The Role of Linguistic Knowledge in the Treatment of Speech and Language Disorders

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Abstract

Language serves as the foundation for linguistics and speech-language pathology (SLP), and there is enormous potential for knowledge exchange between these two fields. In developed nations like US, UK, and Australia, where studies have shown that professionals employ linguistics-related resources to treat speech and language disorders, the relevance of linguistic experts is widely accepted (Cummings, 2008; Ball & Muller, 2009; Bowen, 2011). However, it appears that research on cooperation between linguists or speech and language pathologists is not given enough attention in nations like Pakistan. The main aim of this research was to determine the significance of linguistic knowledge in the treatment of speech-language disorders. The data was collected from 39 SLPs(Speech Language Pathologists) using interview as an instrument. The interviews were conducted to evaluate the role of linguistic knowledge in the therapy of various speech & language disorders. Research findings revealed that the speech therapists reported to have taken linguistics courses and possess a good understanding of phonetics and phonology. Linguistics knowledge is beneficial when assessing disordered speech and language since abnormal speech is measured and judged using linguistic parameters. The findings of current research also suggest that SLP modules in Pakistan should additionally cover Urdu linguistics. Speech or language therapy should, therefore, involve thorough instruction on Urdu

pronunciations, especially vowels and consonants.

Keywords: Linguistic knowledge, Language disorders, Speech-Language Pathologists

1.   Introduction

As a cognitive tool in the development and improvement of our worldviews, language has broadened human experience (Fantini, 1989). Humans use language, both spoken and written, as their primary means of communication. The left side of the brain, which manages human communication, is where language messages are formed in the human brain, which is the hub of linguistic activity. Boeree (2004) uses the term "lateralization of the brain" to describe the idea that language development takes place in a specific area of the brain. However, left-handed individuals may have right brain language activation. According to MacAllister and Miller (2013), linguistics is the study of language as a whole and deals with the organizing principles of language. They believe that in order for practitioners to undertake speech therapy, they must possess a rudimentary understanding of linguistics. The guidelines outlined by the Royal College of Speech and Language Therapists (RCSLT) for their curriculum mandate that aspiring speech therapists complete a course in general linguistics in addition to other relevant subjects like sociolinguistics and the evolution of human language. These statistics emphasize how crucial the study of linguistics is for speech therapists.

Speech therapy & linguistics come together in clinical linguistics. The subject of clinical linguists' research is the use of linguistic skills in the actual world, where information obtained from clinical circumstances is combined with theoretical linguistic knowledge. This interaction helps to categorize speech and language disorders and offers techniques for effective involvement (Ball & Muller, 2009). Speech therapy serves as the source of numerous situations in clinical linguistics, but linguistics advances our understanding of language.

The nature of language, structure, and purpose are all covered in great detail by linguistic knowledge. These features are all examined as linguistic elements. Although there are complex connections between these levels or components in the language system, we evaluate them separately even though they are conventional and, to some extent, artificial divisions of linguistic study. The first element is phonology which is the study of speech sounds (Brinton, 2000).

In his explanation of the three aspects of speech and language disorders, Bloom does a good job. Therefore, a speech and language disorder can be described as inappropriate language development concerning language content, form, & use. The other two subcategories of linguistic disability are speech problems and disorders of language. A person's difficulty in controlling speech rate and accurately uttering sounds is also a speech problem. Similarly, any voice-related condition will also be categorized as a speech disorder. The incapacity to interpret others' messages and create mental language structures indicates a language disorder.

 The current study aims to find a correlation between the discipline of linguistics and speech-language pathology. The following are the main objectives in carrying out this research:

Research Objectives
1.   To learn how linguistic knowledge affects the treatment of speech and language disorders.
2.   To determine what kind of linguistic knowledge Pakistani speech-language pathologists need to treat speech and language issues.

Research Questions
Q1. What is the role of linguistic knowledge in the treatment of speech and language disorders?
Q2. What type of linguistic knowledge do speech-language pathologists of Pakistan require for the treatment of speech and language disorders?

2.   Literature review

Stork and Widdowson (2014), while discussing the scope of linguistics in the treatment of speech and language disorders, suggest that collaboration in the field would be advantageous to both parties because research on deviant speech can also shed light on issues with normal speech. Linguists may have an excellent opportunity to study those language stages that can manifest in cases of normal language development in two areas of speech-language pathology: the phenomenon of delayed speech in children and the unintentional impairment of linguistic ability (aphasia) in adults.

Similarly, research on language-impaired persons can shed light on how languages are put together. Language analysis is linguists' main focus, and speech-language pathologists also have language as their main area of interest. In the realm of treating communication difficulties, this makes both linguistics and linguists relevant. Stork & Widdowson further point out that language teachers apply their linguistic expertise practically throughout the area of language education and that this is equally true in the practice of speech therapy.

According to Crystal (1987), linguists and therapists should describe their respective areas' contributions from a realistic standpoint. He believes that providing information regarding the development or disappearance of language traits, linguistics or linguistic knowledge can help with treatment. Phonetics deals with the information of syntax and semantics. Thus, these phonetic analysis techniques are crucial to speech therapists' training.

Crystal (1987) points to the problem with the child's language syntax or vocabulary analysis. He also holds that what is considered normal is always relative when it comes to vocabulary because, even though a child with a vocabulary of 100 words may seem to have a limited selection of words, if the child is aware of the various meanings of words like "take" and "put," he can use this limited vocabulary to describe a variety of activities and objects in the real world.

In contrast to speech & language pathology, a practical field that addresses all issues impairing a person's ability to communicate effectively in society, linguistics appears to be a theoretical field that bases its understanding on human language faculty. However, it has been noted that speech and language disorders are connected to language and shed light on a child's transition to adulthood and the neurological processes occurring in our brains.

Ravid & Dattner (2014) claim that SLPs require a solid foundation in cognitive linguistics, neurolinguistics, and sociolinguistics. As a result, those who treat language or speech disorders need to go to linguistic theory for assistance on the nature, structure, and role of language. Additionally, they gain from understanding how languages change and how language is encoded in the brain.

3.   Methodology
Research Design
The current investigation was carried out using a qualitative research design methodology. Speech-language pathologists (SLPs) were interviewed for the study.

Population and sampling
The research problem evolved for the current study focused on finding out the role of linguistic knowledge in the treatment of speech and language disorders. Treatment of communication disorders is carried out by specialists who are speech-language pathologists or speech therapists. These are the people who treat linguistic disorders. These people possess unique skills, including knowledge of speech and language, speech sounds, oro-facial anatomy, and the function of different speech organs. Apart from these, they also are given some training in the clinical aspects of speech and language disorders.
The purpose of the study is to determine how speech pathologists affect the management of speech and language disorders. The participant sample of the study includes speech-language pathologists employed in Punjab. Speech-language pathologists have a variety of jobs. Many people are employed by Punjab special education institutions, while some work in independently operated clinics, government and private hospitals, or both.

Research Instrument
For the present research, a semi-structured interview was used as a tool for collecting data. This tool is helpful in gathering information from those involved in the therapy of speech or language disorders. These people are working on this task in various contexts or domains in Pakistan. According to Berg (2007), Interviews are excellent methods for gathering data because they provide participants a chance to express themselves verbally and emotionally. When there is not much knowledge available regarding the phenomenon and developing theories rather than verifying them is the main goal, interviews are used.

Transcription of Interviews
While some of the interviews were recorded in Urdu, English was used for transcription and translation. The PhD experts additionally carefully examined the translated versions. It took the researcher a lot of time to complete the demanding and time-consuming work of transcribing the audio recordings. Bailey (2008) adds that transcription is a time-consuming procedure that can take many hours. She also suggests that the researcher should use the data-reduction approach when transcribing. Each interview recording was manually listened to by the researcher, who subsequently typed up the transcriptions in Word documents. Each interview transcription was done separately and then saved in a different Word document. The researcher enlisted the assistance of two PhDs from relevant fields to analyze the

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transcriptions and check their grammatical structure to ensure the accuracy of the translations.

4.   Results

The researcher reviewed the key themes gleaned from participant interviews in this portion. The function of linguistics or language expertise in speech therapy was the first important query. The participants (N=39) went into great length about the significance of language expertise.
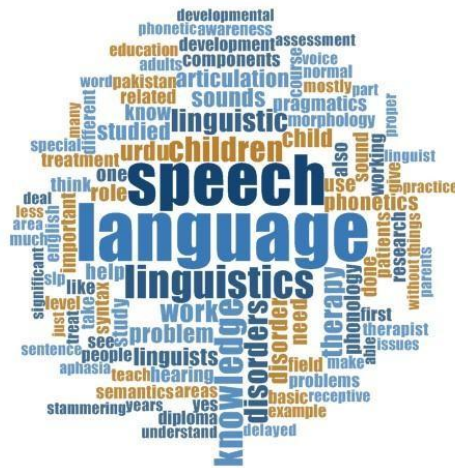

Fig 4.1: Word tag of linguistic knowledge

The visual output of the text-based data was extracted in the form of a word cloud. A word cloud is a data visualization created using NVivo's text frequency count feature. The words' size and other visual characteristics are significant in the provided data (Hai-Jew, 2016). Any word's position within the word cloud also demonstrates its significance within the text. In the center are those phrases that stand out the most. The most common and significant words in the text are those that are located in the very middle. These ideas have been articulately discussed by the participants, who believe they are pertinent to the debate over the use of linguistic expertise in the treatment of speech or language disorders.

Another visual output was obtained in the form of a word tree. The word tree's trunk reveals linguistic expertise as the primary idea. The essential terms have been highlighted in red by the word analysis tool, and all pertinent and significant quotes have been displayed as branches.

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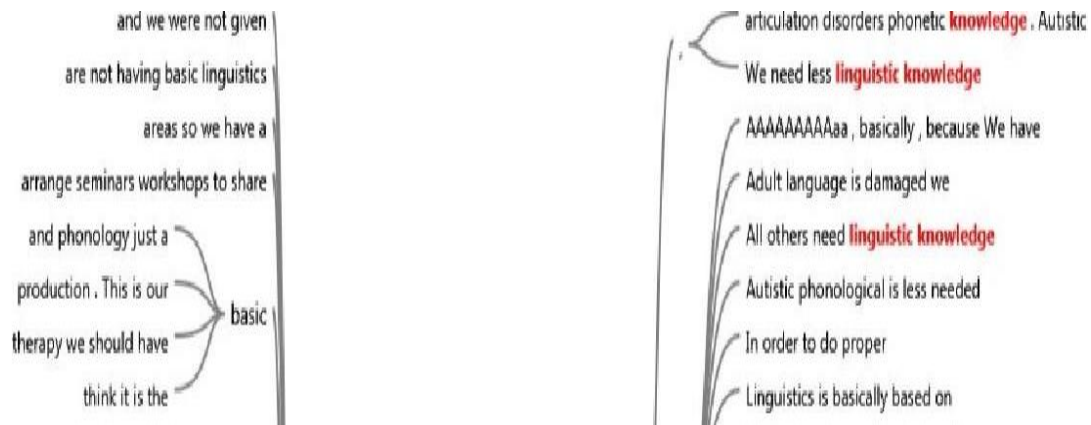

Figure 4.3: Word tree diagram illustrating connections between the knowledge of linguistics and several participant statements

The statistics from the transcriptions demonstrate the value of linguistic expertise in the management of various illnesses. Therapists would not be able to do their jobs without such information. Phonetic knowledge has a more significant role in the therapy of articulation disorders in particular. They have stated that all problems require language understanding except for some, such as dyslexia which does not.
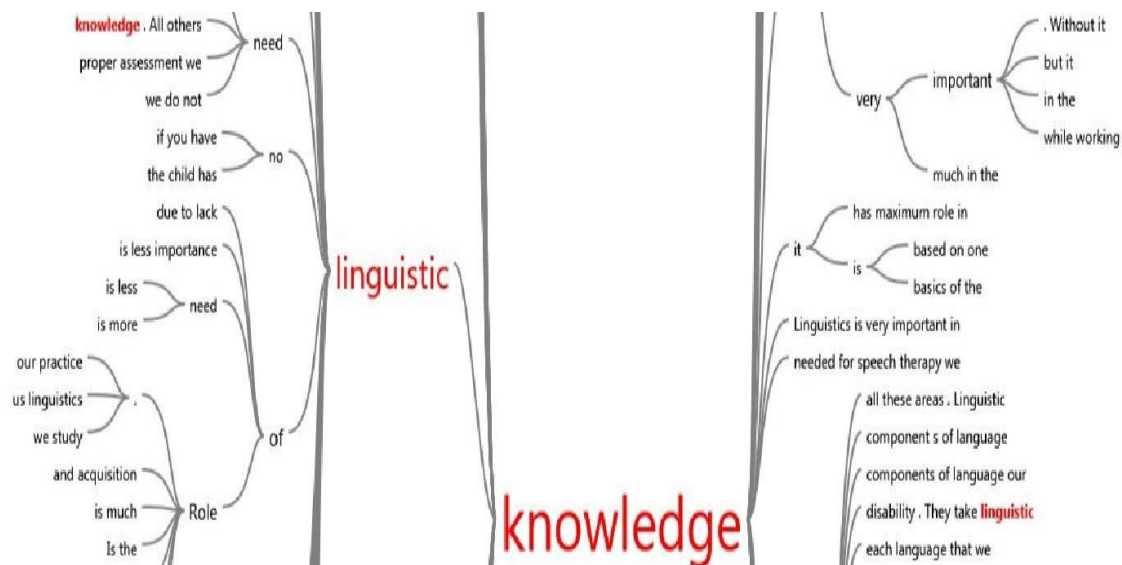

Fig 4.5: Word tree diagram illustrating connections between the knowledge of linguistics and several participant statements

Figure 4.5 emphasizes the value of language expertise in the evaluation process. Language problems also involve semantics. Speech therapists must be familiar with sentence structure,

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syntax, and grammatical units. They study linguistics to acquire language expertise for more accurate diagnosis and treatment of illnesses.
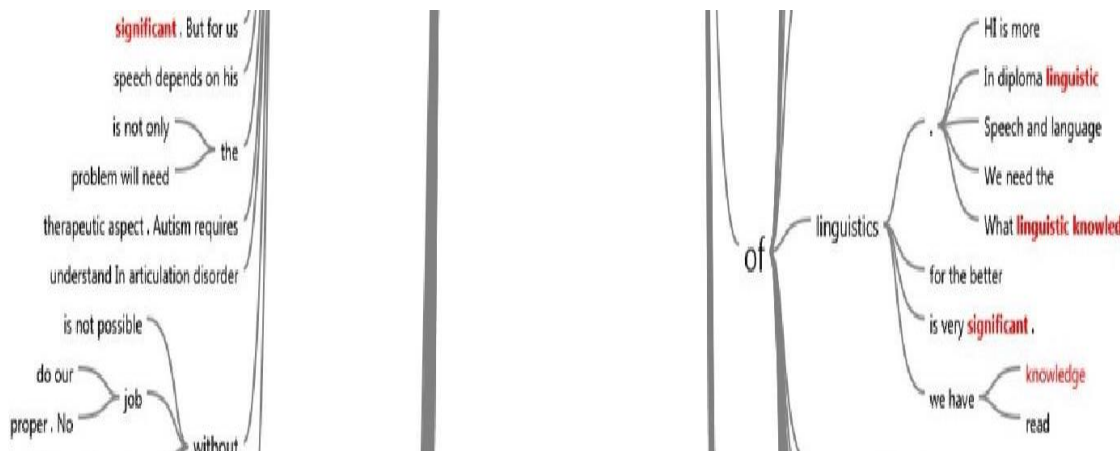

Fig 4.6: Word tree diagram illustrating connections between the knowledge of linguistics and several participant statements

Phonetics
The significance of linguistic knowledge has also been assessed in its principal subfields. The information on phonetic knowledge produced:
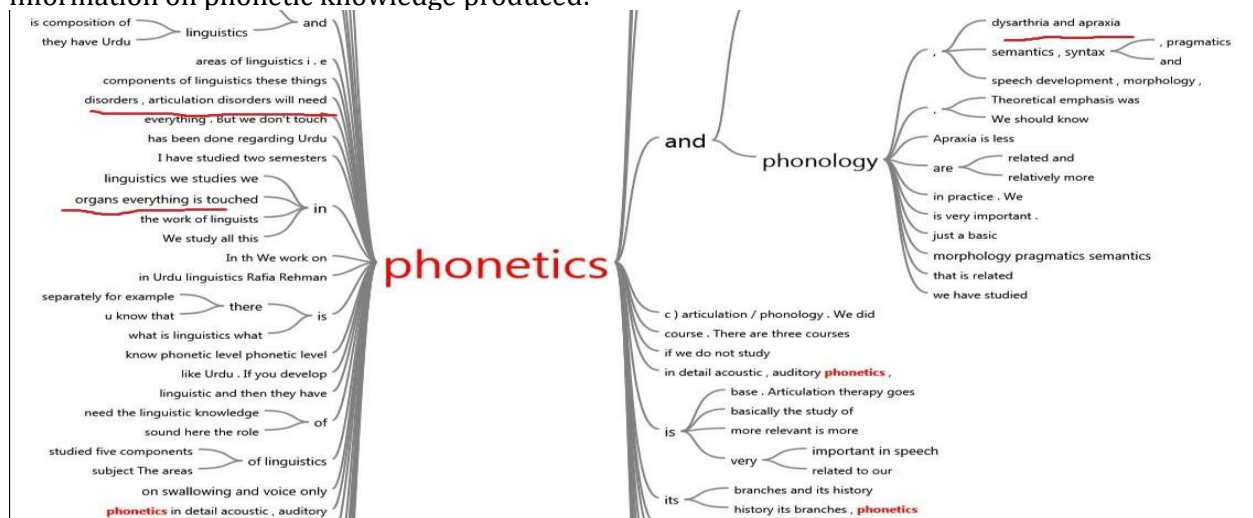

Fig 4.7: Diagram of a word tree illustrating how phonetics relates to the therapy of speech or language disorders

Figure 4.7 demonstrates that speech therapists are aware of the value of phonetic expertise while treating speech and language difficulties. The results of a text search indicate that the

majority of speech and language disorders are treated using phonetic expertise. Understanding phonological processes is critical for speech therapists because it allows them to identify speech variations in their patients. A total of 13 times in their interactions, speech therapists recognize the value of phonetic transcription.

Pragmatics
Pragmatics is an additional linguistic element that is commonly mentioned. Its mention in data has been done 41 times. In Pakistan, pragmatics is also taught to speech therapists, therefore pragmatics competence is essential for speech therapists.
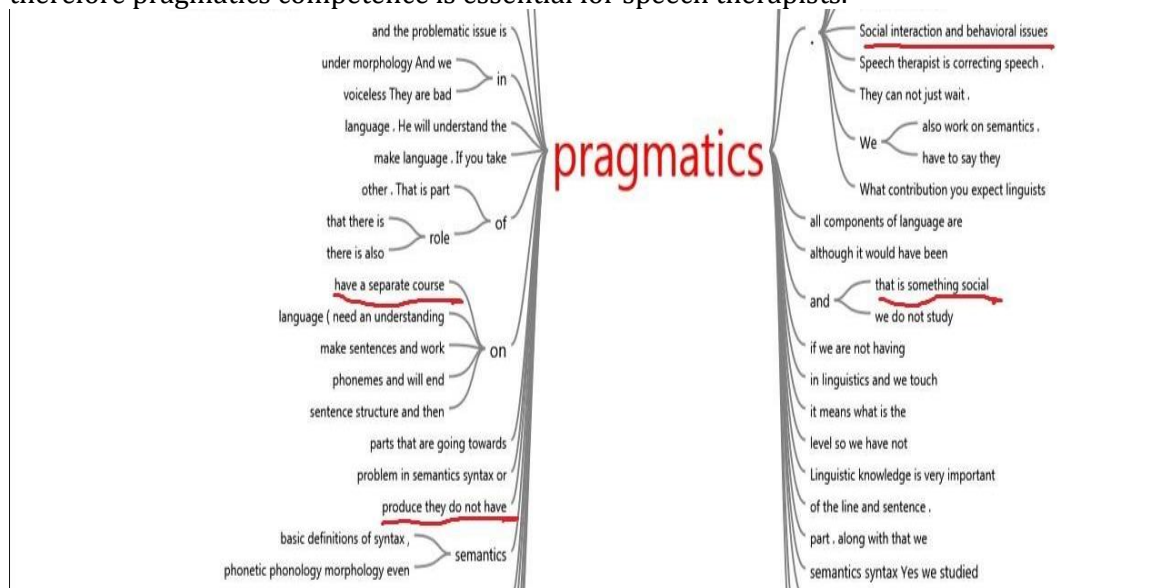

Fig 4.8: Word tree illustrating how pragmatics relates to the therapy of speech or language disorders

The participants' remarks illustrate the significance of pragmatic understanding for speech treatment, which is highlighted in Fig. 4.8. Speech therapists have called attention to the necessity of a distinct course on pragmatics, as it would be beneficial for kids with pragmatic difficulties. Children who are mentally challenged (MC) appear to have very limited pragmatic skills. According to the participants' statements, youngsters who have ASD (autism spectrum disorder) and ADHD (attention disorder and hyperactivity disorder) have difficulties using language in social situations. This issue emphasizes how crucial practical knowledge is when treating speech and language difficulties.

Syntax
The research and study about sentence structure is known as syntax. The therapists have indicated that syntax is connected to the rules and conventions of sentence construction, which suggests that they have become aware of the study of how sentences work. In the interviews, the word was used 39 times.
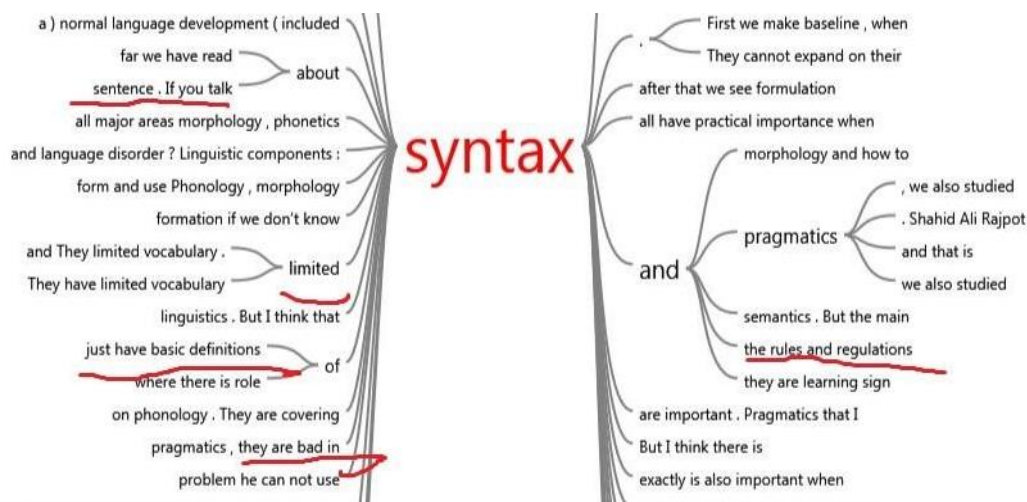
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Fig 4.9: Word tree illustrating how syntax relates to the therapy of speech or language disorders

Figure 4.9 demonstrates how the therapists used words like grammar (9 times), grammatical (6 times), and phrase (18 times). Clients are taught sentence creation by therapists (SLP5). They believe that their information on grammar or syntax is merely rudimentary and that they ought to study sentence analysis. It seems clear from the remarks that speech therapists believe that speech treatment is impossible without a solid understanding of grammar. The figure shows the significance of syntax in therapy for speech.
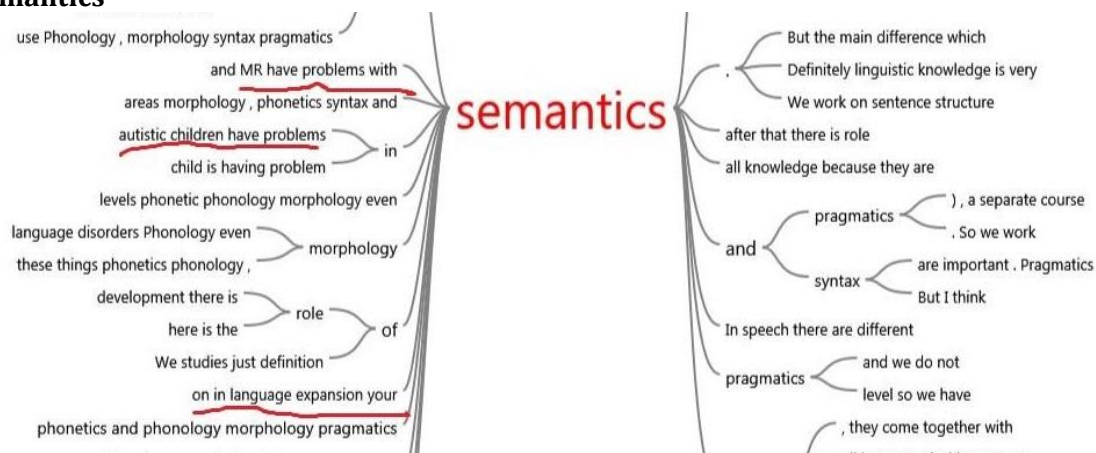
Semantics

Fig 4.10: Word tree about the semantic knowledge

The practical value of semantics knowledge in the treatment of speech and language disorders appears to be recognized by SLPs. There are 34 instances of the word "semantics" throughout the text, along with four examples of semantics and nine instances of meaning. The therapists learn the fundamentals of semantics. Semantic difficulties are typically observed in children with MR and autism. The child is given the concepts and meanings of the

things during the language development phase.

Urdu Language

Urdu is the official language of Pakistan and Urdu language is used throughout the country as a common language or lingua franca. Punjab province has a diversified population from a linguistic perspective, with significant populations speaking Urdu, Punjabi, Saraiki, and Pothohari. The language of choice for communication in schools, universities, and workplaces is Urdu.
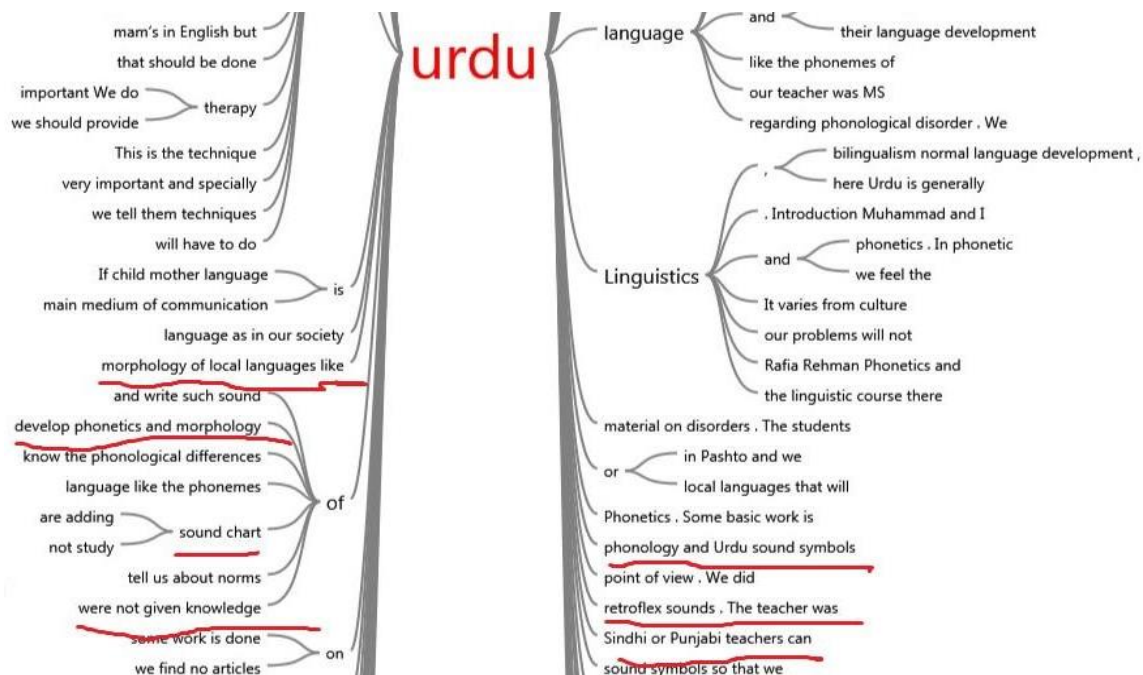

Fig 4.10: Importance of Urdu in tree diagram

Even speech therapists speak Urdu. The word appears on the list of frequently used words since it appears 73 times throughout the text. This high frequency of mention shows how significant and relevant Urdu is to SLPs. In the setting of Pakistan, Urdu has become more pertinent in speech-language pathology than English.

Local languages like Punjabi, Saraiki, Pashto, Balochi and Potohari

The use of regional languages within language and speech treatment was found to be one particular challenge in the setting of Pakistan. SLPs also need to be familiar with phonetics in Urdu as well as regional tongues like Sindhi, Punjabi, or Pashto. Saraiki and Punjabi are relevant in the background of Punjab. Therefore, therapists require linguistic expertise in these two languages.
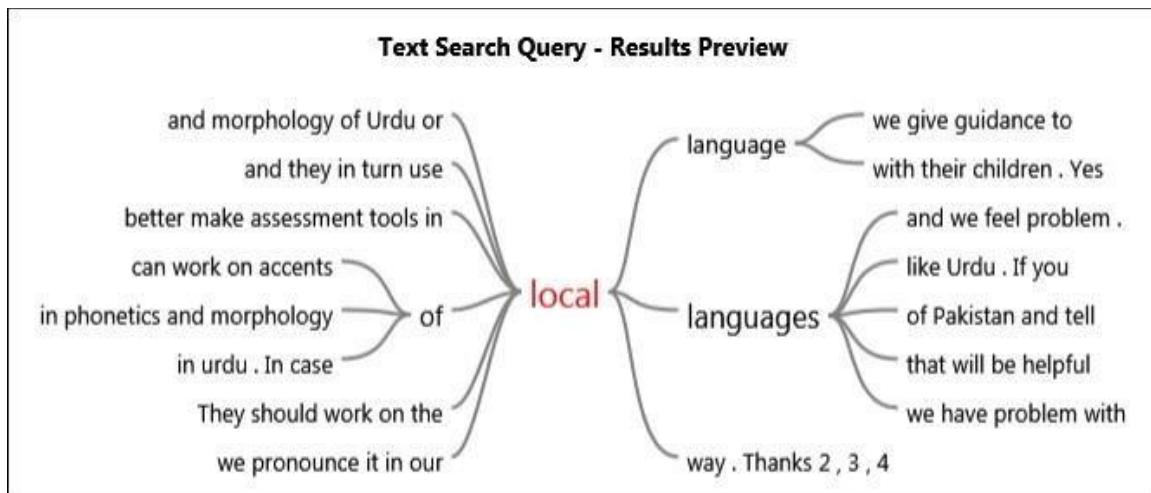
Fig 4.11: Local languages and speech therapy

Another issue that is relevant to the context of Pakistan is the function of regional languages and the relationship between the treatment of speech and language disorders. Since the majority of the population is illiterate, speaking Urdu with them can be challenging. While some speech therapists are not fluent in these languages, they communicate Baluchi, Pashto Saraiki, Punjabi as well as Pothohari at their homes. The speech therapists explained that they conduct their sessions in Urdu while the parents practice the procedures with their children at home in their local language.

Discussion
The results of the present research demonstrate that Pakistani speech-language pathologists believe that a profound understanding of the place and manner of articulation of consonants is crucial to their professional success. However, one reality remains: most of the time, they only use examples from Urdu to illustrate the manner and location of English consonants. However, Urdu contains several sounds that are absent from English; therefore, most of the time, these sounds are not taught in English phonology textbooks. Therefore, comprehensive charts of Urdu phonology must be incorporated into Pakistani speech-language pathologists' curriculum (Saleem et al., 2002).
However, some of the participants emphasize the value of morphological information. Some speech therapists have admitted that they are only taught the terminology of these ideas, therefore they only receive a basic education. A speech therapist employed by the IRM (Institute of Rehabilitation Medicine) in Rawalpindi admitted that they use less morphological knowledge during their treatment practice (SLP 28). According to ASHA (2002), trained SLPs should assist kids in using their understanding of language systems to understand spoken and written language.
Wolter and Green (2013) state that morphological awareness is beneficial for kids with reading problems. Grammatical morphology is a continuing area of growth and potential concern for school-age children with language difficulties (Koutsoftas, 2014).

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The results have revealed that Pakistani speech therapists have studied syntax to carry out their responsibilities more effectively, but there is a need for individuals to increase their understanding of syntax. There is a shortage of studies on speech therapy and there is room for further exploration. A lack of awareness about semantics among Pakistani speech-language pathologists has been discovered in this current research which indicates that their professional training places minimal emphasis on semantic instruction. Semantics may receive less attention because Pakistani SLPs have read it briefly (Badar & Mumtaz, 2015).

In the training of speech and language pathologists from Children Hospital Lahore or the University of Health Sciences, pragmatics appears to be less stressed. This indicates that semantics, as well as pragmatics, are not given as much attention by Pakistani speech therapists as they are much focused on articulatory phonetics. In the study of publications that appeared in the journal Clinical Linguistics & Phonetics from 1987 to 2008, Sidiquie (2013) noted that there was a continuous emphasis on phonetics and phonology at the expense of grammar, semantics, and pragmatics.

Gaps in cultural along linguistic proficiency, according to Perry (2010), "may result in adverse views and perspectives toward clients, which may impede the effectiveness of assistance delivery." The value of linguistic expertise has been emphasized by Hutchison (2009) in their work. According to him, linguistics has been useful in their work and has provided a more accurate description of typical language learning.

Conclusion

The aim of the research was to investigate how linguistic expertise may be used to treat speech and language disorders. Interviews were used to get the data from the participants. Based on the data, it can be said that linguistic knowledge, which was once considered to be slightly associated with linguistics, is actually an integral part in the treatment of language barriers in any form. The assessment of disordered speech and language benefits from having linguistic knowledge since linguistic standards are used to measure and evaluate abnormal speech. Each aspect of language, including its sounds, phrases, meanings, and social applications, is evaluated. Standards of language proficiency play a main role in the process of finding variation from the norm. In Pakistan, speech-language pathologists pursue linguistics. They appear to have stronger phonetic knowledge than other verbal information but the scope of dependence on linguistic knowledge requires to be enhanced by arranging a meaningful interaction between the experts of two fields in order to gain more effective results from speech therapy.

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