

Original Research

Investigation of the knowledge, experiences, and opinions of Speech and Language Pathologists on assessments and therapies for cognitive communication disorders in people with Alzheimer's disease - A cross-sectional survey in Turkey

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Abstract

Objective: To examine the knowledge, experiences, and opinions of Speech and Language Pathologists' (SLP) in Turkey concerning cognitive communication assessments and therapies applied in Alzheimer's disease (AD).

Materials and Methods: This study conducted a cross-sectional survey consisting of 24 questions, 17 of which were answered by all participants and 7 answered only by people who have worked people with AD. Questionnaires were sent to the graduated SLPs via social media and mail groups.

Results: A total sample was obtained from 145 individuals (130 females, 15 males) with a mean age of 21.4 ± 6.288 years. Of the SLPs, 82.1% had never given therapy to an individual with AD. In addition, 89% of SLPs stated that they did not know that other occupational groups were working with AD. Of the SLPs, 92.4% stated that patients in the mild stage, 89% of patients in the intermediate stage, and 45.5% of patients in the advanced stage could benefit from therapy.

Conclusion: This is the first study in Turkey to examine the knowledge, experiences, and opinions of SLPs about assessments and therapies for cognitive communication disorders in people with AD. In this study, it was observed that SLPs lack general knowledge, assessment, therapy practice, and experience with cognitive communication disorders in the AD population. In particular, if a separate course for cognitive communication disorders is not offered in the undergraduate curriculum, this could be arranged in the educational content of cognitive communication disorders, such as dementia, and be explained in detail. Thus, SLPs' knowledge levels would be increased.

Keywords: *Alzheimer, dementia, Speech and Language Pathologist, Cognitive Communication*

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Introduction

One of the fields of study of speech and language pathologists (SLP) is cognitive communication disorders (Association, 2016). Dementia, which is a cognitive communication disorder, is defined as a chronic and usually progressive syndrome characterized by a deterioration in cognitive function (i.e., the ability to process thoughts) that exceeds what is expected to occur during the typical aging process (Organization, 2017; Parlak, Babademez, et al., 2022). Dementia is the seventh leading cause of death among all diseases and one of the leading causes of disability and addiction among older people worldwide (Organization, 2021). Alzheimer's disease (AD) constitutes 60–70% of dementia cases (Parlak, Altan, et al., 2022). It is a progressive neurodegenerative disease that is classically characterized by a gradual deterioration in memory, language, and other cognitive domains (Pellicciari & Miniussi, 2018). AD has physical, psychological, social, and economic implications not only for people living with AD, but also for their caregivers, their families, and society at large (Mahoney et al., 2005; Munis et al., 2021).

SLPs who work with people with AD should work from the earliest stage possible to support their cognitive communication (Swan et al., 2018). SLPs can use screening scales for cognitive functions, identify defective areas through clinical observations, and make detailed assessments, especially about language, which is a sub-function of cognition. As a result of these evaluations, an SLP can provide therapy focused on the sub-branches of cognition separately, or aimed at general cognitive communication. To monitor the effectiveness of therapies, patients should also complete pre- and post-therapy evaluations for their quality of life, depression, and activities of daily living (Carrion et al., 2018; Parlak et al., 2022). Starting therapy immediately after a diagnosis, especially in patient groups with a progressive cognitive impairment such as AD, is of great importance, in terms of reducing the rate of progression and protecting cognitive functions. There are non-pharmacological therapy approaches that can be applied in AD, and the effects of these therapies on different functions have been demonstrated by many studies (Olazarán et al., 2010; Woods et al., 2012; Woods et al., 2018). As a result of their evaluations in cases of AD, SLPs should identify and implement appropriate therapy approaches (Swan et al., 2018).

The literature features several cross-sectional questionnaire studies on swallowing and cognitive-communication disorders in individuals with dementia (Basri et al., 2017; Kaf et al., 2011; Kimzey et al., 2016; Nobrega et al., 2016; Vitale et al., 2011). Most of the dementia surveys were aimed at students (Basri et al., 2017) and only 2 of these studies were applied to

SLPs. The survey was conducted in Portugal (Nobrega et al., 2016) investigating the clinical experiences of SLPs and their patients with dementia, and SLPs in Ireland (Dooley12 & Walshe, 2018) have examined the management of cognitive communication disorders in individuals with dementia. However, these studies included all types of dementia. No study has been conducted to date on the knowledge levels and experiences of SLPs for both assessment and therapies related only to people with AD who have a cognitive communication disorder. Besides, there is no information in Turkey about SLPs' knowledge, experiences, or access to information concerning AD. If the need for SLPs' support in terms of knowledge and experience to aid people with AD with cognitive communication can be determined, in the future, courses can be arranged to promote knowledge in this field, and applications, such as courses and seminars, can be devised. With this in mind, this study aims to examine the knowledge, experiences, and opinions of SLPs in Turkey concerning cognitive communication assessments and therapies applied to people with AD. Using the results, we want to identify the places that require assistance in this field.

Materials and Methods

Ethical approval for this study, which was conducted as a cross-sectional study in Turkey, was obtained from the ethics committee of the Hacettepe University (date: 30.07.2021, no: E-35853172-000-00001682790) and all Helsinki Declaration guidelines were followed.

Procedures and Creating a Survey

A Google survey focusing on the knowledge, experience, and opinions of SLPs regarding assessment and therapy methods for cognitive communication disorders in people with AD was conducted. The questions were created by and discussed between the researchers. Questions about evaluation and therapy methods were created with the intention of including Turkish adaptation and/or tests and methods with validity and reliability.

The created questionnaire was sent to an 8-person expert SLP (mean age 33.4 ± 2.5 years; 5 females, 3 males) for interpretation, criticism, and suggestions. According to expert opinions, 2 questions were removed from the first prepared version, 1 question was changed for clarity, and 1 question's options were increased. After the changes, the final version of the questionnaire consists of 27 questions, excluding the consent question. Three questions were about demographic information. While there were 18 questions to be answered by everyone participating in the study, 7 questions were only to be answered by patients who had previously worked with people with AD. The link to the questionnaire was shared with members of the

Turkish Speech and Language Therapists Association as an email and as a message to SLP groups on WhatsApp.

Participants

After receiving answers from the participants about whether they wanted to volunteer or not, survey questions were opened to those who wanted to participate. Working as an SLP for at least 2 months in Turkey was determined to be inclusion criteria. Within 6 months, 157 people participated in the survey. Twelve people were excluded from the study because they entered the wrong data (for example: entering their age incorrectly, such as 9 years old, or answering the questions about their patient despite choosing the "I'm taking AD" option). After excluding these individuals from the study, a final sample of 145 subjects (mean age 27.214 ± 6.288 years) was obtained, of which 89.7% were female (n: 130) and 10.3% were male (n: 15) (Table 1).

Data Analysis

The acquired data were analyzed using descriptive statistics and the Statistical Package for the Social Sciences (version 23).

Results

The average professional experience of the SLPs was 2.902 ± 4.234 years, and 58.6% of the survey respondents had a bachelor's degree (Table 1). Although 96.6% of SLPs knew that they could work with patients with AD, 82.1% of them had never worked with individuals with AD before. About 89% of the SLPs stated that other occupational groups do not know that SLPs work with patients with AD. SLPs consider, about 37.2% neurologists, 26.9% psychologists, 25.5% physiotherapists, and 7.6% SLPs are known as practitioners applying nonpharmacological treatment for AD (Table 2).

Table 1. Demographics findings.

	mean, percent (n)
Age	27.214 ± 6.288 years
Gender	
Female	89.7% (130)
Male	10.3% (15)
Educational Status	
Bachelor degree	58.6% (85)
Master's degree	29% (42)
PhD degree	12.4% (18)
Experience	2.902 ± 4.234 years

Table 2. Working situations and thoughts of SLPs in AD.

	mean, percent (n)
Have you had an AD patient before?	
Yes	17.9 % (26)
No	82.1% (119)
Did you know that SLPs work in AD?	
Yes	96.6% (119)
No	3.4% (5)
Do you think other professional groups know that SLP is working in AD?	
Yes	11% (16)
No	89% (129)
Which occupational group do you think is known to apply nonpharmacological treatment in AD?	
Neurologist	37.2% (54)
Psychologist	26.9% (39)
Physiotherapist	25.5% (35)
SLP	7.6% (11)
Other	3.8% (6)

In patients with AD, 52.4% of SLPs think that the pragmatic components of language are the most affected, while 35.2% think it is the semantic component (Table 3). Approximately 75.9% of SLPs reported naming, 42.8% signification, and 35.2% spontaneous speech and language disorders from the early stage of AD (Figure 1).

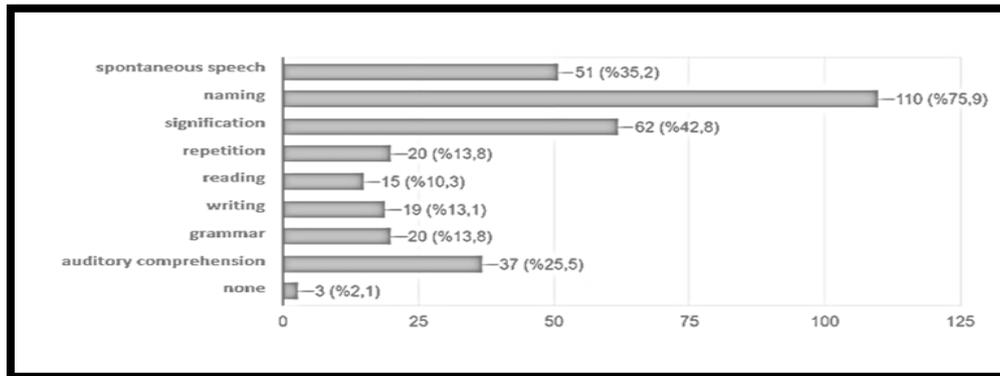


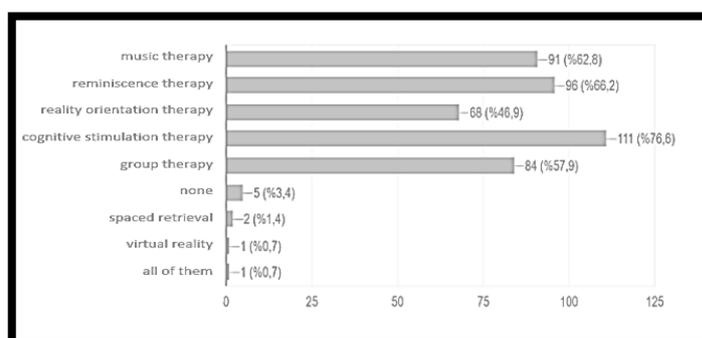
Figure 1. SLPs' choices as to which of the speech and language problems begin to deteriorate from the early stage of AD.

Table 3. SLPs' thoughts on assessment and therapy in AD, and their way of acquiring knowledge.

							mean, percent (n)		
At which stage should individuals with AD receive therapy? (more than one option can be selected)									
mild stage			moderate stage			advanced stage			
92.4% (134)			89% (129)			45.5% (66)			
Which component of the language is most affected in AD?									
pragmatic		semantics		syntax		phonology		morphology	
52.4% (76)		35.2% (35.2)		6.9% (10)		4.8% (7)		0.7(1)	
In your opinion, in which areas should evaluation and therapy be done in AD? (more than one option can be selected)									
memory		language		attention		executive functions		visual spatial functions	
97.2% (141)		93.8% (136)		84.8% (123)		88.3% (128)		66.9% (97)	
								47.6% (69)	
In your opinion, in which evaluations be done in AD?									
SMMSE		MoCA		ADD		GAT2		informal clinical evaluation	
82.1% (119)		79.3% (115)		84.1% (122)		41.5% (60)		63.4% (92)	
								77.2% (112)	
								1.4% (2)	
Where did you learn assessment and therapy information in AD?									
books		internet		undergraduate courses		postgraduate courses		paid trainings	
68.9% (100)		56.5% (82)		59.3% (86)		22.1% (32)		6.9% (10)	

MMSE:Mini Mental Stage Examination, MoCA:Moca Cognitive Assessment, ADD:Aphasia Language Assessment Test, GAT2:Gülhane Aphasia Test

Of the methods used for therapy in individuals with AD, 76.6% of the SLPs had heard of cognitive stimulation, 66.2% had heard of reminiscence therapy, and 62.8% had heard of music therapy (Figure 2). About 92.4% of SLPs stated that mild, 89% moderate, and 45.5% advanced stages of AD can receive therapy. Besides, 68.9% of the SLPs reported they obtained information about AD from books and 59.3% from undergraduate courses (Table 3).

**Figure 2.** SLPs' choices for prior hearing of non-pharmacological therapies in AD.

While guiding therapy in people with AD, 94.5% of SLPs stated they consider the results of their evaluation, 81.4% the stage of the disease, and 61.4%, the wishes of the caregiver (Figure 3). Regarding therapy in people with AD, 81.4% of SLPs chose holistic, 78.6% cognition-focused, and 68.3% language-focused work (Figure 4). In addition, while 3.4% of the SLPs definitely do not want to work with people with AD, 24.8% stated they definitely want to (Figure 5).

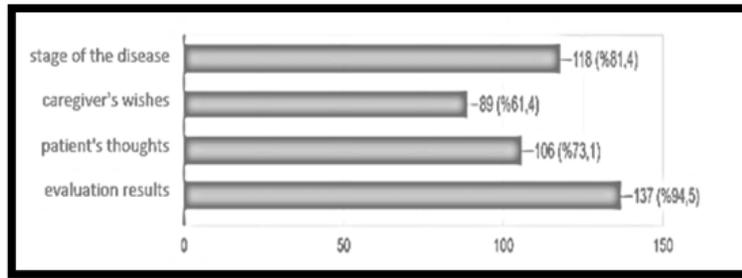


Figure 3. Preferences SLPs consider when choosing a therapy method.

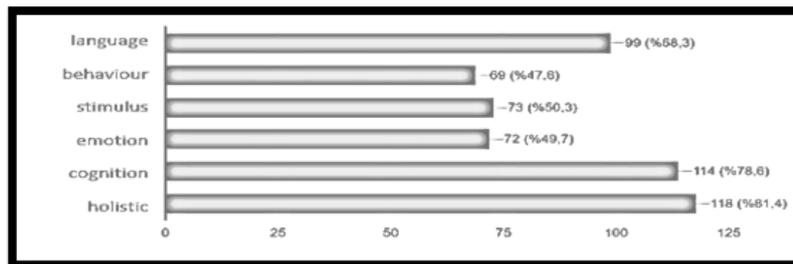


Figure 4. Opinions of SLPs on what-based therapy SLPs should apply in AD.

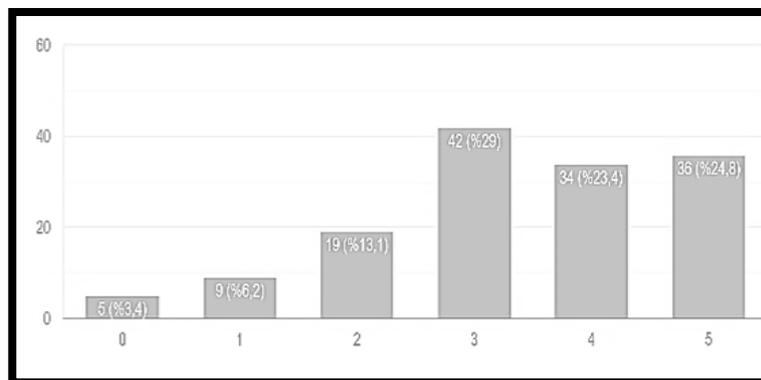


Figure 5. Situations of SLPs wanting to work with people with AD. (0= not at all, 5= very much)

Discussion and Conclusion

The findings of this survey study showed the knowledge, experience, and general perspectives of SLPs in Turkey about AD. A significant percentage of SLPs (82.1%) had never worked with people with AD before. This situation is quite similar to studies involving individuals with dementia conducted in other countries (Dooley12 & Walshe, 2018; Nobrega et al., 2016). The reason for this result may be due to SLPs' unwillingness to work with these patients or their inability to refer patients to SLPs. In addition, 85% of the participants in this study were working in special education centers, and dementia patients in our country are generally not referred to these centers unless they have aphasia. This may be another reason why the SLPs in this study had not received patients with AD before. Only in our country but also in other countries, SLPs have little experience with cognitive-communication in AD or dementia. Although speech and language pathology is one of the fields of study in Turkey, as well as other countries, it is not sufficiently emphasized and researched (Lanzi et al., 2021). In the US, the American Speech-Language-Hearing Association's (ASHA, 2019) survey reported that 60% of SLPs in healthcare settings spend most of their time working with adults, but only 13.7% work with patients with dementia for cognitive communication (Association, 2019). Although this rate is the second highest percentage after swallowing (39.8% work in swallowing), it is still low.

Although 96.6% of the SLPs in this study knew that SLPs work with patients with AD, only 25.5% thought that other occupational groups knew this fact. This finding is similar to what was reported by Nobrega et al. (Nobrega et al., 2016). One reason for this situation for our country may be the low number of SLPs in Turkey. In some provinces and districts, there even be not any working SLPs. Another reason may be that the SLP profession emerges later than other occupational groups in Turkey; therefore, the profession may not be sufficiently recognized. In our country, the profession of Speech and Language Therapy (Pathology) was defined as a healthcare professional on April 6, 2011, after other professional groups such as neurology, psychology, and physiotherapy (Resmigazete, 2011). Therefore, SLPs may have thought that neurologists (37.2%) and psychologists (26.9%) were known as the occupational group that applied nonpharmacological treatment in AD. In addition, the scarcity of studies on cognitive communication disorders conducted by SLPs in the literature may have reduced awareness that SLPs work in this area (Roberts et al., 2020). However, the fact that the role of SLPs in AD is not well known by other occupational groups may result in inadequate referral

of patients to SLPs. Similarly, Taylor et al. concluded in their study that individuals with dementia are still not being referred to SLPs in Australia (Taylor et al., 2009).

In this study, 52.4% of SLPs reported that pragmatic skills and 35.2% of semantic skills were the first to deteriorate in AD. Furthermore, 75.9% of SLPs believe that naming skills and 42.8% believe that signification skills are impaired in individuals with AD from an early age. Semantic and pragmatic components of language are the first to be affected in AD. As the disease progresses, syntax and phonological areas also begin to be affected (Szatloczki et al., 2015). The low number of people who chose the semantic component of the language and the interpretation skills suggested that SLPs do not have enough knowledge about the sequence of cognitive and communicative disorders that occur in AD. While most of the SLPs in this study stated that individuals with mild or moderate AD can benefit from therapy, 45.5% thought that those in advanced stages could. One reason may be that SLPs who do not have enough knowledge about AD have the idea that patients in advanced stages become completely dependent and will not talk. However, supporting those in advanced stages by using alternative communication and stimulation approaches can be beneficial. It can be assumed that the SLPs in this study have a general lack of knowledge about AD.

While most SLPs thought that AD patients should undergo memory and language assessments, only 47.6% chose the direction option. This may have been due to their ignorance of the term "direction." If the term "orientation" had been used instead, perhaps more people would have chosen this option. Most SLPs in Alzheimer's disease have chosen SMMSE for cognitive assessment, LATA for language assessment, and informal assessment. As Volkmer (2013) notes, informal evaluation is important, as it can guide the creation of a therapy plan. However, formal and informal evaluations should be combined to provide differential diagnoses, detailed information, individualized intervention plans, and comparisons of pre- and post-therapy variables. Because there is no valid and reliable Turkish scale to evaluate cognitive communication disorders, tests evaluating various areas are combined, which makes patient evaluation very long. Therefore, validation studies of Turkish versions of the relevant scales are needed to allow quick and easy assessment of individuals with dementia in terms of cognitive communication disorder. When treating patients at any stage of dementia, SLPs are encouraged to work on improving quality of life. There is increasing evidence that SLP interventions with individuals with dementia can be effective at improving communication and functional independence. More than half of the SLPs thought that quality of life and depression should be assessed in these patients. This demonstrates that SLPs are aware that measuring

therapy effectiveness not only requires assessment of not only language and cognition but also quality of life and depression, which are important therapy outcome measures for these patients.

When choosing a therapy method, 94.5% of SLPs reported that they consider the evaluation results, 81.4% the stage of the disease, and 61.4% the wishes of the caregiver. It has been observed that relatively few providers take these three factors into account when creating a therapy plan for individuals with AD. Considering the wishes of their caregivers may decrease burden and improve quality of life, especially for people with mild to advanced AD. Many studies have now determined that caregivers of individuals with AD can develop depression and anxiety, which negatively affect their quality of life (Mahoney et al., 2005; Vitaliano et al., 1991). Therefore, it is important to include caregiver opinions when creating a therapy program and to counsel and cooperate with caregivers throughout therapy planning.

Most SLPs who had previously worked with AD patients treated mild or moderate cases. Very few had worked with those in advanced stages of the disease. Most of these patients had also been diagnosed less than 5 years prior. However, patients diagnosed for longer than 5 years also need therapy. In addition, it is noted in the literature that because early AD symptoms can be confused with normal age-related cognitive decline or other diseases, diagnosis and doctor referrals may be delayed, causing SLPs to work more with intermediate and advanced stage patients (Sánchez et al., 2016). Most of the SLPs in this study were working with patients at the middle stage, which is consistent with the literature. Most people with AD who received therapy from SLPs were accompanied by their spouses. It is important to identify the people spending the most time with the patient, invite them to therapy sessions, and suggest how they can help support the patient's communication.

In this study, 58.6% of participants had bachelor's degrees, and 59.3% reported that they learned information about AD in undergraduate courses. Although there is a national SLP core training program in Turkey; unfortunately, we think that both dementia and AD are not taught in detail, since in most schools in our country, separate courses on cognitive-communication disorders are not given. Similarly, in other countries, a stand-alone course on cognitive-communication or dementia is not usually offered, although the Council for Academic Accreditation in Audiology and Speech-Language Pathology includes cognitive aspects of communication as a necessary learning construct (Morrow et al., 2021). In addition in current study, only 24.8% of surveyed SLPs reported that they definitely wanted to work with people with AD. This situation may be because SLPs feel inadequate to work with this group due to

their lack of knowledge and experience with AD. Morrow et al., in their survey study of SLPs working in acute care settings, found that many SLPs lack self-confidence and specialized training in the management of cognitive-communication disorders (Morrow et al., 2021). One of the reasons why the SLPs in our study did not want to work in this field could be their lack of self-confidence.

Limitations: Participation in the survey is limited to 147 people. Due to the small number of participants, generalizations cannot be made. Furthermore, because the majority of those who participated in the study had bachelor's degrees, it is unknown how the results will differ in SLPs with postgraduate education.

In conclusion, this is the first study in Turkey to examine the knowledge, experiences, and opinions of SLPs about assessments and therapies for cognitive communication disorders in people with AD. In this study, only 17.9% of SLPs worked with AD patients. Less than half of SLPs think that those with advanced-stage AD should receive therapy. In this study, where most of the participants had bachelor's degrees, it was observed that SLPs lack general knowledge, assessment skills, therapy practice, and experience with cognitive communication disorders in the AD population. In particular, if a separate course for cognitive communication disorders is not offered in the undergraduate curriculum, this could be arranged in the educational content of cognitive communication disorders, such as dementia, and be explained in detail. Thus, SLPs' lack of knowledge on this subject can be eliminated, and patients with advanced stages can also receive therapy for cognitive-communication disorders. Nearly one-third (74.5%) of SLPs stated that other occupational groups did not know that SLPs were working with people with AD. Therefore, by increasing inter-and multidisciplinary studies in other fields, especially neurology, awareness that SLPs work with patient groups that include AD can be increased, and patient referrals can be provided from early stages.

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Declaration of competing interest

The authors declare no conflicts of interest.

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