

Online speech therapy - interaction, efficiency, results.

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Abstract

This article discusses some aspects of online speech therapy, regarding the interaction, effectiveness and outcome, the discussion being based on studies conducted both in terms of language disorders and in accordance with the presence of disability. As a base for the research, I have used the survey method, with a questionnaire applied to a number of 51 parents whose children have conducted online speech therapy sessions, mainly synchronously. The advantages and disadvantages of using online therapy are debated from the point of view of both the parent and the speech therapist. The importance of choosing the right therapeutic form (online or classic) being an inherent conclusion.

Introduction

Society had to adapt to an unprecedented situation: to turn, in an instant, the computer from "the best friend" of children around the world into a cold and distant teacher. Despite this paradox, the online speech therapy is viewed as a pleasant, desirable and attractive activity for children of all ages. Remote therapeutic activity has been accepted and promoted in the United States since the 1970s, starting from the need to continue therapy even after discharging a patient. In the early stages, this form of therapy was done by telephone. The advancement of technology allowed online therapy to acquire new meanings, transforming the therapist's work into true web design masterpieces. In Romania, remote speech therapy began with the development of cochlear implants, but there are no significant studies regarding this subject.

Who is online speech therapy for?

This form of therapy arose from the need to perform remote therapy. It is addressed to both children and adults with language disorders, who live in places where there is no speech therapist, or the therapist is located too far away from their home.

The online services provided by therapists are a useful and suitable way to counteract some objective inconveniences regarding limited access due to distance, absence of specialists in the home area and, especially, the (possible) inability of children and / or adults with language disorders to travel to a certain place.

According to the results published by the *American Speech Language Hearing Association*, 2% of language therapists and 5% of audiologists offer online services.

Defining terms

According to the *American Speech Language Hearing Association*, there are synonymous terms: teleaudiology, teletherapy, or telerehabilitation. All of them involve the use of technology to provide specialized services in language therapy. This remote therapy is performed by connecting the specialist with the patient in order to perform the evaluation, intervention and / or counselling.

Below, we present the research based on the results and observations of some online language disorder therapy researchers - Edwards, M. Stredler-Brown, A. Houston, K. T. (2012)

Language disorder	Researcher(s)	Patient(s)	Stage/phase	Results/Observations
Aphasia	Brennan, Georgeadis, Baron and Barker (2004)	40 patients with brain damage	Evaluation	There is no significant difference between face-to-face testing and online testing
	Palsbo (2007)	24 patients	Evaluation	A single case diagnosed with severe aphasia requires face-to-face examination. There were no difficulties in testing online.
Apraxia	Hill, Theodoros, Russell, and Ward (2009)	11 patients	Evaluation	There are no significant differences between face-to-face assessment and online assessment. Some difficulties have been encountered in severe cases of apraxia.
Dysarthria	Hill, Theodoros, Russell, and Ward (2009)	24 patients	Evaluation	There is concordance between the answers of the evaluators who performed the evaluation in two different conditions (face to face and online), in 80% - 100% of the cases
Voice disorders	Mashima et al. (2003)	51 patients	Therapy	There are no significant differences between face-to-face assessment and online assessment
	Theodoros et al. (2006)	10 patients diagnosed with Parkinson's Disease	16 online therapy sessions	The results reveal improvements in: vowel length, reading, conversation and intonation.
	Howell and	3 patients	Online and	Significant progress

	colleagues (2009)	diagnosed with Parkinson's Disease	face-to-face therapy	over time in phonation, reading and conversation in both conditions.
	Constantinescu et al. (2011)	34 patients diagnosed with Parkinson's Disease	Therapy	Significant progress in both groups, with no significant differences between online sessions participants and those who attended face-to-face.
Dysphagia	Ward and colleagues (2009)	11 patients that had laryngectomy	Evaluation	The results are accepted under both conditions.
	Ward, Sharma, Burns, Theodoros, Russell (2011)	40 patients diagnosed with dysphagia	Evaluation	The results are accepted under both conditions, with the mention that face-to-face assessment is recommended for a more complex diagnosis.
Speech fluency disorders	Sicotte, Lehoux, Fortier-Blanc, & Leblanc (2003)	6 patients	Therapy	There has been a decrease in stuttering as a result of online therapy.
Diagnosis of language disorders	Waite, Cahill, Theodoros, Russell, and Busuttin (2006)	6 children that presented language disorder	Evaluation	Specialists obtained almost the same results (91-100%) in both situations: face to face and remote.
	Waite, Theodoros, Russell, & Gahill (2010)	24 children	Evaluation	The study concluded that there are no significant differences between the results recorded in the two conditions.
	Waite, Theodoros, Russell, & Gahill (2010)	20 children	Evaluation	There were no significant differences between face-to-face assessment and remote assessment.
Pronunciation disorders	Waite and colleagues (2006) Grogan-Johnson and	Pupils from both Australia and the U.S.A.	Therapy	The children from the 2 groups made significant progress as a result of both

	colleagues (2010)			face-to-face and online sessions held by the school.
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According to the research done by Edwards, M. Stredler-Brown, A. Houston, KT (2012), in studies conducted from 2003 to 2011, progress or regression in online therapy are not conditioned by language disorder, thus, in aphasia, in the evaluation stage no significant differences were found when comparing the two therapeutic forms. The same insignificant differences were found in the case of the following disorders: apraxia, voice disorders, and speech fluency disorders.

Types of online therapy

Online speech therapy involves offering services through a live meeting, with optimal resolution, with the help of a special platform. The online therapy session is similar to the one in the office, held face to face, with one major exception: it takes place in two different rooms. During the speech therapy session, the interaction takes place live, using the video camera, headphones and microphone, via a real-time internet connection. This being a therapy carried out in a synchronous system. The offline services offered involve the exchange of information between the therapist and the person with language disorders, this being asynchronous therapy, without the real-time presence of the people involved in the therapy.

Online therapy recommendations

It is recommended that the background be monochromatic, preferably white or light blue, to attract as little attention as possible.

The webcam will be positioned properly, in order to show the articulatory system and the materials used by the therapist as best as possible.

The therapist's behaviour in front of the camera will be similar to that of classical therapy; he must be able to check his appearance, as well as how the room and the objects around it are seen. The description of the therapeutic process is mandatory, both for the adult with language disorders and for the supporting parent of the child with language disorders.

The use of online speech therapy offered comfort and flexibility to all children who first went through speech therapy sessions in the classic system. Online speech therapy completely reduces the time spent traveling and staying in traffic, giving them more time spent together.

Studies have been conducted in order to determine the effectiveness of online speech therapy intervention compared to the traditional one, at a young school age. Thus, Danielle Wales et. all, in the study published in 2017, in the *International journal of Telerehabilitation*, "The efficacy of telehealth-delivered speech and language intervention for primary school-age children: a systematic review", concludes with the following: although the research was limited in quality, the evidence presented showed that teletherapy is a promising service as a method of intervention on language and its improvement, emphasizing that these services were offered mainly to children living in remote geographical areas, with 2 different approaches: from institution to institution, or from institution to the family. Although some positive findings have

already been published, the authors believe that further research, using more rigorous study models, is needed to further investigate the effectiveness of online speech therapy.

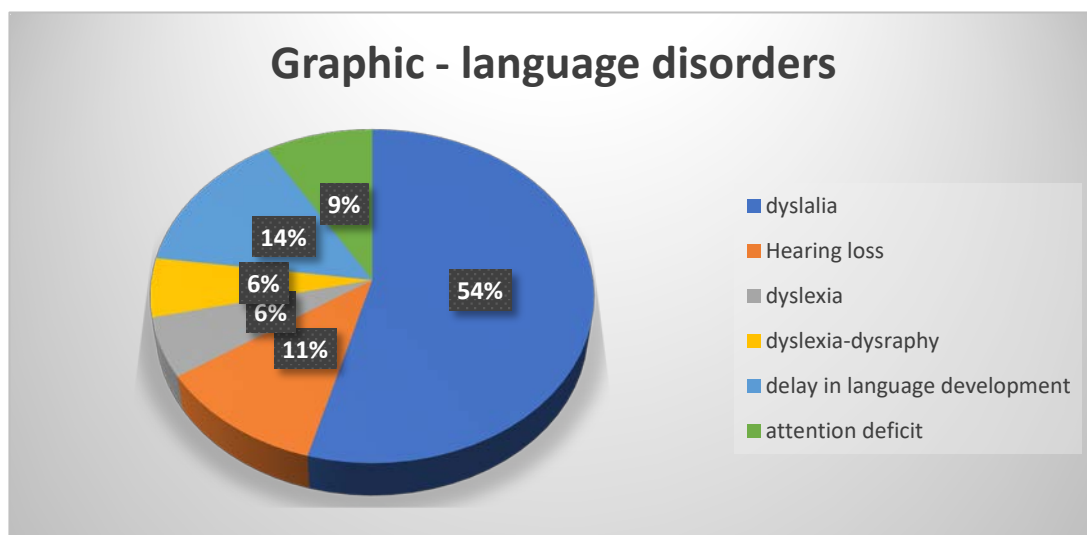
In the 2016 study, from Australia, which looked at expressive and receptive language, but also phonological awareness at ages 3 to 12, 78.9% achieved their goals and 68.9% even exceeded them. In the 2010 study from the U.S.A., which aimed at affected sounds and comprehension, 75% of the objectives were achieved, all participants presenting a high degree of satisfaction with their progress. In 2015, in the U.S.A., a study was conducted regarding the correction of sounds in children aged 4.5 - 9.8 years, following the effectiveness of Apple's iPads, through which online speech therapy was performed, especially on Facetime, participants achieved 33% of sound correction objectives and 100% of communication objectives.

In general, the findings revealed that online speech therapy is a form of therapy also recommended for children with disabilities, however, there are still issues regarding its quality and effectiveness.

With the transition to the online teaching system, in accordance with the new regulations, the online speech therapy activity had to adapt to the requirements, transforming a "silent" participant into an "active" one, namely - the parent. It became the child's "shadow", especially of a child with special educational needs, and also the speech therapist's "right hand". Regarding this subject, I conducted a research by distributing a questionnaire, with 16 questions, to the parents who participated with their children in online speech therapy sessions.

A total number of 51 questionnaires have been registered. Of the 51 completed questionnaires, 35.3% represent children with special educational needs and speech disorders, and 64.7% represent children with speech disorders.

Analysing the total number of children, the survey showed that 73.1% are boys and 26.9% are girls, which underlines the fact that boys are more prone to develop a speech disorder than girls are.



From the total number of (various) language disorders mentioned in the questionnaire's results, 54% are dyslalia, 14% language development delays, 11% hearing loss, 9% attention deficit.

The relationship between the parent and the speech therapist was represented by using 5 degrees of comparison, from *excellent* to *unsatisfactory*.

According to the chart above, 51.4% cooperated excellently with the child's speech therapist.

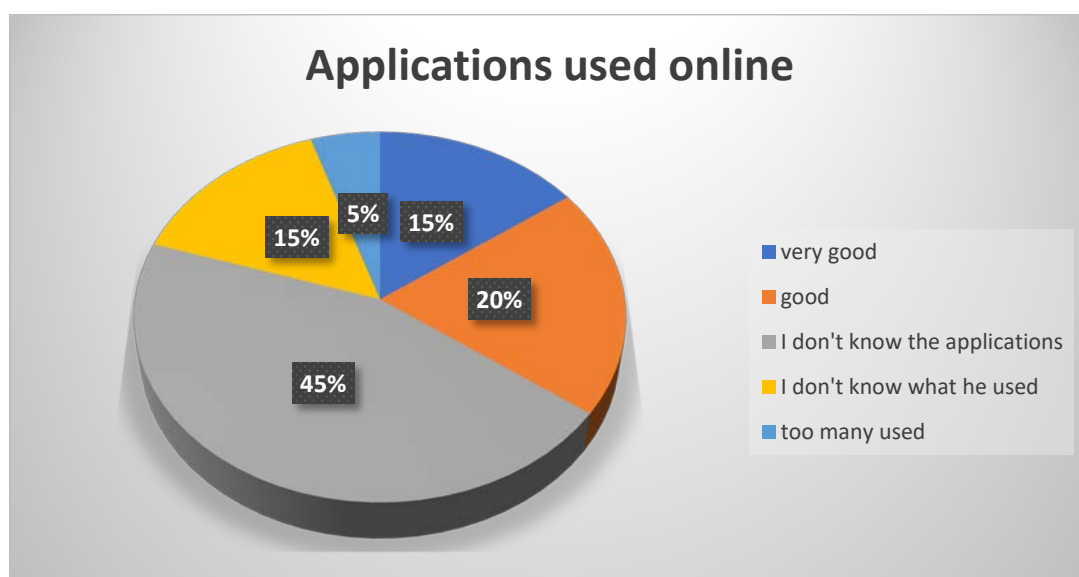
From the total, 95.2% of respondents stated that online speech therapy was conducted in a synchronous system, and 14.3% said that online speech therapy was conducted in an asynchronous system.

From the discussions with the parents, but also from the questionnaire presented, the most present shortcoming in the development of online speech therapy was the lack of connection, due to the incongruence between the school's schedule and the parent's schedule; in most of the cases, the parent had to be at work. A significant percentage (18%) accounted for the insufficient number of online speech therapy sessions per week.

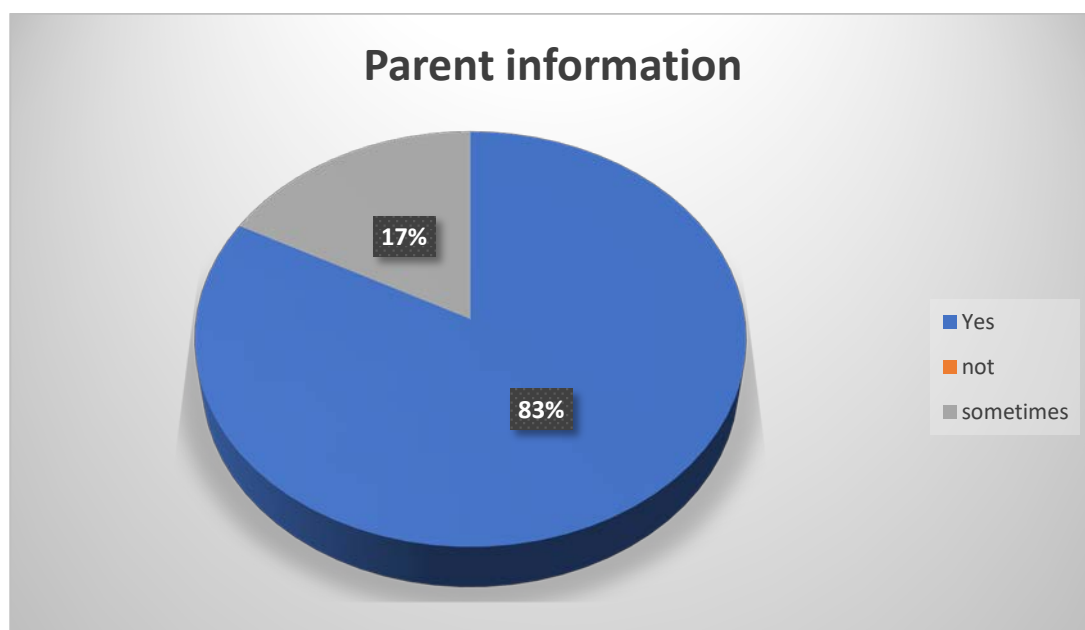
Regarding the speech therapist's behaviour during online sessions, 85% of parents found the speech therapists to be "understanding", 25% "playful", 15% "flexible" and 100% concluded that the speech therapist was a "pleasant" person.

As for the "speech therapist-child relationship: 75% of parents mentioned their children's desire to have more meetings scheduled. Parents rated the children's progress as "visible progress" (71.4%) and "minor progress" (28.6%).

Regarding the use of applications during online therapy, 45% of parents do not know these apps, and 15% considered the following as being very useful: Wordwall, BookCreator and Jamboard.



The speech therapist informing the parent, at each session, found an affirmative answer in the proportion of 83%



Regarding the question: “What are the advantages of online speech therapy?”, 37.1% of parents answered “schedule flexibility”, 34.3% “I don't have time for classic therapy”, and 31.4% mentioned the reduced transport costs, due to lack of travel. The parents' opinion about the synchronous speech therapy carried out online, materialized in: 11.4% considered it to be "good", 5.7% said "it is a good solution in pandemic conditions", while 2.9% concluded that “the classic version is much better”, the rest of the respondents preferred to not give an answer.

I found that the idea of online therapy may seem quite daunting at first to some parents, especially those who are a little “technophobic” (phobic about technology)! However, after I recently started practicing online therapy, both the parents and I found it as: a new and innovative field. The use of online therapy is actually quite simple, both for the therapist and for the child. The online speech therapy, in the case of children with special educational needs, can be a delicate subject, because the disability itself can be an obstacle in fully achieving the proposed objectives.

Advantages and disadvantages of online speech therapy.

As a first advantage, also mentioned by parents in the above questionnaire, we can talk about the reduction of travel costs and the flexibility of the schedule. An advantage noticed especially by speech therapists is the motivation of children to respond through the computer or tablet. From the point of view of adults, they prefer to hold meetings in the comfort of their own home, without having to travel to the office.

Other advantages include: personalization of materials and personalization of web design activities.

As for the disadvantages, we can mention: the lack of physical contact, reduced visual contact and syncope in communication.

Also, other shortcomings of this therapeutic form can be mentioned, especially in the cases of children with disabilities: the child's capacity to pay attention (as well as how he manages to keep his attention on the task), verbal comprehension, auditory and visual skills, the

child's behaviour during therapy, the parent's technological skills, the availability of parents or family to participate in the online meetings, access to technological resources.

Conclusions

Present studies have pointed out the many barriers and limitations in the implementation of online therapy. The most frequently mentioned barrier was technology failure. More and more specialists are turning to this form of therapy. It is recommended, however, an analysis of each case before establishing the therapeutic form: online or classic. Many specialists recommend face-to-face therapy, especially to the children who present no mobility impairments.

Online speech therapy is an individualized action; as individualized as the choice of therapeutic activities performed in the classical system.

Online speech therapy limits physical interaction, but not the therapist's empathy; it is proven to be effective when it is personalized, starting from the moment it is chosen, and the results can be positive and promising even for the cases that present a disability.

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