mathematics, and communication. Dyslexia is the most well-known learning disability. Phoniatricians are critical in helping people with learning disabilities. This study aimed to measure the knowledge and awareness of a sample of Egyptian teachers about the role of phoniatricians in rehabilitating children with learning disabilities.

Methods: A survey was conducted using a questionnaire of 39 multiple-choice questions provided to 100 teachers from 10 different national schools from two areas in Cairo and Giza. All teachers graduated from the same college, and none work as SENCO (special education coordinator). The questionnaire was provided online using the Monkey Survey, and the answers were collected within one week. Each participant was scored on the correctness of their answers out of the maximum score of 39.

Results: Only six questions were answered correctly by > 70% of the participants, and 50% of them answered 1/3 of the questions correctly. The mean score of the 100 teachers was 19±4. (range: 6-31). The median percentage of the score was 46.2% (range: 15.4%-79.5%). The median score was reached by 56% of the teachers. The scores were not affected by age or sex of participants. The scores in the 6th of October City schools were significantly higher than in the 5th settlement (20.1±3.9 vs. 17.0±3.0, respectively, $p<0.001$). The minimum success score (28, 70%) was reached by only two female teachers; their school has a special needs class and a supporting unit.

Conclusion: The knowledge of teachers in the national schools in Egypt about the role of Phoniatricians in rehabilitating children with learning disabilities is weak. Only 2 out of 100 teachers answered 70% of the survey questions correctly. Teachers must be educated and trained about learning disabilities and their management.

Key Words: Language pathologists (SLPs), learning Disabilities, phoniatricians, speech, teachers.

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Corresponding Author: Rasha Sami, Researcher at National Research Center, Dokki, GIiza, Egypt, **Tel:** +2 02 33360906, **E-mail:** drrashasami@gmail.com

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INTRODUCTION

A learning disability is a neurological disorder that affects the person's ability to acquire, retain, and apply information or skills. These conditions can impact reading, writing, mathematics, and communication. Learning disabilities are often characterized by difficulties in one or more areas of cognitive processing, which can significantly impact a person's academic, social, and daily living skills[1,2].

Learning disabilities include dyslexia, dysgraphia, dyscalculia, auditory processing disorder, non-verbal learning disorder (NVLD), and attention-deficit/hyperactivity disorder (ADHD). Dyslexia is a common learning disability affecting reading and language processing, leading to difficulty recognizing and understanding written words, spelling, and decoding[3]. Dysgraphia is related to writing and fine motor skills[4]. Dyscalculia affects mathematical abilities[5]. Individuals with NVLD may struggle with spatial reasoning and social skills[6]. Also, ADHD can significantly impact learning[7].

Phoniatricians, or speech and language pathologists, play a crucial role in assessing, diagnosing, and providing intervention for individuals with learning disabilities[8].

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They develop and implement individualized intervention plans to improve reading, writing, spelling, and comprehension skills[9]. Phoniatricians collaborate with other professionals, such as teachers, special education specialists, and psychologists, to provide a comprehensive approach to intervention. They participate in Individualized Education Plan (IEP) meetings and share their expertise to support the student's academic progress[10]. Their language and communication disorders expertise makes them valuable multidisciplinary team members working to help individuals with learning disabilities[11].

This study aimed to measure the knowledge and awareness of a sample of Egyptian teachers about the role of Phoniatricians in rehabilitating children with learning disabilities.

SUBJECTS AND METHODS

Study group

One hundred teachers shared in this survey were selected from 10 different national schools; five are located in the 6th of October City, and the other five are located in the 5th settlement. Their age ranged from 30 to 50 years. All teachers graduated from the same college, and none worked as SENCO (special education coordinator). After selection, an online consent for the sharing and publishing of this research was signed. An online survey was sent using a Monkey survey, and within one week, the 100 teachers answered all questions. For this study to be beneficial, a 4-minute video about learning disability and the role of phoniatricians at the end of the survey was watched by all the teachers and a question about how beneficial this video was answered. All teachers were asked if they had dealt with any special needs before and whether their school had a special education support unit, as there was a shortage of these units in most of the schools in Egypt.

Method

The survey was designed to check the teachers' knowledge about the role of Phoniatricians in rehabilitating children with learning disabilities. Thirty-nine questions were customized specifically for this purpose (Table 2). The first five questions were designed mainly to test the general knowledge about learning disabilities, whether the teachers are aware of learning disabilities, and the commonest type of learning disability.

From questions 6 to 12, teachers were asked about phoniatricians, if they knew the term "phoniatrician," if they knew what they do, and if they had any idea about their role in supporting children. Questions 13, 14, and 25 were about IEP, which is very important in the rehabilitation of children with learning disability. Question 15 was explicitly customized to ensure the teachers knew what dyslexia is or the term asked in question 2. From questions 16 to 19, teachers were tested to see if they could recognize children with learning disability among all the children in their classes.

Question 20 was particular about whether the teacher should or shouldn't refer a child with a suspected learning disability to a specialist. In question 21, there are two correct answers: psychologist and phoniatricians. It was clarified in the questionnaire that more than one answer could be correct. In this question, we meant to choose psychologists and phoniatricians to check if teachers know that they can refer learning disability children to phoniatricians or if they only know the psychologist's role.

Questions 22 to 24 are about inclusion and how the teachers think they can support these children. More detailed questions about phoniatricians are from questions 26 to 39, where teachers who know what phoniatricians are, their role in learning disabilities, and how they should collaborate to help children with learning disabilities will be able to answer correctly. These questions were designed so the teacher with general knowledge couldn't guess the right answer, so they either knew the phoniatricians' role or not.

Statistical methods

Statistical analysis was done using IBM© SPSS© Statistics version 23 (IBM© Corp., Armonk, NY, USA). Numerical data were expressed as mean and standard deviation or median and range as appropriate. Qualitative data were expressed as frequency and percentage. For quantitative data, comparison between two groups was done using independent sample t-test. Pearson product-moment was used to estimate the correlation between numerical variables. A *p-value* < 0.05 was considered significant.

RESULTS

(Table 1) shows a description of the participant teachers. A supporting unit for children with learning disabilities was reported only by ten teachers. Also, 31 teachers reported the presence of a special class for disabled children in their schools.

Table 1: Description of Participants

Variable	Value
Age (years)	Mean±SD: 39.1±5.2 Range: 30-50
Sex (male/female)	37/63
A supporting unit in the school, n (%)	10 (10%)
A special needs class in the school, n (%)	31 (31%)

(Table 2) shows the number of teachers who answered correctly to each question. Only six questions were answered correctly by > 70% of the participants. One-third of the questions were answered correctly by 50% of the participants.

Table 2: Description of the percentage of CORRECT answers to all of the 39 questions

	Correct
1. What is a learning disability?	30 (30%)
2. Which of the following is a common example of a specific learning disability?	90 (90%)
3. Which of the following is not a common type of learning disability?	40 (40%)
4. Learning disabilities are typically a result of a lack of effort or motivation in students.	85 (85%)
5. What is the most common learning disability that affects reading and language processing?	100 (100%)
6. Do you know what a phoniatrician (Speech-Language Pathologist) is?	25 (25%)
7. What is the primary role of a phoniatrician (Speech-Language Pathologist)?	57 (57%)
8. Phoniatricians primarily work with students who have challenges related to:	95 (95%)
9. Phoniatricians only work with students who have speech impediments, such as stuttering.	15 (15%)
10. In what educational contexts might teachers collaborate with Phoniatricians to support students?	15 (15%)
11. Phoniatricians are trained to work with students on a variety of speech and language issues, including:	56 (56%)
12. Phoniatricians can diagnose and treat a wide range of speech and language disorders.	99 (99%)
13. What does IEP stand for in the context of students with learning disabilities?	49 (49%)
14. What is an Individualized Education Plan (IEP)?	42 (42%)
15. What are some common signs of dyslexia, a reading-related learning disability?	9 (9%)
16. Which of the following is a potential sign of dysgraphia, a writing-related learning disability?	29 (29%)
17. When working with students with learning disabilities, what is the importance of providing clear and organized instructions?	64 (64%)
18. In the classroom, what is a useful strategy to assist students with dyscalculia, a math-related learning disability?	38 (38%)
19. Which of the following is a strategy that can be used to support students with learning disabilities in the classroom?	30 (30%)
20. When is it appropriate for teachers to consider referring a student for an evaluation to determine if they have a learning disability?	47 (47%)
21. Who should the teacher refer to a student for an evaluation to determine if they have a learning disability?	35 (35%)
22. What is one of the key roles of teachers in supporting students with learning disabilities?	58 (58%)
23. How can teachers create an inclusive classroom environment for students with learning disabilities?	59 (59%)
24. Inclusive education refers to:	83 (83%)
25. What is the role of an Individualized Education Plan (IEP) in supporting students with learning disabilities?	48 (48%)
26. What is the primary goal of Phoniatricians when working with students in an educational setting?	45 (45%)
27. What is the primary role of Phoniatricians in addressing learning disabilities?	45 (45%)
28. Which of the following learning disabilities is most commonly addressed by Phoniatricians?	60 (60%)
29. Phoniatricians can help students with learning disabilities by:	42 (42%)
30. Phoniatricians often collaborate with teachers to:	39 (39%)
31. In what settings can Phoniatricians collaborate with teachers to support students with learning disabilities?	3 (3%)
32. Phoniatricians can assess and diagnose learning disabilities in students.	35 (35%)
33. Which of the following is NOT a communication or language skill that Phoniatricians may address in students with learning disabilities?	30 (30%)
34. When should teachers consider referring students to a phoniatrician for evaluation and support?	33 (33%)
35. Which of the following strategies can teachers use to collaborate effectively with Phoniatricians in supporting students with learning disabilities?	40 (40%)
36. What is the primary goal of Phoniatricians when working with students with learning disabilities?	34 (34%)
37. Why is collaboration between teachers and Phoniatricians important for students with learning disabilities?	68 (68%)
38. Collaboration between teachers and Phoniatricians can lead to:	36 (36%)
39. If you feel that you would benefit from additional training about the role of Phoniatricians in addressing learning disabilities, what type of training or resources would you find most helpful?	44 (44%)

Each participant was scored on the correctness of their answers. The maximum score was 39 correct answers. The mean score of the 100 teachers was 19±4. The median score was 18, ranging from 6 to 31. The median percentage of the score was 46.2% (range: 15.4%-79.5%). The median score was reached by 56% of the teachers. A score of 28 (70%) is considered the minimum success score. It was reached only by two female teachers aged 38 and 40 in a school located in the 6th of October city with a special needs class and a supporting unit. Both scored 31 (79.5%). (Table 3).

Table 3: The total score of all participants

	Mean±SD	Range
Crude Score (out of 39)	19±4	18 (6-31)
Interquartile range	17-20	
Percentage of score	48.7±10.3%	46.2% (15.4%-79.5%)

There is no correlation between scores and age of participants (r = -0.128, p=0.204). Also, the total score was not affected by the participants' sex (p=0.990). The mean score was 18.5±4.0 in males and 18.5±3.6 in females. However, the teachers' scores in the 6th of October City schools were significantly higher than in the 5th settlement (20.1±3.9 vs. 17.0±3.0, respectively, p<0.001).

DISCUSSION

Teachers play a crucial role in identifying potential learning disabilities in the classroom. While they cannot diagnose these disabilities, their observations and assessments can help initiate the evaluation and support process for students[12]. This study aimed to assess teachers' knowledge regarding learning disabilities and their understanding of the role of phoniatricians in supporting students with such disabilities. The findings reveal noteworthy patterns in participants' characteristics, knowledge levels, and factors influencing their scores.

The mean age of 39.1 years indicates a relatively experienced teaching group. Notably, only 10% of teachers reported the presence of a supporting unit for children with learning disabilities in their schools, while 31% reported the existence of a special needs class. These figures may affect teachers' overall awareness and preparedness in dealing with students with learning disabilities.

There was no significant correlation between participants' scores and age or gender. However, a significant difference in scores was observed based on the schools' location, with teachers in the 6th of October City schools scoring higher than those in the 5th settlement. This variation was attributed to the existence of a special educational needs support unit in one of the schools in the 6th of October city; thus, there were more educational resources and training programs.

The study demonstrated variable levels of knowledge among participants. While some questions were correctly answered by over 70% of teachers, others were answered correctly by only 30% to 50% of participants. The distribution suggests areas of strength and weakness in teachers' understanding of learning disabilities.

The mean score of 19 out of 39 (48.7%) highlights a moderate level of knowledge among teachers. The interquartile range and the percentage of scores indicate a considerable variability in participants' understanding. Notably, the median score was 46.2%, suggesting that more than half of the teachers scored below the mean.

The study determined a score of 28 (70%) as the minimum successful score. It was achieved only by two teachers from the school in the 6th of October city with the special educational needs support unit. This finding underscores the need for targeted training and support, as most participants did not meet this benchmark.

The study contributes valuable insights into teachers' knowledge of learning disabilities and the role of phoniatricians in rehabilitation. All teachers know the term dyslexia, which is a very common learning disability[13]. Still, they didn't know what it indicates or how to help students with dyslexia, as evident from their scores in other questions related to supporting students with dyslexia or learning disability.

The results suggest a need for targeted professional development programs to enhance teachers' understanding of learning disabilities and their collaboration with phoniatricians[12]. Strategies may include workshops, resources, and ongoing support tailored to the identified areas of weakness.

It's important to note that teachers play a critical role in the early identification of learning disabilities. Still, a formal diagnosis and appropriate interventions should be conducted by professionals such as educational psychologists or phoniatricians (speech and language pathologists). Phoniatricians can conduct in-depth language and communication assessments to diagnose specific difficulties[14]. Early identification and intervention can significantly improve outcomes for students with learning disabilities. Thus, the cooperation of teachers and phoniatricians is essential for effectively addressing learning disabilities. Scientific research supports the significance of this collaboration in providing comprehensive support for students with learning disabilities[12]

Together, teachers and phoniatricians can contribute to developing and implementing IEPs tailored to the unique needs of students with learning disabilities[12].They can design and implement targeted interventions that address specific language and communication difficulties in the classroom and therapy sessions[15]. Teachers can provide feedback on a student's classroom performance, and Phoniatricians can adjust therapy goals accordingly[16]. Phoniatricians can share language-based strategies and accommodations with teachers, enabling them to provide appropriate support within the classroom[17]. Collaborative professional development opportunities for teachers and Phoniatricians can enhance their collective expertise in addressing learning disabilities[15].

CONCLUSION

The findings of this study underscore the importance of ongoing professional development for teachers to support students with learning disabilities better. Educators can create more inclusive and supportive learning environments by addressing the identified knowledge gaps. Future research could explore the effectiveness of specific training interventions in improving teachers' knowledge and practices related to learning disabilities.

CONFLICT OF INTERESTS

There are no conflicts of interest.

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